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# 2020–2021 LEAP Connect Operational Technical Report

English Language Arts, Mathematics, and Science in  
Grades 3 through 8 and High School

**LEAP  
CONNECT**



## Table of Contents

Chapter I. Technical Summary .....	1
Overview .....	1
Target Stakeholders and Intended Uses .....	1
Document Structure .....	2
Chapter II. Overview of the LEAP Connect Assessment System .....	5
Historical Context and Applicable Content Areas .....	5
Statement of Core Beliefs and Guiding Philosophy .....	5
Purpose of the LEAP Connect Assessment System .....	6
Chapter III. Validity Evaluation Framework .....	7
Background of NCSC-developed ToA and IA for ELA and Mathematics .....	7
Science .....	9
Validity Evaluation .....	9
Summary of Validity Evaluation Results .....	11
Content Coherence .....	11
Comparability.....	12
Accessibility and Fairness.....	12
Consequences .....	13
Summary .....	15
Chapter IV. The Population of Students .....	17
Description of the Student Population .....	17
LEAP Connect 2021 End of Test Survey .....	17
Participation in the LEAP Connect Assessments.....	19
Chapter V. Content of the Exams.....	22
Claims Guiding the System.....	22
Connection to Grade-level Standards.....	22
ELA and Mathematics LCs .....	23
Science LCs .....	24
Development of Content Claims.....	24
ELA and Mathematics Development .....	24
Science Development .....	25
Adoption of Claims.....	26
Reviews .....	26

Item Bank Review .....	26
Content, Bias, and Sensitivity Review .....	27
Data Review .....	27
The Claims .....	28
ELA Claims .....	28
Mathematics Claims.....	29
Science Claims.....	29
Chapter VI. Instructional Context .....	30
Instructional and Curricular Needs .....	30
Instructional and Curricular Resources.....	30
Supporting Communicative Competence .....	31
Chapter VII. Test Development.....	33
Approach to Test Design .....	33
ELA and Mathematics Constructs .....	33
Science Constructs .....	34
Principled Design and Universal Design.....	35
Test Features.....	36
Assessment Frameworks .....	36
Test Specifications included in the Assessment Frameworks .....	36
Blueprints.....	37
Item Writing Specifications.....	37
Passage and Item Development .....	38
Item Reviews.....	38
Educator Stakeholder Reviews .....	39
Passage Reviews .....	39
Content, Bias, and Sensitivity Reviews .....	40
Science Item and LA Connector Alignment Evaluation.....	43
Field Testing Overview.....	43
2020-2021 Field Testing Plan.....	43
Item Analyses.....	44
Forms Assembly.....	44
Chapter VIII. Operational Test Administration .....	45
Overview .....	45

Administration Procedures and Guidelines .....	45
Test Calendar and Session Structure .....	46
Test Security.....	46
Administration Procedures .....	47
Accommodations Procedures .....	47
Administration Training .....	48
Use of Accommodations and Accessibility .....	48
Results from Operational Test .....	48
Chapter IX: Scoring.....	50
Scoring of Constructed-Response and Technology-Enhanced Items .....	50
Constructed-Response Item Scoring Process .....	50
ELA Constructed-Response Items .....	50
Mathematics and Science Constructed-Response Items.....	50
Selection of Scoring Evaluators.....	50
Reader Recruitment and Interview Process .....	50
Security .....	51
Handscoring Training Process .....	52
Training Material Development.....	52
Training and Qualifying Procedures.....	52
Monitoring the Scoring Process.....	53
Reader Monitoring Procedures .....	53
Validity Sets and Inter-Rater Reliability .....	53
Recalibration Sets .....	54
Inter-Rater Reliability .....	54
Rangefinding Background .....	54
Pre-Rangefinding/Scoring.....	54
Rangefinding/Scoring Meetings.....	54
Rangefinding/Scoring Process .....	55
Summary .....	60
Chapter X. Psychometrics .....	62
Operational Items Classical Statistics.....	62
IRT Calibration, Equating, and Scaling Process .....	63
Rasch Calibration .....	64

Scaling .....	69
Results.....	70
Evaluation Based on the 2021 Testing Data .....	74
Field-Test Classical Item Statistics.....	79
Chapter XI. Standard Setting.....	80
Chapter XII. Reliability.....	81
Reliability for Subgroups .....	82
Classification Accuracy and Consistency.....	82
Chapter XIII. Reporting, Interpretation, and Use of Scores .....	84
Chapter XIV. Validity .....	85
Evidence Based on Test Content.....	85
Evidence Based on Response Processes .....	85
Evidence Based on Internal Structure.....	86
Dimensionality and Local Independence .....	86
Evidence Based on Consequences of Testing .....	92
Differential Item Functioning.....	92
References .....	95
Appendix A. Executive Summary of Alignment Report .....	97
Appendix B. Classical Item Analysis Results – Operational Items.....	102
Appendix C. Item Bank Report for ELA .....	121
Appendix D. Item Bank Report for Mathematics.....	147
Appendix E. Passage and Item Review Checklists.....	162
Appendix F. CBR Report .....	166
Appendix G. Scale Score and Achievement Level by Population Categories.....	231
Appendix H. Classical Item Analysis Results – Field Test Items .....	248
Appendix I. LEAP Connect Standard Setting Report .....	249
Appendix J. Reliability by Population Categories.....	386
Appendix K. LEAP Connect Policy Level Definitions and Achievement Level Descriptors .....	396

## List of Exhibits

Exhibit 1. Overview of Structure and Purpose of Document Chapters .....	2
Exhibit 2. Theory of Action for the NCSC System, Adapted for the LEAP Connect System .....	8
Exhibit 3. LEAP Connect Alternate Assessment System.....	14
Exhibit 4. Alternate Assessment Participation Rates.....	21
Exhibit 5. Example Grade 8 Mathematics and Grade 3 English Language Arts LCs.....	23
Exhibit 6. Example Grade 8 Science LCs.....	24
Exhibit 7. Mathematics Measurement Targets.....	33
Exhibit 8. Reading and Writing Measurement Targets.....	34
Exhibit 9. Science Measurement Targets.....	34
Exhibit 10. LEAP Connect Participation Counts .....	49
Exhibit 11. Constructed-Response Field Test Scoring.....	50
Exhibit 12. Total Reads, 2018 English Language Arts Writing Field Test Items .....	56
Exhibit 13. Total Reads and Inter-Rater Agreement, 2019 English Language Arts Writing Field Test Items .....	57
Exhibit 14. Total Reads and Inter-Rater Agreement, 2020 English Language Arts Writing Field Test Items .....	59
Exhibit 15. Total Reads and Inter-Rater Agreement, 2021 English Language Arts Writing Constructed Response Items .....	60
Exhibit 16. Means and Standard Deviations for Item Difficulty and Discrimination .....	63
Exhibit 17. Number of Items and Maximum Score Points.....	64
Exhibit 18. WINSTEPS Data File Example .....	65
Exhibit 19. WINSTEPS Control Card Example.....	65
Exhibit 20. Sample Distribution.....	66
Exhibit 21. WINSTEPS Fixed Control File Example .....	67
Exhibit 22. Rasch Item Infit Statistics .....	68
Exhibit 23. Rasch Item Outfit Statistics .....	69
Exhibit 24. Cut Scores on the Theta Metric by Content Areas and Grades .....	70
Exhibit 25. Intercepts and Slopes.....	71
Exhibit 26. Cut Scores on the Reporting Scale .....	72
Exhibit 27. Raw-to-Scale Conversions.....	73
Exhibit 28. Descriptive Statistics for the Scale Scores for 2021 Testing Data .....	75
Exhibit 29. Percentage of Students in Performance Levels for 2021 Testing Data .....	76
Exhibit 30. Score Distribution for the Newly Created Scales .....	77

Exhibit 31. Reliability and SEM of 2021 Testing.....	82
Exhibit 32. Classification Accuracy and Consistency.....	83
Exhibit 33. Scree Plots of Eigenvalues Against Factors .....	87
Exhibit 34. Eigenvalue and Percent of Variance Explained.....	91
Exhibit 35. DIF Criteria .....	92
Exhibit 36. DIF Comparisons Groups.....	92
Exhibit 37. The Numbers of Flagged Gender DIF items for Content Area and Grades.....	93
Exhibit 38. The Numbers of Flagged Ethnicity DIF items for Content Area and Grades.....	94
Exhibit 39. Number of Years Teaching Experience .....	171
Exhibit 40. Areas of Experience (select all that apply).....	171
Exhibit 41. Grade 3 ELA Item Consensus .....	173
Exhibit 42. Grade 4 ELA Item Consensus .....	173
Exhibit 43. Grade 5 ELA Item Consensus .....	173
Exhibit 44. Grade 6 ELA Item Consensus .....	174
Exhibit 45. Grade 7 ELA Item Consensus .....	174
Exhibit 46. Grade 8 ELA Item Consensus .....	174
Exhibit 47. High School ELA Item Consensus .....	175
Exhibit 48. Grade 3 Mathematics Item Consensus .....	175
Exhibit 49. Grade 4 Mathematics Item Consensus .....	176
Exhibit 50. Grade 5 Mathematics Item Consensus .....	176
Exhibit 51. Grade 6 Mathematics Item Consensus .....	176
Exhibit 52. Grade 7 Mathematics Item Consensus .....	177
Exhibit 53. Grade 8 Mathematics Item Consensus .....	177
Exhibit 54. High School Mathematics Item Consensus.....	178
Exhibit 55. Grade 4 Science Item Consensus .....	178
Exhibit 56. Grade 8 Science Item Consensus .....	179
Exhibit 57. High School Science Item Consensus .....	179
Exhibit 58. Panelist Evaluation Results - Content .....	180
Exhibit 59. Panelist Evaluation Results - Bias.....	180

## **Chapter I. Technical Summary**

### **Overview**

Each year, the Louisiana Department of Education (LDOE) and its vendor engage in an iterative process to create a technical report that describes evidence of the validity of the scores resulting from the LEAP Connect assessment system. The technical report addresses the processes involved in the development of the aspects of the LEAP Connect assessment system, the outcomes of those development processes, and the evaluation of the assessments to ensure that LEAP Connect stakeholders have ample information to support interpretation and use of student scores.

This technical report includes decisions made during development to ensure the LEAP Connect assessments are consistent with the purposes for which they were designed, including but not limited to the following: 1) documentation of the programmatic, statistical, and psychometric procedures (e.g., equating studies) used to create and analyze the LEAP Connect assessments, and 2) documentation of the technical merits of the assessments (including reliability measures, evidence of validity, and evidence that the scores are valid measures for the intended uses).

This document is meant to provide evidence that 1) the LEAP Connect assessment items and accessibility features permit all eligible students, including ELs with disabilities, to demonstrate their knowledge and skills and do not contain features that unnecessarily prevent them from accessing the content of the item or from demonstrating their responses, 2) test forms yield consistent score meanings over time, forms within year, student groups, and delivery mechanisms (including multiple computer platforms), and 3) total test scores are related to external variables as expected (e.g., other measures of the construct). When relevant, the quality control processes implemented for an activity or deliverable are described.

To the extent possible, this report also includes evidence that the items are “instructionally sensitive;” that is, that item performance is related to the quality of instruction more so than to out-of-school factors such as demographic variables. It includes results of performance standards validation for all content areas, including the technical information verifying the merit of the process by an external evaluator.

### **Target Stakeholders and Intended Uses**

This document was developed for Louisiana educators, LDOE staff, federal peer reviewers, and Louisiana’s technical advisory committee (TAC). These stakeholders may use the information in this technical report to support their understanding of the development of the assessment system and the goals for the assessment system; their interpretation and use of student scores on the LEAP Connect assessments; and their communication with parents, the public, and other stakeholders about the assessments.

The information presented here is limited to the 2020–2021 operational administration of the LEAP Connect assessments. The LEAP Connect assessments are administered over a six-week window from early February to mid-March each year. The 2021 assessments were administered from February 1 to March 12, 2021.



## Document Structure

This technical report contains 14 chapters (see Exhibit 1). The information presented in these chapters aligns with the expectations set forth in the *Standards for Educational and Psychological Testing (Standards; AERA, APA, & NCME, 2014)*. Each chapter makes connections to the *Standards*, ensuring that the information included here is meaningful and appropriate for the intended stakeholders and their uses of this document, and that it supports the LDOE’s 2021 peer review submission.

### Exhibit 1. Overview of Structure and Purpose of Document Chapters

Chapter	Contents
Chapter I. Technical Summary	This chapter provides information on the purpose of the annual technical documentation, the organization of the information provided, and a description of the stakeholders for whom the technical documentation is intended.
Chapter II. Overview of the LEAP Connect Assessment System	This chapter describes the LEAP Connect assessment system. It provides an overview of the development of the assessment system, a description of each of the content areas, the statement of core beliefs and mission statement, the Theory of Action (ToA), and the purpose of the LEAP Connect assessment system.
Chapter III. Validity Evaluation Framework	This chapter details the validity evaluation framework and validity argument for the LEAP Connect assessment system. It describes the process for examining validity, with clear connections to the Validity chapter in the <i>Standards</i> (AERA, APA, & NCME, 2014), as well as validity questions and connections to the formative and summative evaluation.
Chapter IV. The Population of Students	This chapter describes the student population of Louisiana; specifically, the demographics of the population of students who are administered the LEAP Connect assessments.
Chapter V. Content of the Exams	This chapter provides key details around several assessment components: how the Louisiana Connectors connect to the Louisiana Student Standards, the development of the content claims, the iterative process of reviewing and adopting the claims, and finally, the claims.
Chapter VI. Instructional Context	This chapter describes the academic needs of this student population and includes a description of the instructional context. This chapter also describes the resources and professional development opportunities available to educators. Finally, it provides a description on how the LDOE supports communicative competence for the state, districts, educators, and parents.

Chapter	Contents
Chapter VII. Test Development	This chapter conveys information regarding the test design, with direct connections to the construct and the intended interpretation and uses of the assessment. This chapter explains the prioritized Louisiana Connectors for assessment. It also describes the development of test specifications, the blueprint, and the development and implementation of pilot tests.
Chapter VIII. Operational Test Administration	This chapter details the administration of the operational form. It includes information about the testing window, security procedures, accommodations and administration manuals, the implementation of quality control procedures, and results from the operational test.
Chapter IX. Scoring	This chapter describes the scoring process for all item types. It provides scorer demographics, scorer training, and interrater agreement results for all item types. This chapter also describes range-finding results for open-ended items.
Chapter X. Psychometrics	This chapter details the psychometric analyses for the operational form and includes details of the test-level and item-level results for the measurement model analyses. It describes linking and equating methods, as well as the process and methodology for deriving scale scores (when, and if, appropriate). It concludes with a description of the field test items and the process for including these items in future operational tests.
Chapter XI. Standard Setting	This chapter details the methodology chosen, the selection of panelists and their qualifications, the forms used for standard setting, and the rating process.
Chapter XII. Reliability	This chapter describes additional studies conducted to support the validity argument and the rationale for each of the studies. Each study is described as providing validity evidence for a specific purpose and connected to the ToA and IA, as well as the <i>Standards</i> (AERA, APA, & NCME, 2014).
Chapter XIII. Reporting, Interpretation, and Use of Scores	This chapter describes the approach to and procedures for reporting scores, and the intended interpretation and uses of scores. It describes the information found in student and district level score reports and provides a description of the audience.

Chapter	Contents
Chapter XIV. Validity	This chapter acts as an overall summary of the technical documentation and provides detail of validity evidence as it relates to each of the key validity evaluation questions. It provides evidence as it relates to summative assessment design and the instructional context. It synthesizes validity evidence in citing the LEAP Connect assessment system’s strengths, areas for improvement, and areas for future research as indicated by the various sources of evidence.

## **Chapter II. Overview of the LEAP Connect Assessment System**

### **Historical Context and Applicable Content Areas**

In December of 2016, the Louisiana State Board of Elementary and Secondary Education (BESE) approved new Louisiana Connectors (LCs) aligned to the 2016 Louisiana Student Standards (LSS) in ELA and mathematics. These connectors are designed for use in the instruction and assessment of students with significant cognitive disabilities. They are derived from the general education standards, but are reduced in depth, breadth, and complexity. The LCs in ELA and mathematics replaced what were formerly known as the Extended Standards. After the new LSS in science were approved in 2017, Louisiana began working with edCount, LLC, to develop LCs for science aligned to these new standards. The LCs for science were approved shortly after the adoption of the LSS for science.

In the 2017–2018 school year, Louisiana implemented the new LEAP Connect assessments in ELA and mathematics, which are fully aligned to the new LCs. The LEAP Connect assessments replaced the LAA1 assessment in ELA and mathematics, grades 3–8 and high school. The LEAP Connect assessments in ELA and mathematics for high school were first administered in the 2018–2019 school year.

The LAA1 science assessments were still used in 2017–2018 while the state worked with its vendor on the development of a new LEAP Connect science assessment aligned to the LCs in science. The science assessments were first administered in the 2019–2020 school year as census field tests. The first operational administration took place in spring of 2021. The LEAP Connect science assessments assess students in grades 4, 8, and high school. These are the same grades assessed by their predecessor, the LAA1 science assessments.

### **Statement of Core Beliefs and Guiding Philosophy**

Louisiana believes that all students, including those with the most significant cognitive disabilities, deserve an education that prepares them to be independent and successful in life after high school. This is accomplished through high-quality instruction and assessment that is aligned to the state’s academic standards. The system of standards, instruction, and assessment for this student population in Louisiana is meant to provide access to grade-level content and skills, helping students to build knowledge of the world, access meaningful texts, express ideas, and solve complex problems. Louisiana believes that teachers of students with significant cognitive disabilities should provide inclusion opportunities whenever possible and play a key role in helping students access grade-level academic content and skills. Like the standards, instruction, and assessment for the general student population, Louisiana firmly believes that the educational system for students with significant cognitive disabilities should promote high academic expectations. The LEAP Connect Assessment System is a key aspect of this. The assessments ensure that these students are provided a combination of opportunities to demonstrate their knowledge and skills in academics.

## **Purpose of the LEAP Connect Assessment System**

The purpose of the LEAP Connect Assessment System is to allow educators and parents to track student progress toward college, career, and community readiness, measure students' academic achievement, yield defensible scores that can be used for school accountability decisions and program evaluation, and provide reports that promote appropriate interpretation and use of data in support of enhancing practices to improve student achievement.

Federal law requires states to administer annual assessments to all students, including students with significant cognitive disabilities, to measure progress towards challenging academic content standards. The LEAP Connect assessments in ELA, mathematics, and science fulfill this requirement, in accordance with Sections 1111(b)(1)(E) and 8401 of the Elementary and Secondary Education Act of 1965. The LEAP Connect is designed for students with significant cognitive disabilities who cannot participate in the LEAP 2025 assessment, even with accommodations.

Louisiana's *Bulletin 111* §3901 states that all students, including those with disabilities, shall participate in Louisiana's testing program. It mandates that the scores of students who are eligible to take the LEAP Connect assessments shall be included in the calculation of the school performance scores (SPS), and that these students are to be included in accountability calculations at the grade level in which they are enrolled in the student information system (SIS). To be eligible to participate in the LEAP Connect assessments, an IEP team must verify that the student has a disability which significantly impacts cognitive functioning and meets the criteria outlined in *Bulletin 1530* §505.

*Bulletin 111* §703 states that students who participate in the LEAP Connect shall be included in the graduation rate for the year in which they graduated, or the year in which they exited after at least four years in high school with no subsequent reenrollment by October 1 of the following academic year. According to Louisiana's Act 833, students with disabilities may follow alternative pathways for grade promotion and graduation. Louisiana students who participate in the alternate assessments may earn a Jump Start Career Diploma when the graduation requirements are met, and in the rare case that a student participating in the alternate assessments does not meet the graduation requirements for a high school diploma, the student may still pursue a Certificate of Achievement. Decisions about graduation pathways for this student population are made individually with counseling and guidance, considering the student's interests, capabilities, and ambitions.

The purposes of the LEAP Connect assessment scores are to gauge student progress in relation to grade-level academic standards, to inform school accountability decisions, and to help educators improve their teaching practices year to year to raise student achievement. These scores are *not* meant to be diagnostic in nature and are not used to alter instruction in real time. Rather, they provide an end-of-year snapshot that stakeholders at the state, district, school, and classroom levels can use to make informed decisions for the following school year. The LEAP Connect assessments are designed to yield results that support these intended interpretations and uses of the assessments.

## Chapter III. Validity Evaluation Framework

This chapter reviews the validity evidence and evaluation framework for the LEAP Connect assessments.

### Background of NCSC-developed ToA and IA for ELA and Mathematics

The LEAP Connect assessments in ELA and mathematics draw from the work completed by the National Center and State Collaborative (NCSC) alternate assessment consortium. NCSC's theory of action (ToA) and interpretive argument (IA) center around the belief that assessments for students with significant cognitive disabilities should support the same goal as general assessments: to help ensure that students leave high school ready to meaningfully participate in college, careers, and their communities (see NCSC Brief Number 9).

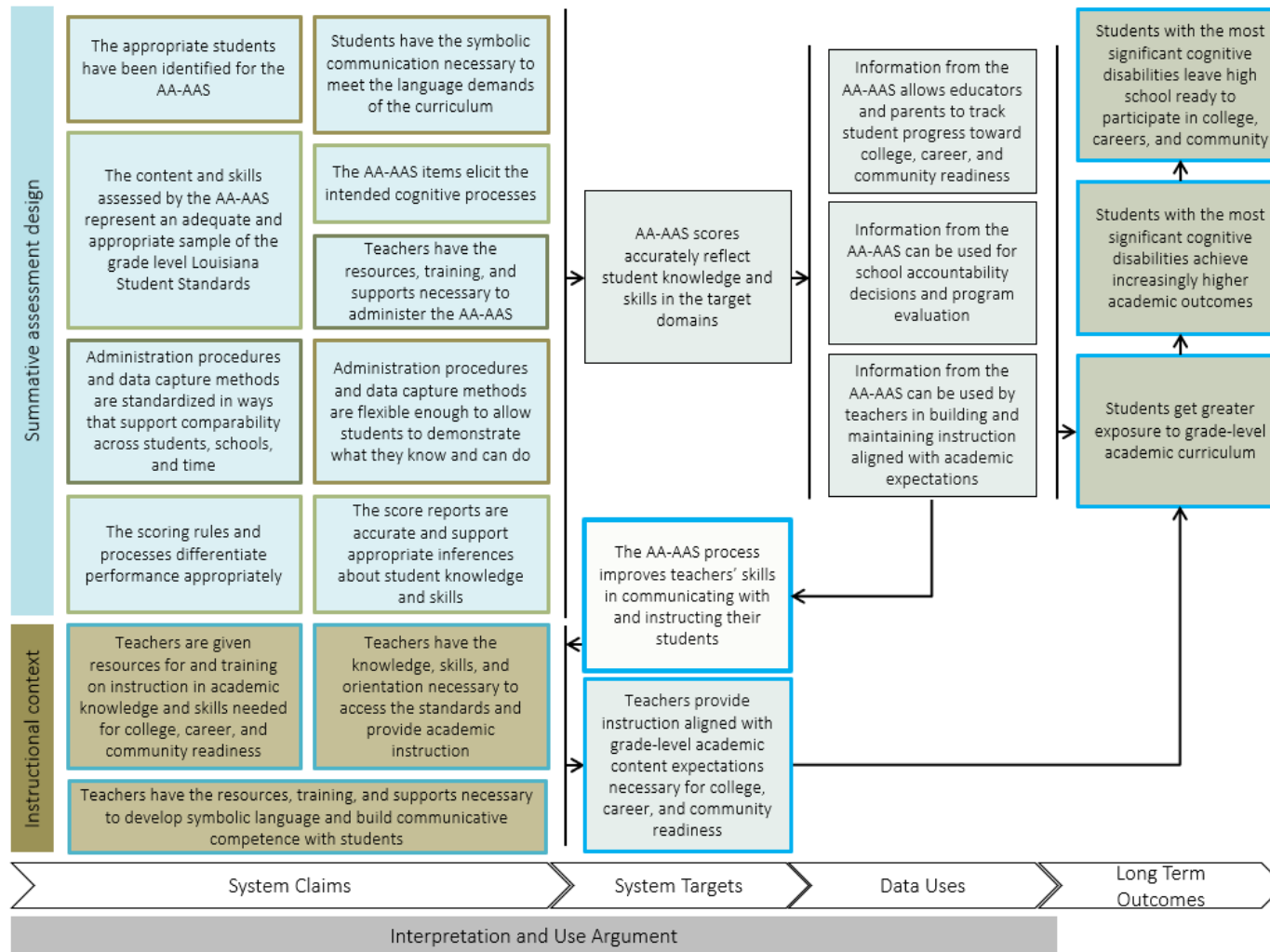
The NCSC ToA articulates and connects the goal of the alternate assessments with multiple chains of inferences that lead to that goal. The NCSC ToA was developed using the principles of backward design, meaning that the goal of the assessment system was articulated first, and the NCSC team then worked "backward" by mapping out the assumptions and inferences that lead to that goal.

The ToA for the NCSC system is displayed on the next page (see Exhibit 2). The long-term intended outcomes of the NCSC system are shown in the rightmost column and include: 1) students get greater exposure to grade-level academic curriculum, 2) students with significant cognitive disabilities achieve increasingly higher academic outcomes, and 3) students with significant cognitive disabilities leave high school ready to participate in college, careers, and community.

To support these long-term outcomes, the NCSC assessment scores must yield information that: 1) allows educators and parents to track student progress toward college, career, and community readiness, 2) can be used for school accountability decisions and program evaluation, and 3) can be used by teachers in building and maintaining instruction aligned with academic expectations. These uses of assessment data articulated through the NCSC project align with the LEAP Connect assessment system purposes outlined in Chapter II: to allow educators and parents to track student progress toward college, career, and community readiness; measure students' academic achievement; yield defensible scores that can be used for school accountability decisions and program evaluation; and provide reports that promote appropriate interpretation and use of data in support of enhancing practices to improve student achievement.

The NCSC ToA also highlights the need for system coherence. It demonstrates the assessments' role in a larger system that also includes curriculum, instruction, and professional development. The same expectations for student learning and achievement should undergird each of these components, and they should all work together toward a common set of long-term goals.

**Exhibit 2. Theory of Action for the NCSC System, Adapted for the LEAP Connect System<sup>1</sup>**



<sup>1</sup> Adapted with permission from Forte, E., Quenemoen, R. F., & Thurlow, M. L. (2016, January). *NCSC's theory of action and validity evaluation approach* (NCSC Brief #9). Minneapolis, MN: University of Minnesota, National Center and State Collaborative. The Alternate Assessment based on Alternate Achievement Standards (AA-AAS) is the LEAP Connect system in Louisiana.

The NCSC ToA includes an interpretive argument and validity argument. These both support an argument-based approach to validity evaluation. The interpretive argument articulates the claims that stakeholders make about assessment scores and the underlying assumptions and inferences that support those claims. It also clarifies the intended uses of the scores. The interpretive argument guides the evidence collection process for validity evaluation (further described below). The validity argument is built on the interpretive argument and summarizes the evidence available that supports the desired interpretations and uses of assessment scores.

Louisiana, having been one of the NCSC partner states, has adopted the ToA components described above for use with the LEAP Connect system. This ToA informs the LEAP Connect assessment system's design, development, administration, scoring, and reporting, and guides the validity evaluation of the LEAP Connect system (further described in the Validity Evaluation section below).

### *Science*

The NCSC assessments and resources were developed for ELA and mathematics. However, the same principles used in articulating the NCSC ToA and IA were also applied to the LEAP Connect science assessments. The same intended long-term outcomes and data uses apply. Like the ELA and mathematics assessments, the LEAP Connect science assessments are meant to support practices that improve student achievement, assist with accountability decisions, and allow tracking of student progress toward college, career, and community readiness.

However, there are features of the LEAP Connect science assessments and the Louisiana Connectors for science that are distinct from ELA and mathematics. The Louisiana Connectors for science are three-dimensional in nature and are intended to measure student progress in 1) science and engineering practices, 2) disciplinary core ideas, and 3) crosscutting concepts. These dimensions, which are articulated in the Louisiana State Science Standards, are meant to be taught and assessed in an integrated manner.

The three-dimensional cross-disciplinary nature of the Louisiana Connectors for science impacts the conceptualization of the ToA and IA. Valid uses and interpretations of the LEAP Connect science assessment scores must align with what the assessments were designed to measure. The LEAP Connect science assessments are meant to provide students opportunities to demonstrate their understanding of science and the ability to:

- Apply content knowledge to real world phenomena and to design solutions;
- Demonstrate the practices of scientists and engineers;
- Connect scientific learning to all disciplines of science; and
- Express ideas grounded in scientific evidence.

### **Validity Evaluation**

Validity evaluation is the judgment of a body of evidence related to the interpretation and use of assessment scores (AERA, APA, & NCME, 2014). The body of evidence that is evaluated in this process can take many forms. It encompasses both processes and outcomes and should extend from the initial conceptualization of the assessments all the way through implementation and reporting. Validity evidence may include documentation of the conceptual design of the assessments, item and test development processes, test administration, scoring, psychometric analysis of student responses, and score reporting.



The *Standards for Educational and Psychological Testing (the Standards; AERA, APA, & NCME, 2014)* confirms that validity evidence should come from several different sources. Specifically, they articulate five types of evidence:

1. Content: Evidence that the assessments encompass the intended content domain.
2. Cognitive processes: Evidence that the assessment items and tasks elicit the intended cognitive processes from students.
3. Internal structure: Evidence that assessment scores relate to each other in the expected ways, corresponding to the relationships among aspects of the content domain.
4. External relationships: Evidence that the patterns of relationships between assessment scores and outside criteria correspond to the expected patterns.
5. Consequences: Evidence that decisions and actions based on scores correspond to intended decisions and actions.

There are four questions (developed through the NCSC project; see NCSC Brief #9) for evaluating these five types of evidence:

1. Content coherence: To what extent have the assessments and their operational system been designed to yield scores that reflect students' knowledge and skills in relation to the academic expectations defined in the standards?
2. Comparability: To what extent does the assessment system operate as intended (e.g., administration, scoring, analyses, reporting) so that scores may be compared across students, sites, and time?
3. Accessibility and fairness: To what extent do students take the assessments under conditions that allow them to demonstrate what they know and can do in relation to the academic expectations defined in the standards?
4. Consequences: To what extent do the processes and outcomes of the assessments contribute to improvements in teachers' capacity to provide academic instruction and to select and use appropriate communications strategies?

In using validity evidence to answer these questions, a solid rationale should emerge that links the evidence to the intended uses and interpretations of assessment scores. Further, the intended uses and interpretations of scores should be directly linked back to the assessment's purpose. An assessment's purpose is linked to its design; different types of assessment exist for different purposes. For example, summative assessments provide an end-of-year snapshot of student learning. They provide big-picture data that can help ensure that future instruction is aligned with academic expectations, support accountability, and help educators and parents track student progress. Formative assessments, on the other hand, provide ongoing feedback to inform instruction in real time. They provide finer-grain-sized data that teachers can use to make smaller-scale instructional decisions. Valid uses and interpretations of assessment scores depend on the design of the assessment and the purpose of that design.

The LEAP Connect assessments are summative. Therefore, valid uses and interpretations should align with the purpose of summative assessments. As described above, the LEAP Connect assessment system purposes do align with the purpose of summative assessments: to allow educators and parents to track student progress toward college, career, and community readiness, measure students' academic achievement, yield defensible scores that can be used for school accountability decisions and program

evaluation, and provide reports that promote appropriate interpretation and use of data in support of enhancing practices to improve student achievement.

### **Summary of Validity Evaluation Results**

An overview of the validity evidence for the LEAP Connect assessment system is described below. Evidence is organized by the four NCSC validity evaluation questions listed in the above section.

#### *Content Coherence*

*To what extent has the assessment and its operational system been designed to yield scores that reflect students' knowledge and skills in relation to the academic expectations defined in the standards?*

As described in Chapter VII. Test Development, the LEAP Connect items are reviewed for their alignment to the Louisiana Connectors (which are derived from the Louisiana Student Standards) as part of the development process. In addition, an independent alignment evaluation of the LEAP Connect assessments was conducted during the 2020–2021 school year. This evaluation followed criteria set forth in the Links for Academic Learning (LAL) alignment evaluation methodology developed for alternate assessments (Flowers, Wakeman, Browder, & Karvonen, 2007). The basic premises of the LAL methodology include the following expectations for alternate assessments (adapted from Flowers et al., 2007):

- The assessments must be linked to grade-level academic content standards.
- The target for achievement must be academic content (e.g., reading, mathematics, science) that is referenced to the student's assigned grade based on chronological age.
- Functional activities and materials may be used to promote understanding, but the target skills for student achievement are academically focused.
- Some prioritization of the content will occur in setting these academic expectations but it should reflect the major domains of the curricular area (e.g., strands of math) and have fidelity with this content and how it is typically taught in general education.
- The alternate expectation for achievement may focus on prerequisite skills or some partial attainment of the grade level content standards, but students should still have the opportunity to meet high academic and performance expectations, to demonstrate a range of depth of knowledge, to achieve within their symbolic communication level, and to show growth across grade levels or grade bands.

The results of this alignment evaluation were used to inform item development activities for 2022-23 and is included in the LEAP Connect technical documentation (see Section Passage and Item Development in Chapter VII; Appendix A).

Finally, item-total correlation has been calculated as part of the performance data review of all LEAP Connect items. This calculation reveals the extent to which an individual assessment item relates to the overall assessment score. In other words, it shows whether students who performed well overall on the assessment also performed well on the item in question. Item-total correlation is helpful in determining whether individual items are measuring the intended construct. Item-total correlation data are included in Appendix B. These results indicate strong evidence of construct coherence for the LEAP Connect assessments.

### *Comparability*

*To what extent does the assessment system operate as intended (e.g., administration, scoring, analyses, reporting) so that scores may be compared across students, sites, and time?*

The administration, scoring, analysis, and reporting procedures for the LEAP Connect assessments have been documented and disseminated to educators and administrators across the state to ensure that assessment procedures are implemented as intended. The online platform for the LEAP Connect assessments reinforces these standardized procedures and guides educators, administrators, and other stakeholders through each aspect of the assessment process. The standardized procedures reinforced by the system and the uniformity of reports across schools and districts allows scores to be compared across students, sites, and time.

### *Accessibility and Fairness*

*To what extent do students take the assessment under conditions that allow them to demonstrate what they know and can do in relation to the academic expectations defined in the standards?*

As described in Chapter VII. Test Development, the LEAP Connect items were developed using Universal Design (UD) and principled design to ensure that items are fair, accessible, and measure construct-relevant content, and items undergo accessibility and fairness reviews as part of the development process. In addition, the Test Administration Manual (TAM) and the LEAP Connect Assessment Guides provide instructions to educators to ensure that they follow the established protocol for administration, including that the assessments are administered in the proper setting (i.e., one-to-one). Educators must demonstrate proficiency in their test administration training to serve as test administrators.

Using a principled design approach, the LEAP Connect minimizes accessibility challenges by taking into consideration test characteristics, such as the choice of content and topics, response processes, and administration procedures (e.g., read aloud) that may impede test takers' access to the construct. To support flexible assessment design and delivery, policies for accessibility and item features are employed that provide opportunities for all students to show what they know and can do, while incorporating other important aspects of item design such as depth of knowledge, text complexity, and degree and type of scaffolds and supports. The assessments include the following accessibility features for all students who take the test:

- The entire test can be read aloud to students.
- Students may respond to items based on their preferred mode of communication (e.g., eye gaze, assistive technology, point to a picture, etc.).
- Items include pictures and graphics to support what is read to students. Nearly all the mathematics items contain visual stimuli to assist students in determining an answer.
- Items indicate when students may use calculators. Any student with an IEP accommodation for calculator use may use their specified calculator for every item. While an online calculator is provided, students may use the handheld calculator they typically use during instruction on the mathematics test.
- The Next and Back buttons allow students to move from question to question.
- The Flag button can be used to mark any question to which students may wish to return, and the Review/End Test button allows them to review their answers.

The guides also provide a description of additional online accessibility tools available through the platform, which include a pointer tool, highlight tool, cross-off tool, sticky note tool, magnifying tool, line guide, calculator, and help tool. The guides also recommend that students and teachers practice with the system to become familiar with these tools prior to the assessment.

Another tool that can support accessibility and fairness is differential item functioning (DIF). DIF ensures that assessments are fairly measuring the performance of all populations of students (e.g., all school districts, genders, races, free and reduced lunch categories, etc.). DIF was used in the development of the NCSC items and the results of these analyses are documented in NCSC's 2015 Operational Assessment Technical Manual. The majority of NCSC items were shown to perform similarly across all demographic groups. DIF calculations were conducted in 2021 to ensure that the LEAP Connect assessment items are fairly measuring all groups of students who participate in the assessments. The DIF results can be found in Chapter XIV).

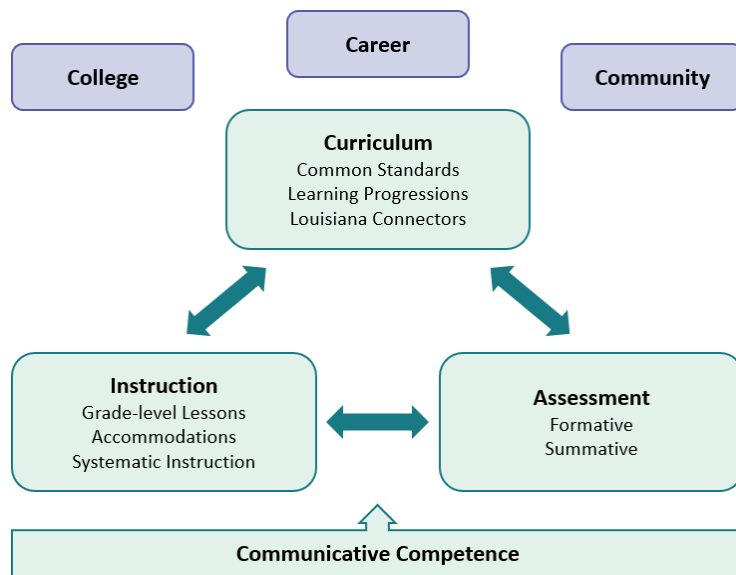
### *Consequences*

*To what extent do the process and outcomes of the assessments contribute to improvements in teachers' capacity to provide academic instruction and to select and use appropriate communications strategies?*

Assessment is the mechanism by which evidence of students' knowledge, skills, and abilities is obtained. The design of the assessments must be in the service of promoting student learning as part of a larger curriculum, instruction, and assessment system (see Exhibit 3). There must be cohesion between the desired learning outcomes (the grade- and content-specific LCs) and this system. All the components of this system and how they interrelate must be considered together. Thus, designing an assessment is a process in which every decision should be considered in light of each of these three components.

The LEAP Connect assessments are designed to be part of this broader system of curriculum, instruction, and assessments. The system is built on a foundation that recognizes the importance of first providing students an opportunity to learn the assessed academic content and considering the students' communicative competence. The system is also reliant on educators having the training, materials, and resources required to implement effective instruction aligned to the LCs to achieve the intended outcomes of the system – that students with significant cognitive disabilities are prepared for community, college, and career following their K-12 educational experience.

### Exhibit 3. LEAP Connect Alternate Assessment System<sup>2</sup>



To support the full implementation of the LEAP Connect assessment system, the LDOE recognizes the necessity of providing training and professional development opportunities in addition to materials and resources. As part of the transition to the Louisiana Connectors and the LEAP Connect assessments, the LDOE developed resources to support standards-based instruction for students with significant disabilities. These include:

- Louisiana Connectors Crosswalks with Louisiana Student Standards
- Louisiana Connectors Essential Elements Cards
- Student Response Modes
- Lesson Plan Adaptation
- Case Studies for Exemplary Instruction

In addition, as described in the LEAP Connect Assessment Guides, the assessment system allows educators to observe and gauge a student’s mode of response via the Student Response Check (SRC), which is a set of three content-neutral items administered prior to testing. The purpose of the SRC is to assist educators in determining whether students are able to respond using their preferred mode of communication and to ensure that the educator can clearly identify the students’ responses.

During the 2019–2020 school year, edCount researchers collaborated with the LDOE to create drafts of *Companion Resources for the ELA Guidebooks for Students with Significant Cognitive Disabilities* (found in the [Students with Significant Cognitive Disabilities resource library](#)). These companion resources were developed for grades 3–8 by modifying the content of the *ELA Guidebook Units* that were previously developed by Louisiana teachers in partnership with the LDOE to support ELA instruction for general and special education students with diverse learning needs by providing classroom-ready daily ELA lessons. It was the goal of the LDOE to implement a well-defined teaching

<sup>2</sup> NCSC. (2016, March). *National Center and State Collaborative 2015 Operational Assessment Technical Manual*. Minneapolis, MN: University of Minnesota, National Center and State Collaborative.

and learning strategy for all students to include Students with Significant Cognitive Disabilities (SWSCDs) while maintaining high expectations of their learning (i.e., building their knowledge of the world; reading meaningful texts; expressing their unique ideas through writing and speaking; and solving complex problems).

The purpose of the *Companion Resources* was to facilitate access to and opportunity for educators to teach SWSCDs a high-quality ELA curriculum, improve professional learning between content specialists and experts in special education, and increase options for students with the most complex needs to participate in an inclusive, least restrictive environment. The LDOE understood that shifts in teacher pedagogy and practice and expectations of learning and achievement for SWSCDs and ongoing development of resources and making available professional development opportunities were necessary to achieve the goals of the project defined as:

- Provide a high-quality curriculum for students with significant cognitive disabilities using adapted authentic, grade-level texts and integration of reading, writing, speaking, listening, and language standards (i.e., LCs) through the provision of supports and scaffolds based on research and evidence-based practices (i.e., Universal Design for Learning);
- Increase the likelihood of their inclusion in general education settings;
- Improve professional learning between content area specialists and expert teachers of special education students; and
- Advance the LDOE’s vision that all students, including those with significant cognitive disabilities, deserve an education that prepares them to be independent and successful in life after high school.

edCount researchers worked closely with the LDOE in an iterative, year-long process that included: 1) the establishment of a shared understanding of the goals and outcomes of the work including expectations for the Teacher Leader Associates (TLAs) who drafted the *Companion Guides*; 2) development of training and professional development materials; 3) development and provision of exemplars of modifications for instruction (i.e., academic lessons, guidance on the purpose, use, and development of adapted texts); and 4) employment of a detailed review process based on guidelines, templates, and checklists made available to the TLAs to inform unit revisions and receive subsequent feedback to create final drafts of the units.

The ELA guidebooks were developed with these shifts in mind to incorporate text complexity through rich, authentic texts. They incorporate evidence through questions and assessments that are text-dependent. Finally, the ELA guidebooks build knowledge through text sets that center around a topic or theme and help students build knowledge throughout the unit.

### *Summary*

The evidence outlined above demonstrates the LDOE’s commitment to ensuring that the interpretations and uses of LEAP Connect assessment scores are valid in terms of content coherence, comparability, accessibility and fairness, and consequences. Upcoming alignment evaluations and item-total correlation calculations will ensure that the LEAP Connect assessments are yielding scores that reflect students’ knowledge and skills in relation to the academic expectations outlined in the standards (i.e., content coherence). Documented administration, scoring, analysis, and reporting procedures, which are reinforced through the online assessment system, ensure that LEAP Connect scores may be compared across students, sites, and time (i.e., comparability). The LEAP Connect assessment system’s accessibility

features and documentation for test administrators on using these features, along with future DIF calculations, ensures that students participate in the assessments under conditions that allow them to demonstrate what they know and can do (i.e., accessibility and fairness). Finally, tools and resources designed for educators (e.g., Student Response Modes document, Lesson Plan Adaption document, curricular guidebooks, etc.) ensure that the LEAP Connect assessment system supports teacher capacity to provide quality instruction and to use appropriate communication strategies with students (i.e., consequences).

## Chapter IV. The Population of Students

### Description of the Student Population

The LEAP Connect assessment system is designed for students with significant cognitive disabilities for whom participation in the general assessments would not be appropriate, even with accommodations. The Louisiana students who participate in the LEAP Connect must meet the following criteria:

1. The student has a disability that significantly impacts cognitive function and/or adaptive behavior.
2. The student requires extensive modified instruction aligned with the Louisiana Connectors to acquire, maintain, and generalize skills.
3. The decision to include the student in the alternate assessments is not solely based on certain factors (placement, behavior, English Learner status, etc.).

It is important to gather information about Louisiana students who meet the above criteria and participate in the LEAP Connect assessments. Understanding the characteristics of this population is a vital aspect of maintaining an effective system of instruction and assessment and ensuring the system is serving the appropriate population. For example, data about the student population participating in the LEAP Connect assessments could help inform the design and development of instruction and assessment, shape teacher professional development and training, and ensure that the alternate assessment participation criteria are being applied with fidelity. In addition, if students taking the assessment do not meet the appropriate criteria, stakeholders may question the validity of the interpretation and uses of the scores.

### *LEAP Connect 2021 End of Test Survey*

The End of Test Survey (EOTS) helps the LDOE gather information about the students who participate in the LEAP Connect assessments. The LEAP Connect EOTS is designed to gather useful feedback from test administrators after they have finished administering the LEAP Connect assessments. LDOE developed a series of open- and closed-ended questions for TAs following the LEAP Connect grade 4, 8, and high school science assessments in spring of 2021. The EOTS consists of open- and closed-ended questions about the student test experience, pre-assessment and test administration experiences, student characteristics, and student instruction. The results summarized below are from the 2021 EOTS administration.

### Student Characteristics

Findings from the LCI indicate the majority of student received services via IDEA disability category of intellectual disability (54%), and 24% of students received services via the IDEA disability category of autism. TAs were also asked to select any additional (non-primary) identified disabilities for which students received school-based special education services. The most common responses included intellectual disability (44%) and speech/language impairment (27%). Regarding student expressive communication, the majority of TAs (69%) reported their student used symbolic language to communicate, while a smaller percentage (22%) reported their student used intentional communication, but not at a symbolic level. Over half of the TAs (57%) indicated their student's receptive communication reflected that the student "independently follows 1–2 step directions presented through words and does not need additional cues," and approximately one-third (33%) indicated their student "required additional cues to follow 1–2 step directions. Over three-quarters of respondents (76%) indicated their student had vision within normal limits, and almost all respondents (94%) indicated their student had



hearing within normal limits. Approximately 11% of TAs reported their student used an augmentative communication system in addition to or in place of oral speech.

### **Student Test Experience**

Across all content areas, TAs indicated students typically took between 31 and 60 minutes to complete the assessment. Most administrators (between 63% and 72% across content areas) found their student to be actively engaged with the test items. Regarding the difficulty of assessments, most administrators reported that students found the test items “difficult” or “very difficult,” ranging from 46% for the reading assessment to 66% for the mathematics assessment. Approximately 26% (mathematics), 43% (reading), 31% (writing), and 34% (science) reported that students found the difficulty of the test items to be “just right.”

TAs also reported the primary way that students interacted with test item text. The most common responses were listening to the TTS read (38%), listening to the TTS read with TA repetition or redirection (31%), and listening to the TA read (21%). Across grades, 67% of administrators reported that they used the TTS to read items aloud for students to access the items. Large percentages of administrators also indicated students used calculators (65%), a “click-to-enlarge graphic” feature within the assessment platform (40%), and image files associated with the reference materials (36%). Approximately 7% of TAs reported that they did not need to use assistive technology for students to access the items. When asked about barriers for students in accessing the assessment items, the majority of respondents (72%) indicated there were no barriers, and a smaller percentage (17%) reported that the student not having the necessary communication skills provided a barrier to access. Students’ most common primary mode of response to LEAP Connect assessment items was the independent use of a keyboard or mouse (53%). Test administrators also indicated students provided a verbal response (21%) and used a touch screen, gesture, or point (18%) as their primary response mode.

### **Pre-Assessment and Test Administration Experiences**

The majority of TAs had accessed (77%), reviewed (78%), and used available LEAP Connect practice tests with their student (67%) prior to test administration. Likewise, the majority of TAs (83%) had practiced using the computer-based assessment system at least once prior to test administration, with 45% reporting having practiced two or more times. Administrators also reported the number of times their student practiced using the computer-based assessment system prior to test administration, with 70% indicating their student practiced using it at least once. In reporting the materials used to assist them in administering the test items to their student, most of the test administrators indicated using the Test Administration Manual (88%), the Directions for Test Administration (84%), and the Reference Materials (76%).

When asked about computer usage, the majority of administrators (71%) indicated that their student used a computer for daily instruction three or more times per week. In regard to computer use, 32% of test administrators indicated students used computers for assessment four times a month or less, 31% reported computer use for daily assessment three or more times per week, and 23% reported computer use for assessment twice per week.

### **Student Instruction**

When asked about their student’s primary classroom setting across all content areas, the majority of TAs (73%) indicated their student was inside regular class for less than 40% of the day, primarily spending

time in self-contained special classrooms with part-time instruction provided in a regular class or a self-contained special classroom with full-time special education instruction on a regular school campus. Across all content areas, most respondents (between 66% and 76%) agreed that their student was actively engaged in instruction based on the content of items included on the LEAP Connect assessments.

The EOTS also asked test administrators about the focus placed on specific topics in student instruction over the past year in mathematics, reading, writing, and science. For each topic, respondents indicated whether topics had received considerable focus (7+ times taught), moderate focus (4–6 times), limited focus (1–3 times), they were not taught, or they were not applicable. For mathematics, the largest percentage of TAs indicated *The Number System* received considerable focus (54%), *Expressions & Equations* received moderate focus (31%), and *Geometry* (34%), *Functions* (33%), and *Statistics & Probability* (30%) each received limited focus. For reading, the largest percentage of respondents reported considerable focus on *Foundational Skills* (55%), *Vocabulary* (51%), *Literature* (46%), and *Informational Texts* (39%). For writing, the largest percentage of TAs reported considerable focus on *English Language Conventions* (41%) and limited focus on *Explanatory Writing* (32%), *Narrative-Fiction Writing* (34%), and *Argument/Opinion Writing* (36%). Lastly, for science, the largest percentage of respondents indicated moderate focus on the topic of *Earth & Space Science* (36%) and limited focus on *Physical Science* (37%) and *Life Science* (36%).

### **Participation in the LEAP Connect Assessments**

An important part of making valid interpretations about students' scores is ensuring that the students participating in the assessments are the students for whom the assessments were designed. As described above, the LEAP Connect is intended for students who have disabilities that significantly impact cognitive function and/or adaptive behavior, require extensive modified instruction aligned with the Louisiana Connectors, and whose participation in the alternate assessments is not due solely to factors such as placement, behavior, or English Learner status.

The 2021 EOTS results support the state to reliably describe the student population participating in the LEAP Connect assessments by gathering information about student characteristics such as primary disability category, expressive and receptive communication abilities, vision and hearing abilities, and the use of an augmentative communication system (i.e., whether students use an augmentative communication in addition to or in place of oral speech). This information provides the LDOE with more robust evidence to support the inclusion of the appropriate students in the LEAP Connect assessments and it can help the LDOE determine the extent to which participation criteria are being adhered to. For example, if a large number of students are described as having disabilities that do not typically reflect significant cognitive disability (e.g., speech-language impairment), the LDOE can investigate and potentially intervene with professional development and training for educators on how to properly apply the participation criteria for the LEAP Connect. The EOTS data and Learner Characteristics Inventory (LCI) data are triangulated with other data such as assessment scores to help the LDOE continue to bolster and refine their alternate assessment system over time.

Gathering information about the students who participate in the LEAP Connect will also help Louisiana work toward meeting section 1111(b)(2)(D)(i)(I) of the Elementary and Secondary Education Act of 1965 (ESEA), as amended by the Every Student Succeeds Act (ESSA), which states that no more than 1% of a state's total student population may participate in the alternate assessments. Louisiana has exceeded this cap in the past few years in ELA and mathematics. The state has not exceeded the 1% cap in science.

The LDOE was granted a waiver for the 2017-18 and 2018-19 school years. However, the waiver for the 2019–2020 school year was denied.

As part of the effort to meet the 1% cap requirement, the LDOE has required each local education agency (LEA) that exceeds the 1% cap to:

- Provide written justification describing the specific reason(s) the percentage of students taking the alternate assessments exceeds 1%;
- Provide written assurance that the LEA followed the state’s guidelines for participation in the alternate assessments; and
- Provide written assurance that the LEA would address any disproportionality in the percentage of students in any subgroup taking an alternate assessment.

In addition, the LDOE revised the alternate assessment eligibility criteria and deployed accountability and transparency enhancements to the statewide IEP system. The LDOE has provided additional resources and support to LEAs and educators to assist with implementing these changes, including but not limited to:

- Training and support to LEAs to clarify the revised eligibility criteria;
- A new webpage dedicated to students with significant cognitive disabilities;
- A resource library for students with significant cognitive disabilities;
- Individualized support for LEAs whose student-level files indicated that IEP team decisions were not consistent with state participation criteria.

Louisiana will continue to implement the reforms outlined in their 2019 waiver application to the US Department of Education and will gather data to inform additional strategies that can help LEAs meet the 1% cap requirement.

In November of 2020, the LDOE submitted a request to the Office of Elementary and Secondary Education requesting a waiver of the 1% cap as in subsequent years. The waiver was granted with the following provisions:

As part of this waiver, LDOE assured that it:

- Will meet all other requirements of section 1111 of the ESEA and implementing regulations with respect to all State-determined academic standards and assessments, including reporting student achievement and school performance, disaggregated by subgroups, to parents and the public.
- Assessed at least 95 percent of all students and 95 percent of students with disabilities who are enrolled in grades for which an assessment is required in 2018-19, the most recent year for which data are available.
- Will require that a local educational agency (LEA) submit information justifying the need of the LEA to assess more than 1.0 percent of its assessed students in any such subject with an AA-AAAS.
- Will provide appropriate oversight of an LEA that is required to submit such information to the State, and it will make such information publicly available.

- Will verify that each LEA that is required to submit such information to the State is following all State guidelines in 34 CFR § 200.6(d) (with the exception of incorporating principles of universal design) and will address any subgroup disproportionality in the percentage of students taking an AA-AAAS.
- Will implement, consistent with the plan submitted in LDOE’s waiver request, system improvements and will monitor future administrations of the AA-AAAS to avoid exceeding the 1.0 percent threshold.

The LDOE will continue to implement improvement and monitoring strategies to help LEAs meet the 1% cap requirement.

The participation rates for the 2017–2018, 2018–2019, 2019–2020, and 2020–2021 school years are outlined below (see Exhibit 4). The first column (labeled column 1) in each year represents the percentage of students with significant cognitive disabilities participating in the LEAP Connect out of all students eligible to participate in this assessment. The second column (labeled column 2) in each year represents the percentage of students with significant cognitive disabilities assessed via the LEAP Connect out of the entire Louisiana student population.

**Exhibit 4. Alternate Assessment Participation Rates**

Content Area	2017–2018		2018–2019		2019–2020		2020–2021	
	1	2	1	2	1	2	1	2
<b>ELA</b>	99.0	1.3	98.8	1.6	98.4	1.5	92.5	1.4
<b>Math</b>	98.8	1.3	98.7	1.6	98.3	1.5	92.2	1.4
<b>Science<sup>3</sup></b>	98.9	0.7	97.8	0.7	100	0.7	89.9	0.7

<sup>3</sup> Reflects LAA1 Science participation in 2017-2018 and 2018-2019, the LEAP Connect census field test participation in 2019-2020, and the LEAP Connect Assessment in Science in 2020-2021.

## Chapter V. Content of the Exams

The LEAP Connect assessments measure student proficiency and achievement in ELA and mathematics in grades 3–8 and high school, and in science in grades 4, 8, and high school. This chapter will provide an overview of the claims that guide the LEAP Connect system, the Louisiana Connectors and their connection to the Louisiana Student Standards, the development of the content claims, the iterative process of reviewing and adopting the claims, and finally, the claims themselves.

### Claims Guiding the System

One of the first steps in a principled approach to assessment development is defining the assessment claims for the system. The claims identify what constitutes student proficiency and they describe what educators and other stakeholders want to know and say about what students know and can do in a particular content domain.

Claims subsume standards and define the specific performances that represent the knowledge and skills within the standards that test scores are meant to reflect. While the standards define what students are expected to know and achieve, the claims indicate what would constitute observable evidence that students have acquired that knowledge and skills. The difference between claims and the body of standards is that claim statements are intended to:

- Identify grade-level proficiency;
- Show how knowledge and skills are built over time; and
- Indicate the kinds of situations—the items—that would give students the optimal opportunity to produce the desired evidence.

When developing claims, it is important to consider the critical aspects of the discipline, as well as the nature of the scores that will be produced by the assessment that, in turn, provide evidence to support the claims made about student performance. In addition, claims should be articulated with the student population in mind. They should consider the learner characteristics of students who participate in the LEAP Connect assessments and reflect the high academic expectations that Louisiana has established for these students.

These content-specific claims connect to the LEAP Connect Theory of Action (ToA) and interpretive argument (IA). As described in Chapter III, the ToA and IA define the broad claims that stakeholders make about assessment scores and the underlying assumptions and inferences that support those claims. Thus, the assessment claims are a critical component underpinning the entire assessment system. They guide the selection of prioritized Louisiana Connectors (LCs) to be assessed and the development of measurement targets, which in turn guide the development of items. The articulation of the assessment claims, along with the prioritized LCs and measurement targets, help to ensure that the assessment supports instruction of grade-specific skills and concepts and higher expectations for students with significant cognitive disabilities.

### Connection to Grade-level Standards

The LEAP Connect system assesses student proficiency in terms of the LCs, which are fully aligned to the Louisiana Student Standards (LSS) for ELA, mathematics, and science. Each assessment provides age and grade appropriate content for all grades and courses while maintaining high expectations for all students, capturing the “big ideas” found in the LSS.

The LCs can be utilized for assessment purposes in that they reflect the necessary knowledge and skills that students with the most significant cognitive disabilities need to reach critical learning targets or big ideas within the standards from grade band to grade band, leading to knowledge of ELA, mathematics, and science for college, career, and community readiness by the end of high school.

The LCs are designed to provide fully aligned pathways for students with significant disabilities to work toward the LSS. The LCs identify the:

- Most salient grade-level, core academic content found in the LSS;
- Necessary knowledge and skills needed to reach grade-level expectations of the LSS;
- Core content, knowledge, and skills needed at each grade to promote success at the next; and
- Priorities in each content area to guide the instruction for students in this population.

### *ELA and Mathematics LCs*

The LCs for ELA and mathematics are aligned to the *Louisiana Student Standards for ELA* and the *Louisiana Student Standards for Mathematics*, adopted in spring of 2016. The LCs break each ELA and mathematics standard down into key concepts and skills to be taught and assessed. They are arranged by grade levels for kindergarten through grade 8 and by content areas for high school. Examples from mathematics and ELA are shown in Exhibit 5.

**Exhibit 5. Example Grade 8 Mathematics and Grade 3 English Language Arts LCs**

Grade 8 Math	
Louisiana Student Standards (LSS)	Louisiana Connectors (LC)
<p><b>8.NS.A.1</b> Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers, show that the decimal expansion repeats eventually. Convert a decimal expansion that repeats eventually into a rational number by analyzing repeating patterns.</p>	<p><b>LC.8.NS.A.1a</b> Identify <math>\pi</math> as an irrational number.</p> <p><b>LC.8.NS.A.1b</b> Round irrational numbers to the hundredths place.</p>
Grade 3 English Language Arts	
Louisiana Student Standards (LSS)	Louisiana Connectors (LC)
<p><b>RL.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p>	<p><b>LC.RL.3.1a</b> Answer questions related to the relationship between characters, setting, events, or conflicts (e.g., characters and events, characters and conflicts, setting and conflicts).</p> <p><b>LC.RL.3.1b</b> Answer questions (literal and inferential) and refer to text to support your answer.</p> <p><b>LC.RL.3.1c</b> Support inferences, opinions, and conclusions using evidence from the text including illustrations.</p>

### Science LCs

The LCs for science are aligned to the *Louisiana Student Standards for Science*, adopted in spring of 2017. The LCs for science clarify concepts in the standards by deconstructing the structure of individual Performance Expectations (PEs) (i.e., standards) into teachable and assessable segments of content. The LCs for science are arranged by grade levels for kindergarten through grade 8 and by content areas for high school. The LCs include:

- **Performance Expectations (PE)** which are descriptions of what students should be able to do by the end of a year of instruction.
- **Science and Engineering Practices (SEP)** which are the practices that scientists and engineers use when investigating real world phenomena and designing solutions to problems. There are eight science and engineering practices that apply to all grade levels and content areas.
- **Disciplinary Core Ideas (DCI)** which describe the most essential ideas (content) in the major science disciplines that students will learn. Disciplinary Core Ideas are grouped into five science domains.
- **Crosscutting Concepts (CCC)** which are common themes that have application across all disciplines of science and allow students to connect learning within and across grade levels or content areas. The seven crosscutting concepts apply to all grade levels and content areas.

A grade 8 example from the science LCs is shown in Exhibit 6.

#### Exhibit 6. Example Grade 8 Science LCs

Grade 8 Science MATTER AND ITS INTERACTIONS	
Louisiana Student Standards	Louisiana Connectors (LC)
<b>8-MS-PS1-1</b> Develop models to describe the atomic composition of simple molecules and extended structures.	<b>LC-8-MS-PS1-1a</b> Using a model(s), identify that an atom's nucleus as made of protons and neutrons and is surrounded by electrons. <b>LC-8-MS-PS1-1b</b> Using a model(s), identify individual atoms of the same or different type that repeat to form extended structures (e.g., sodium chloride).

### Development of Content Claims

#### ELA and Mathematics Development

The ELA and mathematics claims were developed in 2011 through the NCSC project. They were collaboratively developed by the partner states and organizations as part of the first phase of an iterative five-phase principled approach to assessment development. Once developed, the content claims guided the prioritization of content for assessment and the development of design patterns, task templates, curriculum, performance level descriptors (PLDs), items, and professional development resources.

NCSC engaged content experts, assessment experts, special educators, and state leaders in the development of content claims and the prioritization of content for ELA and mathematics. NCSC sought to answer the following questions through this process (see NCSC Brief #7):

1. What is grade-level content?
2. How does learning change from grade to grade?
3. How can students with significant cognitive disabilities learn grade-level content while also building basic numeracy and literacy?
4. How can an alternate assessment based on alternate achievement standards (AA-AAS) be built on the NCSC content model?

Although no longer a member of NCSC (now the Multi-state Alternate Assessment consortium), Louisiana continues to draw from the ELA and mathematics content claims and prioritization for its LEAP Connect assessments given Louisiana licensed the NCSC content from the spring 2015 operational administration. Louisiana implements NCSC's definitions of graduated understandings of depth, breadth, or complexity of grade-level content to define alternate achievement at multiple levels, ensuring that the LEAP Connect alternate assessment content aligns with grade-level academic expectations in ELA and mathematics.

### *Science Development*

The science content claims were newly developed for the LEAP Connect science assessments in 2019. The development of content claims and the prioritization of content for the LEAP Connect for science involved collaboration and iterative reviews among the LDOE staff, Louisiana educators, and Louisiana's assessment vendor.

After considering several different options, the LDOE chose to prioritize science content (as described in the LCs) based on relative distribution of domain coverage in the LSS for science. This decision was based on reviews of: the Louisiana Student Standards (LSS) for science, the Grades 4 and 8 LEAP 2025 Assessment Guides, the LEAP 2025 Assessment Guide for Biology, the LEAP 2025 Science assessment blueprints for grades 4 and 8 included in the *2018–2019 and 2019–2020 LEAP Framework and Test Construction Documentation: Grades 3–8 Science*, and the LEAP Connectors for Science. In addition, the number of prioritized LCs (i.e., ten) matches the number of prioritized Connectors for the NCSC ELA and mathematics assessments, which promotes coherence across content areas.

The LDOE held a virtual stakeholder review of the proposed prioritized LCs for science in March 2019. This meeting gave Louisiana educators an opportunity to evaluate the prioritized LCs for science using guiding questions as criteria, and to recommend either keeping the proposed LCs or replacing with different LCs. The guiding questions included:

- Is there continuity of knowledge, skills, and abilities of the LCs across the grade pairs?
- What is the same across grade pairs?
- Do the skills represent new content and/or skills across grade pairs?
- Do the LCs reflect a deeper understanding of science content, knowledge, and skills between grades 4 and 8, and grade 8 and high school?

The LDOE recruited 24 panelists based upon their familiarity with students with significant cognitive disabilities, their familiarity with the LCs for science, and their grade-level and content expertise. In addition, the LDOE strove for panels that were demographically representative of the students in the state. Panelists were recruited from Ascension Parish, Caddo Parish, Calcasieu Parish, Central



Community, Collegiate Academies, Jefferson Davis Parish, Lafayette Parish, Lincoln Parish, Livingston Parish, and St. Tammany Parish. Panelists had an average of 12.6 years of teaching experience.

Overall, the panelists agreed with the proposed prioritized LCs. They recommended that two of the grade 4 LCs be replaced but agreed with the other 28 prioritized LCs across grades 4, 8, and high school. In addition, panelists agreed overall with the vertical progression of LCs.

### **Adoption of Claims**

The ELA and mathematics claims and prioritized content used for the LEAP Connect assessments were adopted in 2011 as part of Louisiana’s participation in NCSC. This was a highly collaborative and iterative process involving content experts, assessment experts, special educators, and state leaders. Additional information about this process can be found in the NCSC 2015 Technical Manual.

The claims for science were adopted in 2019. The review and approval process involved several meetings in 2019 between Louisiana’s assessment vendor and LDOE staff and stakeholders. After the claims and prioritized content were reviewed by Louisiana educators in a virtual meeting in March 2019, the LDOE reviewed and gave final approval on the claims and prioritized content during an in-person meeting in Baton Rouge, Louisiana in April 2019.

### **Reviews**

#### *Item Bank Review*

In spring of 2019, the LDOE’s vendor conducted an item bank review to ensure that the ELA and mathematics items align with the prioritized LCs for assessment (see Appendix C and Appendix D for reports). The results of these reviews helped the LDOE to better understand the organization and content of their current item bank and the numbers of items by subject area, grade level, item type, item tier, and their status (e.g., operationalized, “do not use”). These reviews assist the LDOE in maintaining their item bank, developing item specifications, planning for future field testing, identifying new item writing requirements, and ensuring that the item bank aligns with overall test specifications. In addition, an analysis of the LCs and the NCSC Core Content Connectors (CCCs) and the LSS and the Common Core State Standards was conducted in spring of 2019. This review established connections across the four sets of academic content.

For science, the LDOE engaged content experts, assessment experts, and Louisiana educators in an iterative and collaborative process of identifying which content (i.e., LCs) should be prioritized for assessment. The LDOE chose to prioritize science content based on relative distribution of domain coverage in the LSS for science. This decision was based on reviews of several key documents, and the number of prioritized LCs (10) matches the number of prioritized LCs in ELA and mathematics, promoting consistency across content areas. The proposed prioritized LCs were then reviewed by educators, who made suggestions about which LCs may need to be replaced. This work was conducted in spring of 2019. The science items were field tested via a census field test in 2020 and forms created for the first operational administration in 2021.

Each year, the LDOE’s vendor consults the initial review, items operationalized for assessment after field testing, and uses the findings to inform new item development.

To ensure that ELA, mathematics, and science items are appropriate and aligned to the prioritized content for assessment (and thus, are designed to gather sufficient information to support the content claims), the LDOE and its vendor facilitated virtual content, bias, and sensitivity reviews and data reviews of LEAP Connect assessment items. These reviews help maintain clear links between the content claims, the prioritized LCs, and the items.

### *Content, Bias, and Sensitivity Review*

The Content, Bias, and Sensitivity Review meeting was held virtually with educators in summer of 2020. The purpose of this meeting was to gather content alignment and bias/sensitivity feedback from Louisiana educators on the ELA, mathematics, and science items eligible to appear on the spring 2021 operational assessments (as operational or field test items). The meeting provided Louisiana educators the opportunity to evaluate the items using an item review checklist to recommend accepting the item as is, to recommend revising and accepting, or to recommend rejecting the item.

The LDOE recruited 38 panelists based on their familiarity with students with significant cognitive disabilities, their familiarity with the content across the grade spans, and their expertise with students with visual and hearing impairments. The LDOE also recruited panels that were demographically representative of the students in the state. According to survey results, fifty percent (50%) of panelists had 15 or more years of experience. The majority of respondents (68%) were special education teachers. Nine (24%) respondents taught students with visual impairments or who are deaf. Four (11%) respondents taught students who are English Learners. Twenty-three (61%) respondents were general education teachers for ELA, math, or science.

For ELA, mathematics, and science, panelists reviewed items for alignment, content, complexity, and bias issues. Panelists' feedback was used to inform item-level revisions.

### *Data Review*

The LDOE conducted an internal data review in April 2021 and held a reconciliation meeting to finalize any outstanding decisions regarding items. The LDOE decided to conduct the data review internally for multiple reasons. Due to the Covid-19 pandemic, the LDOE did not want to pull educators out of classrooms during a time they were needed most for virtual, hybrid, or in-person instruction. In addition, LDOE had determined that they would re-administer the intact 2021 form in the spring of 2022 and be able to review the performance data from both the 2021 and 2022 years. The purpose of this internal review was to evaluate item performance data and considerations to couple with the performance data from 2022.

Prior to the internal data review, items were "flagged" based on item difficulty and item differentiation. Item difficulty refers to the percentage of students taking the assessments who answered the item correctly. Item differentiation reflects the relationship of a student's performance on a single item and a student's overall score. It provides a measure for how well items are differentiating between students who have mastered the skill in the item and those who have not.

Below are the data review criteria used in the 2021 Internal Data Review of the 2021 Operational Assessment. These reflect the criteria used in the 2020 data review with additions per LDOE that are italicized.

- 1) Difficult item: Low p-value < 0.50, Tier 1 (two answer choice options)

- a. For items at the lowest complexity level, there are only two answer choices. If the p-value is less than 0.50 for this type of item, the item is flagged.
  - i. *These items include CR items within math and science as well as open response items in ELA grades 3 and 4 because they are scored by the test administrator (TA) who selects A or B on the online test platform after the student completes the item and the item is scored by the TA using the provided rubric.*
- 2) Difficult item: Low p-value < 0.33, Tiers 2–4 (three answer choice options)
  - a. For items at complexity levels 2–4, there are three answer choices. The value of 0.33 is the chance level and corresponds to the 0.25 criterion LDOE uses when flagging 4 option items.
- 3) Easy item: High p-value > 0.90.
- 4) Low point-biserial correlation (item to total) < 0.00. (A low point-biserial correlation means there is little to no relationship between student performance on the item and student performance on the total test score with the item included in the total score.)
- 5) Complexity reversal: items harder at the lowest level of complexity (Tier 1) than at the highest level of complexity (Tier 4).
- 6) Distractor analysis: The distractor-total correlation value is negative.
- 7) *Infit and outfit statistics of Rasch parameters will be included for review of items.*

The LDOE reviewed “flagged” items as they appeared on the LEAP Connect 2020–2021, the data associated with the item, as well as why the item was “flagged” (i.e., item difficulty or item differentiation) and were instructed to consider the following questions while reviewing each item:

- Does the language of the question (including any graphics) clearly communicate the task?
- Does the assigned tier accurately reflect what is being asked in this item?
- Is the concept measured appropriate for the grade level and content area?
- Is there a clear, correct answer to the item?
- Are all distractor choices clearly incorrect and plausible?

The LDOE reviewed each item and recommended that the item be: 1) accepted, 2) revised, or 3) rejected. At a reconciliation meeting in May, the LDOE staff and edCount staff then engaged in discussion about each item that was noted to be revised or rejected. edCount noted all recommendations and documented concerns moving into the 2022 administration. No items were rejected and the other field test items with noted recommendations for revisions will be considered in coordination with results from the 2022 administration.

## **The Claims**

The claims for each content area are described below.

### *ELA Claims*

There are two claims guiding the LEAP Connect for ELA: one for reading, and one for writing. These claims were developed through NCSC and are proprietary. Therefore, they cannot be shared in this document.

### *Mathematics Claims*

There are four claims guiding the LEAP Connect for mathematics. These claims were developed through NCSC and are proprietary. Therefore, they cannot be shared in this document.

### *Science Claims*

There are three claims guiding the LEAP Connect for science.

#### **Claim #1: Physical Science: Students demonstrate increasingly complex understanding of physical science.**

Knowledge and skills:

- Demonstrate understanding of composition of matter and its interactions and how matter is changed by chemical reactions;
- Demonstrate understanding of forces, motion, and interactions in physical systems;
- Demonstrate understanding of energy types, transformations, energy transfer, and relationship between energy and forces; and
- Demonstrate understanding of wave properties and that waves can make objects move.

#### **Claim #2: Life Science: Students demonstrate increasingly complex understanding of life science.**

Knowledge and skills:

- Demonstrate understanding of structures and processes in organisms that allow for growth, survival, behavior and reproduction;
- Demonstrate understanding of heredity concepts, such as inheritance and variation of traits;
- Demonstrate understanding of biological evolution as it relates to natural selection, adaptation and biodiversity; and
- Demonstrate an understanding of how humans depend upon and are responsible for Earth's resources.

#### **Claim #3: Earth and Space Sciences: Students demonstrate increasingly complex understanding of Earth and space science.**

Knowledge and skills:

- Demonstrate an understanding of the interrelationships among Earth's systems, such as changes to Earth's features over time due to physical and biological factors and how Earth's features can be used to order events that have occurred over long periods of time;
- Demonstrate an understanding of the cycling of Earth's materials and the flow of energy that drives this process;
- Demonstrate an understanding of using maps to show where things are located and the distribution of Earth's resources; and
- Demonstrate an understanding that humans cannot eliminate hazards but can reduce their impacts.

## Chapter VI. Instructional Context

The LDOE has set high expectations for students with significant cognitive disabilities to acquire grade-level academic knowledge and skills. The LEAP Connect assessment system is designed to measure the extent to which students have met these expectations and support instruction of grade-specific skills and concepts. This chapter will describe the instructional context surrounding the LEAP Connect, including how the assessments are designed to support the larger system of instruction, curriculum, and assessment.

This chapter will also describe the resources and professional development opportunities available to educators for both assessment and instruction. Finally, the section provides a description of how the LDOE supports systems, schools, and parents in improving the communicative competence for students taking the LEAP Connect assessments.

### Instructional and Curricular Needs

As described above in Chapter IV, students who participate in alternate assessments based on alternate achievement standards (AA-AAS) require modified instruction aligned with the Louisiana Connectors to acquire, maintain, and generalize academic skills. These students should receive grade-level academic instruction, but at a level of depth, breadth, and complexity commensurate with their academic needs. In other words, students should be taught using the same grade-level standards with aligned levels of achievement and with additional supports and scaffolds. While these students require adapted curricular materials, the curriculum should still align to grade-level content. Students with significant cognitive disabilities are capable of and benefit from learning the “big ideas” in grade-level curriculum (see NCSC Brief #1).

The academic content standards for students with significant cognitive disabilities should define what is most important for students to learn in the grade-level content. The Louisiana Connectors (LCs) in ELA, mathematics, and science, which are derived from the Louisiana Student Standards (LSS), define these key ideas and help guide instruction.

In addition to providing grade-level academic instruction to students with significant cognitive disabilities, educators also need to help students advance to higher grade levels. There should be a clear pathway for students to progress through grades which reflects high academic expectations and does not restrict students from moving beyond introductory knowledge and skills (see NCSC Brief #2).

The LCs, along with other instructional and curricular resources (described below), help educators provide instruction that reflects high expectations, gives students access to grade-level academic content, and sets students on a pathway to increasingly rigorous instruction in higher grades.

### Instructional and Curricular Resources

The LDOE has developed several instructional and curricular resources for educators of students with significant cognitive disabilities. These can be found on the [Students with Significant Cognitive Disabilities webpage](#) on the LDOE’s website. These include:

- **Louisiana Connectors in ELA, mathematics, and science** (ELA and mathematics adopted in 2016, science adopted in 2017) – Described above in Chapter V.
- **Essential Elements Cards (EECs) in ELA and mathematics** – The EECs are designed to help teachers develop lessons that promote access to grade-level content and understand how students move

toward the Louisiana Student Standards. Each EEC contains one or more LC and provides instructional strategies and suggested supports for students to demonstrate what they know and can do.

- **Science Component Cards** – These documents break down the performance expectations (PEs), science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) outlined in the LCs for science and provide “clarification statements” that describe what types of activities could be implemented in the classroom to address these elements.
- **Case Studies** – These documents are based on accounts from educators across the US and have been tailored to Louisiana standards and curricula. The case studies are meant to provide examples of how the resources available to Louisiana educators may be used with students to promote high academic expectations and outcomes.
- **Adapting Lesson Plans** – These documents are designed to guide educators through adapting grade-level content for students with significant disabilities. They offer matrices and exemplars that show how grade-level content can be scaffolded and prioritized so as not to lose the key concepts of the content.
- **Student Response Modes** – This resource describes possible ways for students to show what they know and can do in the classroom. This is meant to help educators identify the best way for students to communicate. The potential student response modes listed for consideration include: “point to the correct response when given an array,” “pull off the correct response,” “eye gaze,” “say or type,” “show through demonstration,” “write or type on a computer,” or “use materials from the lesson.”
- **LEAP Connect Sample Items** – These items were approved in 2017 and help educators gain a better sense of the content and format of items on the LEAP Connect assessments. These items could help educators develop lessons and activities that align to the LCs.
- **Draft Companion Resources for the ELA Guidebooks for Students with Significant Cognitive Disabilities** – As described above in Chapter III, these resources were developed in the 2019–2020 school year and were piloted and refined in 2020–2021 to provide teachers with access to high-quality ELA curriculum, promote professional learning, and increase options for students with the most complex needs to participate in an inclusive, least restrictive environment.

All the materials were developed and reviewed iteratively and in collaboration with multiple LDOE stakeholders and content/severe disabilities experts. All curricular and instructional resources are reviewed and revised as needed on a continual basis. Each year, the LDOE will determine whether new materials need to be developed, which materials need to be revised, and which materials (if any) should be removed or replaced.

### **Supporting Communicative Competence**

Communicative competence is a vital consideration for the instruction and assessment of students with significant cognitive disabilities. To access grade-level academic content and to progress through grades, students must be able to communicate what they know and can do. In addition, teachers must understand the best way to communicate with each individual student. A student’s primary mode of communication may be verbal or non-verbal and may include strategies such as: gestures (e.g., pointing), signs, pictures, eye-gaze, or augmentative and alternative communication methods. Teachers may provide instruction verbally, through sign language, printed text, gestures, pictures, objects, or demonstrations. For students who do not use verbal communication, the primary mode(s) of

communication should be documented in the student's IEP and should be closely monitored and supported throughout the student's instruction (see NCSC Brief #4).

The LDOE supports educators and students in establishing consistent modes of communication through resources such as the Student Response Modes documents (described above), which outline the various types of communication students may use to show what they know and can do. In addition, the LDOE developed a Literacy Folder for Students with Significant Disabilities which allows educators to chart students' growth in literacy and communication skills across grades. As part of this document, educators complete a "communication profile" which provides information about a student's needs/status related to both expressive and receptive communication.

As described in Chapter IV, the LDOE implemented the LCI in the 2021 assessment cycle to, in part, gather more robust information about students' modes of communication. Findings from the LCI indicate the majority of student received services via IDEA disability category of intellectual disability (54%), and 24% of students received services via the IDEA disability category of autism. TAs were also asked to select any additional (non-primary) identified disabilities for which students received school-based special education services. The most common responses included intellectual disability (44%) and speech/language impairment (27%). Regarding student expressive communication, the majority of TAs (69%) reported their student used symbolic language to communicate, while a smaller percentage (22%) reported their student used intentional communication, but not at a symbolic level. Over half of the TAs (57%) indicated their student's receptive communication reflected that the student "independently follows 1–2 step directions presented through words and does not need additional cues," and approximately one-third (33%) indicated their student "required additional cues to follow 1–2 step directions. Over three-quarters of respondents (76%) indicated their student had vision within normal limits, and almost all respondents (94%) indicated their student had hearing within normal limits. Approximately 11% of TAs reported their student used an augmentative communication system in addition to or in place of oral speech.

## Chapter VII. Test Development

### Approach to Test Design

The LEAP Connect assessments in ELA, mathematics, and science are designed around pre-defined measurement constructs. Articulating these constructs is a critical step in test design and development, as the constructs define the critical academic content that students should master in each grade and content area. Defining these constructs early in the design process helps ensure that assessment items and tasks are being developed to measure only construct-relevant knowledge and skills. This is an important aspect of accessibility; it guides developers in minimizing construct-irrelevant barriers to items and tasks.

#### *ELA and Mathematics Constructs*

The constructs for the LEAP Connect assessments in ELA and mathematics are taken from the NCSC assessments. These constructs were designed to reflect appropriate academic expectations for students across grades and to be flexible in considering the ways students with significant cognitive disabilities demonstrate their knowledge and skills. To do this, NCSC partners reviewed grade-level content using the following criteria (see the 2015 NCSC Technical Manual):

- The importance of the content to be assessed with respect to what the assessment is intended to measure (described above in Chapter V);
- The distribution of and alignment to the mathematics domains and ELA strands in college- and career-ready standards consistent with general assessments; and
- The degree of flexibility the content would provide in developing items at varying complexity levels.

In addition, the NCSC partners considered the following questions as they reviewed content:

- Why is this learning important?
- How can the knowledge and skills (that have been prioritized/emphasized) collectively inform interpretations about what a student knows and can do?
- What evidence do we need to collect to enable us to make the intended claims?
- How will we obtain that evidence from students in this population?

The final set of measurement targets for mathematics are listed in Exhibit 7.

#### **Exhibit 7. Mathematics Measurement Targets**

<b>Mathematics Measurement Targets</b>
<ul style="list-style-type: none"><li>• The ability to carry out mathematical procedures;</li><li>• An understanding of mathematical concepts;</li><li>• The ability to model quantitative relationships; and</li><li>• The ability to solve problems based on real-world situations.</li></ul>

The final set of measurement targets for reading and writing are listed in Exhibit 8.



## Exhibit 8. Reading and Writing Measurement Targets

Reading Measurement Targets
<ul style="list-style-type: none"><li>• The use of key details to describe the central idea or theme from literary texts;</li><li>• The use of evidence to summarize or make inferences from literary texts;</li><li>• The use of key details and evidence to summarize or support the main idea from informational texts;</li><li>• The location of relevant information using text features to answer questions from informational texts;</li><li>• The determination of comparability of key ideas when making connections across informational texts (grades 5 through high school);</li><li>• The use of context to determine the meaning of general academic words or phrases or domain-specific vocabulary; and</li><li>• The identification of words (grades 3 and 4).</li></ul>
Writing Measurement Targets
<ul style="list-style-type: none"><li>• The ability to generate a permanent product to represent and/or organize ideas or thoughts so that messages can be interpreted by someone else when the writer is not present—that is, when responding to a writing prompt, the ability to produce a Literary/Narrative, Informational/Explanatory, or Persuasive/Argument permanent product;</li><li>• The ability to include grade-specific writing skills related to organization, language and vocabulary, idea development, and conventions that are specific to a text type in a written product; and</li><li>• The ability to apply writing skills to develop a narrative, informative/explanatory, or argument text.</li></ul>

### *Science Constructs*

The measurement constructs for the LEAP Connect science assessments were articulated using a similar approach to the one employed by NCSC for ELA and mathematics. Science content and assessment experts reviewed grade-level science knowledge and skills, as defined in the LCs and LSS for science, and identified the most critical content for assessment in relation to the assessment and content-specific claims.

The final set of measurement targets for science are organized by grade and domain. They are listed in Exhibit 9.

## Exhibit 9. Science Measurement Targets

Science Measurement Targets
Grade 4
<ul style="list-style-type: none"><li>• Physical Science – Students demonstrate an understanding of position and motion of objects and transfer of energy to explain the physical world and describe that waves move in ways that can be observed, described, predicted, and measured.</li></ul>

<ul style="list-style-type: none"> <li>• Life Science – Students demonstrate an understanding of the characteristics and structures of living organisms and how organisms respond to a continually changing environment.</li> <li>• Earth and Space Science – Students demonstrate an understanding of the impact of natural Earth processes and the continual changes in land and water features of Earth.</li> </ul>
<p><b>Grade 8</b></p> <ul style="list-style-type: none"> <li>• Physical Science – Students demonstrate an understanding of chemical and physical changes, interactions involving thermal energy, and the design of materials and applications of technology that improve the quality of life for humans.</li> <li>• Life Science – Students demonstrate an understanding of how living things interact with one another and with the non-living elements of their environment, mechanisms by which living things reproduce and transmit information between parents and offspring, and the patterns of relationships among species.</li> <li>• Earth and Space Science – Students demonstrate an understanding of the Earth’s System in terms of its structure, cycling of energy flows and matter, and distribution of renewable and nonrenewable resources.</li> </ul>
<p><b>High School Biology I</b></p> <ul style="list-style-type: none"> <li>• From Molecules to Organisms – Students demonstrate an understanding of how complex organisms respond to their environment, how internal conditions remain stable and relatively constant, and ways humans protect against diseases and infection.</li> <li>• Ecosystems – Students demonstrate an understanding of the interaction between living organisms and their environment, and the role of humans in protecting Earth’s biodiversity.</li> <li>• Heredity – Students demonstrate an understanding of the molecular basis of heredity.</li> <li>• Biological Evolution – Students demonstrate an understanding of the principles that explain the diversity of life and biological evolution.</li> </ul>

*Principled Design and Universal Design*

The LEAP Connect assessment system was designed according to the principles of principled design and Universal Design (UD).

According to AERA et al. (2014, pp. 6-7), tests should be designed to minimize construct-irrelevant barriers for all test takers in the target population. UD seeks to make educational materials and assessments as accessible as possible to the widest variety of people while minimizing separate-but-equal situations. Thus, an understanding about student characteristics and the application of UD principles inform the design of each item and any necessary additional adaptations and accommodations that do not interfere with the measured construct.

Using principled design, assessment developers incorporated UD principles into the assessment item design including operational items, field test items, and test bank items. The principled design approach focuses the development of items for all students on construct-relevant content (i.e., the knowledge, skills, and abilities intended to be measured), minimizing the impact of construct-irrelevant skills (e.g., print size, lack of assistive technology device, inability to engage with the items), and considering appropriate accessibility options.

The definition and implementation of accessibility features for all aspects of the assessment development process to provide universal access (beyond what is currently achieved through accommodations and Universal Design) is necessary to support improved performance for English Learners (ELs), students with disabilities, students with 504 plans, and students with disabilities who are ELs (Almond et al., 2010).

To this end, the LEAP Connect assessment developers incorporated the guidelines of UD as described by the National Center on Universal Design for Learning (<http://www.udcenter.org/>). Developers addressed the vast majority of student access needs (e.g., cognitive, processing, sensory, physical, language) up front in the design of the assessment items. This was done by embedding specific accessibility features (e.g., magnification, audio representation of graphic elements, linguistic simplification) into the structure and delivery of the assessment items and formats.

### *Test Features*

The LEAP Connect assessments are fixed-form, computer-based tests administered online through the DRC INSIGHT platform (see below for more information). They are administered in a one-to-one setting and include both selected-response and constructed-response items. For additional information, please see Chapter III and Chapter VIII.

### **Assessment Frameworks**

The LDOE and its vendor have developed assessment framework documents for ELA, mathematics, and science. The assessment frameworks summarize key aspects of the assessments and their development, including field test design, blueprints, item selection, and operational administration. In addition, they inform the continued development of test, item, and scoring specifications for the LEAP Connect assessments.

Each year, the assessment frameworks are reviewed, revised, and updated as needed in a collaborative process between LDOE staff and LDOE's vendor. This process includes annual reviews of the existing item pool counts and distributions, student performances across item types and content areas, testing times, and item performance.

### *Test Specifications included in the Assessment Frameworks*

The LEAP Connect assessment items are written based on common item and test specifications, which establish performance levels with achievement level descriptors for ELA, mathematics, and science. The test specifications for the LEAP Connect assessments for ELA, mathematics, and science provide general guidelines for the development of all test items used in the assessments for each content area and grade level. Each specification document includes:

- **Introduction:** This section provides an explanation of the ELA, mathematics, or science concepts assessed by the LEAP Connect assessments.
- **Item Criteria:** This section addresses cognitive complexity levels (i.e., tiers) as well as the review processes used to ensure the quality of the stimuli and test items (e.g., scenarios, use of graphics, item style and format, etc.). This section also includes the general guidelines for selection and development of selected-response and constructed-response items.
- **Item Descriptions:** This section contains specific information about each identified LC relevant to the specific LEAP Connect assessments. This section includes, but is not limited to, clarification statements, content limits, stimulus attributes, response attributes, and sample items for additional

guidance and clarification. Information related to specific item characteristics at varying tiers and the percent distribution on the test form is also represented.

- **Universal Design:** This section is devoted to the application of Universal Design principles to ensure the development of assessments that are accessible to the greatest number of test takers.
- **Passage Guidelines:** Specific to ELA, passage development guidelines across Tiers 1 through 4 are included as an appendix to the ELA specifications documents.

### *Blueprints*

The assessment blueprints, as part of the overall test specifications, provide valid information about students' knowledge and skills in ELA, mathematics, and science in relation to the LCs. The blueprints also define what is centrally important, represent a balance of emphasis, and are vertically sequenced.

The LEAP Connect assessment blueprints in each content area include the content category, weight (as a percentage), LC, item type (selected-response or constructed-response), and number of score points for each assessed grade.

To develop the 2020–2021 blueprints for ELA, mathematics, and science, the LDOE and its vendor used the LEAP Connect Directory of Test Specifications (DOTS) for each grade and content area, Field Testing Plan, and Assessment Frameworks. This was an iterative and collaborative process between the LDOE and content and assessment experts. The 2020–2021 blueprints in ELA, mathematics, and science were approved in late spring of 2020.

### *Item Writing Specifications*

Passage and item development for the LEAP Connect assessments in ELA, mathematics, and science is guided by item specifications and a style guide. Item specifications include, but are not limited to, the following information:

- Alignment across the LCs for students with significant disabilities: Details how they were developed to align with the LSS in ELA, mathematics, and science;
- Rationale regarding item formats;
- Allowable adaptations;
- Administrator instructions;
- Scoring rules;
- Item contexts;
- Variable features;
- Cognitive task levels;
- Use of graphics;
- Item style and format;
- General content limits by academic grade-level content target;
- For ELA item specifications, a delineation of the appropriate text structure for each of the four tiers;

- For mathematics item specifications, a delineation of the sentence structure, numbers, and equation types for each of the four tiers; and
- For science item specifications, a delineation of the Science and Engineering Practices (SEP), Disciplinary Core Ideas (DCI), and Crosscutting Concepts (CCC) for each of the four tiers.

### **Passage and Item Development**

The development process begins with an item/passage development plan. This plan uses information from the test blueprint and includes specific targets (e.g., by item type, content area, standard, etc.) that account for important considerations including: item attrition due to loss during the review process; item inventory of the Louisiana bank of current items; replacing released items, as necessary; and ensuring optimal coverage of content during the development process. Item level specifications are also reviewed/updated to support the ongoing alignment of content. In addition, the LDOE and vendor used results of the alignment evaluation completed in spring of 2021 on the LEAP Connect assessment to guide item development. Prior to passage review and any item development activity, all passages are presented to the LDOE for review and approval. Only those passages that are accepted are brought to the content and bias review meeting with accompanying items.

Items are written by content and severe disabilities experts who use pre-approved criteria and checklists to ensure that LEAP Connect items and passages are not only aligned to the LCs, but are also free from bias and sensitivity issues. As item writers develop items and passages, they consider whether any content or terminology could provide an unfair advantage to, or be offensive to, any subgroup of students who participate in the LEAP Connect assessments. Adherence to bias and sensitivity criteria early in the design and development process—well before items go through stakeholder reviews—helps to minimize the risk of needing to correct bias/sensitivity issues retroactively. Item writers rely on these criteria and other resources to ensure that LEAP Connect items are accessible to Louisiana students and do not interfere with their ability to demonstrate their knowledge or understanding.

Passage and item review checklists can be found in Appendix E. These include the *LEAP Connect Bias and Sensitivity Checklist*, which outlines criteria that ensure items do not provide an unfair advantage to or offend any subgroup of students, the *LEAP Connect Quality Item Writing Checklist*, which provides criteria for high-quality item stimuli, visuals, and response options, and the *LEAP Connect Universal Design for Assessment and Learning and Item Accessibility Checklist*, which includes Universal Design criteria and accessibility criteria for item stimuli, stems, visuals, and response options.

LEAP Connect items are developed within an online item authoring system. This system is suitable for authoring a range of item types including selected-response and constructed-response. The item authoring system is also the central repository for item administration information including scripts, accessibility information, scoring rubrics, and associated stimuli.

### ***Item Reviews***

Item reviews and revisions also occur within the online authoring system. These reviews include content experts, severe disabilities experts, copyeditors, and the LDOE staff. Items undergo several rounds of review and revision prior to moving forward in the process. Each staff member reviews for set criteria based on the purpose of their review. These reviews include content appropriateness and accuracy, alignment to the prioritized LCs, bias and sensitivity, accessibility, and adherence to the style guide.

All staff involved in the item review process undergo item security training. In addition, all reviewers/copyeditors sign non-disclosure agreements (NDAs).

### *Educator Stakeholder Reviews*

As described in Chapter V, items undergo several reviews with Louisiana educators. Prior to conducting reviews, educators receive training from test development experts. This training includes information about the background of the LEAP Connect assessment program, the purpose and logistics of the reviews, and the content, bias, sensitivity, and accessibility considerations outlined in the task models, design patterns, assessment guide, and item specifications.

Educators also participate in item security training and sign NDAs. The protocol emphasizes the security of all testing materials being used by panelists. Given the restrictions to in-person meetings due to the pandemic in 2021, all educator stakeholder review meetings were hosted virtually. To increase security in this environment, the test items were made available on a secure site requiring specified log ins that expired at the conclusion of the meeting. The items were view only and could not be printed. In addition, the NDA required that educators agree not to take screenshots of the items. Educators were also required to keep their cameras on for the entirety of the virtual meeting. While educators were encouraged to share their experience and the general process with their colleagues, they were instructed not to share any secure information with others.

### *Passage Reviews*

All passages used in the LEAP Connect ELA assessments are evaluated based on criteria outlined in the test specifications and style guide. Passages should represent a balance of literature and nonfiction to meet the grade-level expectations specified in the test blueprint, and should address a variety of genres, topics/themes, and text types as required by the LCs. Texts and other stimuli (e.g., audio, visual, graphic) should be content-rich, exhibit exceptional craft and thought, and provide useful information. Texts should also represent the full range of difficulty and complexity levels. The most complex passages should be written at a grade-level to approximate the qualitative and quantitative expectations for complexity for that grade-level. Conversely, passages designed as the least complex should allow students who are just beginning to interact with the academic content presented in the text to show what they know with simplified text that is linked to the assessed reading concepts and skills.

Content and severe disabilities experts review passages to ensure that they avoid providing an unfair disadvantage for any sub-group of students through the use of unfamiliar contexts or examples, unusual names of people or places, or references to local events or issues, and to ensure that texts do not include content that creates unease, provokes negative feelings, or challenges beliefs or values. Texts should address topics and main ideas consistent with the expectations defined by the LCs for each grade. Passages do not focus on religious themes, violence, or culturally bound topics that disadvantage large segments of the population.

Once passages are developed and refined to meet all content and accessibility specifications, assessment editors complete an editorial and style review to ensure the passages meet the expectations in the style guide. The passages are then prepared for the LDOE's review and approval in the secure online item authoring and banking system.

In spring of 2019, content and severe disabilities experts reviewed existing passages in the item bank including item difficulty and item-total correlation. This review showed that the majority of passages

were appropriate according to the available data (see Appendix C). Each year, the LDOE field tests one new passage and item set at each grade level.

### *Content, Bias, and Sensitivity Reviews*

As described in Chapter V, the LDOE recruited Louisiana educators to participate in reviews of items for content, bias, and sensitivity in summer of 2020 (see Appendix F for report). The LDOE recruited 42 panelists based on their familiarity with students with significant cognitive disabilities, their familiarity with the content across the grade spans, and their expertise with students with visual and hearing impairments. The LDOE also aimed to recruit panels that were demographically representative of the students in the state. A total of 38 (14 ELA panelists, 24 math and science panelists) panelists participated in the content and bias review.

At the conclusion of the content and bias review, facilitators asked panelists to respond to an electronic version of the demographics and evaluation survey. All survey responses were collected anonymously. The responses indicated that the number of years of teaching experience among respondents ranged from 1-15 or more years. Nineteen out of thirty-eight (50%) respondents had 15+ years of teaching experience. The majority of respondents (26, or 68%) were special education teachers. Nine (24%) respondents taught students with visual impairments or who are deaf. Four (11%) respondents taught students who are English Learners. Twenty-three (61%) respondents were general education teachers for ELA, math, or science.

Panelists reviewed items for alignment, content, complexity, and bias issues. Panelists' feedback was used to inform item-level revisions to finalize items for field testing on the spring 2021 assessment.

**General Review Criteria:** For ELA, mathematics, and science, educators reviewed items using the following criteria.

- Does this item measure the stated Standard/LC (items at tiers 2-4) or Essential Understanding (items at tier 1)?
- Is this item appropriate for the stated grade level?
- Are the item directives written clearly?
- Is this item free from bias and sensitivity issues?
- Does the language of the stimulus/context, the question, and graphics clearly communicate the task?
- Are the graphics context accurate and sufficient for the item context and do graphic descriptions accurately describe the graphics in the items?
- Is the alternative text accurate and sufficient for the item context?

Criteria for selected-response items:

- Are the response options clearly written?
- Does the item have a correct answer?
- Is there a clear, single correct answer to the item?
- Are all incorrect choices clearly incorrect?

Criteria for mathematics and science constructed-response items:

- Does the item have a correct answer?
- Does the item appropriately measure the stated score point value?

**Complexity Review Criteria:** For science, educators also reviewed items for complexity using the following criteria.

- All items and response options are required to be read aloud to the student.
- All tiers identify what the item or question is about.
- All items include an appropriate amount and level of information to respond correctly.
- A similar scenario or context may be used for items assessing the same skill at varying degrees of complexity.
- May include a real-world scenario.
- May include charts, tables, maps, graphs, or other visual representations of information given the assessed LC.
- Graphics may be used based on the assessed skill and the answer options.
- Number of words and length of sentences is reduced at lower tiers.
- Vocabulary is at or below grade level.
- Definitions or examples may be provided.
- Values and data points are reduced in magnitude and number at lower tiers.
- Use of pronouns is clear and limited.
- Response options are clear, not wordy, and do not contain multiple meaning words.
- Tiers 4, 3, and 2 include three response options.
- Tier 1 includes two response options.
- Response options:
  - include only one correct response
  - vary order of placement of correct response across options A, B, and C
  - do not use words with multiple meanings
  - limit use of pronouns
  - are comparable in length
  - are stacked *short to long* or *long to short* or if needed for key variation can be a little staggered

Tiers 1 and 2:

- Tier 1 and Tier 2 questions reflect a higher level support and use of scaffolds.
- May include a “listen for” statement.
- Item context and sentences are limited in length.



- Provides some detail about a topic, context, or phenomena.
- Use simplified vocabulary.
- May provide definitions of domain-specific vocabulary and explanations.
- May include a demonstration or a step-by-step model using a parallel problem or situation to guide the student through the steps of a similar problem.
- Number of steps is limited.
- Values and data points are reduced in magnitude and number.

Tiers 3 and 4:

- Tier 3 and Tier 4 questions reflect a lower level of support and fewer scaffolds.
- Item context is expanded, and sentences are more varied in length.
- Provides more detail about a topic, context, or phenomena.
- Uses grade appropriate vocabulary.
- May provide definitions of domain-specific vocabulary and explanations.
- May include a demonstration or example.
- Values and data points are increased in magnitude and number.

**Bias and Sensitivity Review Criteria:** In addition, for bias and sensitivity, educators reviewed each item using the following criteria.

The item:

- Uses appropriate terms of high frequency, familiarity, interest, age, and grade.
- Avoids content that may be considered offensive based on race, gender, sexual orientation, age, religion, ethnicity, socioeconomic status, or regional location.
- Avoids stereotyping any group.
- Is sensitive to students who are not native English speakers.
- Does not use vocabulary that may be considerably more familiar to some groups than others.
- Avoids language that might be offensive to any group.
- Shows awareness to students' physicality (i.e., weight, disability).
- Is accessible for students from Louisiana and will NOT interfere with the student's ability to demonstrate knowledge or understanding.

Results of these reviews indicated that the ELA, mathematics, and science items were appropriate, accurate, accessible, and fair. Assessment developers flagged any items with content, bias, or sensitivity issues, as indicated by panelists. These items then underwent additional reviews and revisions by assessment developers and the LDOE.

### *Science Item and LA Connector Alignment Evaluation*

In spring of 2021, the LDOE conducted an alignment evaluation of the LEAP Connect ELA, mathematics, and science assessment items and the LCs in each of these content areas. This evaluation followed criteria set forth in the Links for Academic Learning (LAL) alignment evaluation methodology developed for alternate assessments (Flowers, Wakeman, Browder, & Karvonen, 2007). The basic premises of the LAL methodology include the following expectations for alternate assessments (adapted from Flowers et al., 2007):

- The assessments must be linked to grade-level academic content standards.
- The target for achievement must be academic content (e.g., reading, mathematics, science) that is referenced to the student’s assigned grade based on chronological age.
- Functional activities and materials may be used to promote understanding, but the target skills for student achievement are academically focused.
- Some prioritization of the content will occur in setting these academic expectations, but it should reflect the major domains of the curricular area (e.g., strands of math) and have fidelity with this content and how it is typically taught in general education.
- The alternate expectation for achievement may focus on prerequisite skills or some partial attainment of the grade level, but students should still have the opportunity to meet high academic and performance expectations, to demonstrate a range of depth of knowledge, to achieve within their symbolic communication level, and to show growth across grade levels or grade bands.

The results of this alignment evaluation for the LEAP Connect assessments will be used to inform future item and assessment development activities. The Executive Summary of this report is included as Appendix A.

### *Field Testing Overview*

Each year, the LDOE administers embedded field tests in ELA, mathematics, and science. The purposes of the LEAP Connect field tests are to determine the statistical characteristics of the items and to provide a basis for revising or eliminating items that do not function properly and impact the overall functioning of the form.

The embedded field test policies and test administration procedures for the LEAP Connect assessment system adhere to best practices set forth in such documents as the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014), *Operational Best Practices for Statewide Large-Scale Assessment Programs* (CCSSO, 2013), *Testing and Data Integrity in the Administration of Statewide Student Assessment Programs* (NCME, 2012), *Comprehensive Statewide Assessment Systems* (CCSSO, 2014), *Code for Fair Practices in Education* (Joint Committee on Testing Practices, 2004), and *CCSSO High-Quality Assessment Principles* (2015). Adherence to industry standard best practices ensures that items developed for the LEAP Connect assessments provide fair opportunities for all students to demonstrate their knowledge and skills.

### *2020-2021 Field Testing Plan*

For the 2020 – 2021 LEAP Connect **ELA** assessments, the LDOE field tested one passage set, one Literature set or one Informational set with six items at each grade, except for grade 5 with five field test items.

For the 2020 – 2021 LEAP Connect **mathematics** assessments, the LDOE field tested five items at each of the grades 3 through 8. The high school assessment included six field test items on each of two versions.

In 2020 – 2021, the LEAP Connect **science** assessments were administered in grades 4 and 8 and high school based on the Louisiana Connectors for Science. The test composition of the LEAP Connect field test assessments for grades 4 and 8 and high school was based on one form and two versions; each version contained six field test positions.

### *Item Analyses*

When analyzing field test data, researchers consider the statistical properties of existing and previously administered operational items in forms development. Academic content and assessment specialists examine item performance, including the percentage of students who answer each item correctly (the p-value) and the correlation between each item and the total test score (point-biserial correlation).

As described in the data review section of Chapter V, items are “flagged” for additional review by educator panelists. Due to Covid-19 and the plan to readminister intact forms in 2022, the LDOE completed an internal data review with plans to include educator panelists in the data review occurring after the 2022 administration.

The LDOE reviewed each item and recommended that the item be: 1) accepted, 2) revised, or 3) rejected. At a reconciliation meeting in May, the LDOE staff and edCount staff then engaged in discussion about each item that was noted to be revised or rejected. edCount noted all recommendations and documented concerns moving into the 2022 administration. No items were rejected and the other field test items with noted recommendations for revisions will be considered in coordination with results from the 2022 administration.

### *Forms Assembly*

As mentioned above, the LEAP Connect field test items are embedded into the operational assessment administration. Embedded field test items do not affect students’ scores.

Field test forms are developed with the same length and same item types (selected-response or constructed-response) in the same relative positions across versions. Field test items are designed to be indistinguishable from operational items on the forms so that students’ motivation in responding to them is at the same level as their motivation in responding to operational items. This helps researchers gather more reliable item performance data.

## **Chapter VIII. Operational Test Administration**

### **Overview**

This chapter describes the protocols and procedures for test administration, security, and accommodations for the LEAP Connect assessments in ELA and mathematics in grades 3–8 and high school, and science in grades 4, 8, and high school. It also describes the results of the spring 2021 administration.

As described in the sections below, the procedures for administration of the LEAP Connect assessments are designed to support the purposes of the assessment system: to allow educators and parents to track student progress toward college, career, and community readiness; to measure students' academic achievement; to yield defensible scores that can be used for school accountability decisions and program evaluation; and to provide reports that promote appropriate interpretation and use of data in support of enhancing practices to improve student achievement. These procedures are well-documented, disseminated, and monitored by the LDOE to ensure that the LEAP Connect assessments are being administered appropriately and are fulfilling the intended purposes and uses of the assessments.

### **Administration Procedures and Guidelines**

The LEAP Connect assessments are administered as computer-based tests in a one-to-one setting. The assessments are administered through the DRC INSIGHT assessment platform. All items, passages, and response options are read to students by the test administrator or through the testing platform. Selected-response (SR) items require the selection of a response option using the pointer tool, while constructed-response (CR) items for ELA require text to be entered into response boxes, and CR items in mathematics and science require test administrators to score student responses and enter "A" for correct or "B" for incorrect into the test administration platform.

Test administrators are instructed to allow students to respond to items based on their preferred mode of communication (e.g., eye gaze, assistive technology, pointing, etc.). The assessment system is designed to support this through the Student Response Check (SRC), which allows test administrators and students to practice answering three non-scored, content-neutral items to ensure that students can indicate their responses through their preferred mode of communication, and that the test administrator can clearly identify students' responses to each item. The SRC, among other resources developed by the LDOE, help educators establish consistent modes of communication with students (see Chapters III and VI for more information).

The LEAP Connect assessments are untimed and allow for breaks between questions or sessions (see below for more information about testing session structure). Test administrators are permitted to pause testing as needed to best accommodate the student.

LEAP Connect test administrators have access to several resources meant to guide them through the testing process. In addition to the online platform itself, test administrators use the Test Administration Manual (TAM), Directions for Test Administration (DTA), Procedures for Assessing Students Who Are Visually Impaired, Deaf, or Deaf-Blind, and reference materials for grade-specific item presentation and response collection. These materials are designed to help test administrators prepare for and administer the assessments.

As further described below, test administrators and coordinators are trained on LEAP Connect administration procedures and guidelines prior to testing.

### **Test Calendar and Session Structure**

The LEAP Connect assessments are administered over a six-week window from early February to mid-March each year. Schools determine testing days during this window based on a student's needs. The 2020 assessments were administered from February 1 to March 12, 2021.

The LEAP Connect assessments are administered over the course of multiple sessions. Breaking the assessments down into sessions allows for increased flexibility for teachers and students. Each session is untimed, allowing students to move at their own pace and allowing test administrators to pause testing for breaks as needed. Depending on the needs of the student, test administrators may pause testing for longer periods of time; for example, testing can be resumed the next day or the next week.

The LEAP Connect ELA assessments are administered in four sessions. The first two sessions consist of selected-response reading items, the third session consists of selected- and open-response writing items, and the fourth session consists of a constructed-response writing task. The mathematics and science assessments are administered in two sessions. Both sessions for the mathematics and science assessments are a combination of selected-response and constructed-response items except for grades 6, 7, and high school, which do not contain constructed-response items.

### **Test Security**

The Louisiana State Board of Elementary and Secondary Education adopted their Test Security Policy in 1998 and have periodically revised it over the years. As outlined in the policy, the State Superintendent of Education may disallow test results that may have been achieved in a manner that is in violation of test security. If test results are not accepted because of a breach of test security or action by the LDOE, any programmatic, evaluative, or graduation criteria dependent upon the data shall be deemed not to have been met. Educators or administrators who violate the test security policy or allow breaches in test security are disciplined in accordance with the provisions of R.S. 17:441 et seq., R.S. 17:81.6 et seq., policy and regulations adopted by the State Board of Elementary and Secondary Education, and any and all laws of the Louisiana Legislature.

The security procedures for the LEAP Connect assessments follow the Test Security Policy set forth by the Louisiana State Board of Elementary and Secondary Education. As described in the Spring 2020 Test Administration Manual, all LEAP Connect items, passages, and response options are secure. In addition, the Directions for Test Administration, Procedures for Assessing Students Who Are Visually Impaired, Deaf, or Deaf-Blind, ELA Reference Materials and Writing Stimuli, Mathematics Reference Materials, Science Reference Materials, and all associated test administration materials are secure. Speech-to-text or word-prediction devices or programs can be used during assessment, but any printed materials associated with them must be treated as secure, and these devices or programs must be cleared before and after each session. These devices must not have access to other programs or features. In addition, any scratch paper used during testing must be securely destroyed.

All test administrators and test coordinators are trained on test security prior to administering the assessments. This is included in the administration training, described below.

## Administration Procedures

The LEAP Connect administration procedures are outlined in the Spring 2021 LEAP Connect TAM for ELA, mathematics, and science. The TAM includes the following sections:

- Spring 2021 Notes and Reminders
- Test Administrator Pre-Administration Oath of Security and Confidentiality Statement
- Test Administrator Post-Administration Oath of Security and Confidentiality Statement
- General Information
- Participation Criteria for LEAP Connect
- Overview (LEAP Connect Assessment Guides and description of LEAP Connect item types)
- Test Security
- Test Administration Checklists
- Test Administrators' Frequently Asked Questions
- Testing Guidelines
- Accommodations
- Assessment Materials
- Student Response Check
- Student Tutorials
- Online Tools Training
- Protocols for Scribing
- Augmentative and Alternative Communication Guidelines for Constructed-Response Writing
- LEAP Connect Vocabulary for Grades 3–8 and High School

## Accommodations Procedures

The LEAP Connect accommodations procedures are outlined in the Spring 2021 LEAP Connect TAM for ELA, mathematics, and science. The *Accommodations* section of the TAM describes the assistive technology available through the testing platform, including the requirements for using such technology (e.g., the use of assistive technology during testing must be consistent with the specifications described in the student's IEP). It also describes braille, which is only available to grades 3 and 4 students<sup>4</sup>, and calculators, which can be handheld or online through the testing platform.

The TAM also specifies that other approved accommodations may be used at the discretion of the IEP team, provided they are not different from or in addition to the accommodations outlined in the student's IEP and provided in regular classroom instruction and assessment. In addition, the TAM describes special considerations for students who are blind, deaf, deaf-blind, and hard-of-hearing.

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<sup>4</sup> Braille is available for grades 3 and 4 students only to assess student performance on the foundational reading items at these grades.

More information about the accommodations available through DRC’s INSIGHT online assessment platform can be found in the [Accommodations and Accessibility Features User Guide](#).

### **Administration Training**

Each year, test administrators and coordinators undergo training to orient them to the LEAP Connect assessment system, administration procedures, and test security policy. The training provides educators with information about built-in supports and accommodations, administrative documents, the Student Response Check (SRC) and Online Tools Training (OTT), test administration, scoring and reporting, and resources available for support. In addition, educators receive information about key dates and updates for the upcoming year of testing. Only educators who have completed the training and passed a quiz may administer the LEAP Connect assessments.

### **Use of Accommodations and Accessibility**

The LEAP Connect assessment accessibility and accommodations features are described in Chapter III. As described in Chapter IV, according to the results of the 2021 End of Test Survey (EOTS), the majority of test administrators (93%) surveyed indicated that students needed the test supports provided through the LEAP Connect assessment system.

Across grades, 67% of the test administrators reported that they used the TTS to read items aloud for students to access the items. Additional assistive technology used by test administrators included calculators (65%), a “click-to-enlarge graphic” feature within the assessment platform (40%), image files associated with the reference materials (36%), tactile graphics (7%), object replacements (3%), American Sign Language (ASL; 1%), braille (less than 1%), braille display, Brailiant, CCTV, or hand-held magnification (less than 1%), or other (4%). Approximately 7% of test administrators reported that they did not need to use assistive technology for students to access the items.

### **Results from Operational Test**

The LEAP Connect assessments in ELA, mathematics, and science were administered to 7227 total students in spring of 2021. Participation numbers for the LEAP Connect by content area and grade may be found below in Exhibit 10 (these numbers reflect valid tests completed by Louisiana students).

**Exhibit 10. LEAP Connect Participation Counts**

<b>Content Area</b>	<b>Grade</b>	<b>Student Count</b>
ELA	Grade 3	≥530
	Grade 4	≥550
	Grade 5	≥600
	Grade 6	≥830
	Grade 7	≥880
	Grade 8	≥950
	High School	≥880
	Mathematics	Grade 3
Grade 4		≥530
Grade 5		≥590
Grade 6		≥820
Grade 7		≥870
Grade 8		≥940
High School		≥870
Science (Field Test)		Grade 4
	Grade 8	≥930
	High School	≥870



## Chapter IX: Scoring

### Scoring of Constructed-Response and Technology-Enhanced Items

In this chapter, the scoring process used for the 2021 LEAP Connect assessments is described, with a particular focus on the handscoring of ELA writing constructed-response items. At the end of this section, the results of the inter-rater reliability for the handscoring of the LEAP Connect ELA writing constructed-response field test items are presented.

### Constructed-Response Item Scoring Process

#### *ELA Constructed-Response Items*

Constructed-response field test items for LEAP Connect ELA writing were consensus scored during rangefinding by committees of Louisiana educators in 2018 and 2019 (as indicated below) and by readers who were trained by DRC. Second reads of 10% of these responses were completed by DRC readers (see Exhibit 11). (Note that since the responses for all grades and items in 2018 were consensus scored by rangefinding committees, the 10% read-behind process was not initiated until 2019.)

#### Exhibit 11. Constructed-Response Field Test Scoring

	2018 Item IDs	2019 Item IDs	2020 Item IDs
ELA writing grade 3	956531*, 956996*	956531, 956996	956996
ELA writing grade 4	956064*, 957006*	956064, 957006	957006
ELA writing grade 5	955836*, 955846*	955836, 955846	955836
ELA writing grade 6	955592*, 955617*	955592, 955617	955592
ELA writing grade 7	954190*, 957013*	954190, 957013	957013
ELA writing grade 8	950395*, 957024*	950395, 957024	950395
ELA writing high school	N/A	984898*, 996555*	996555

\*Responses consensus scored by rangefinding committees

#### *Mathematics and Science Constructed-Response Items*

Constructed-response field test items for the LEAP Connect mathematics and science assessments were scored by test administrators. Constructed-response items in these content areas require test administrators to enter “A” for a correct student response, or “B” for an incorrect student response.

### Selection of Scoring Evaluators

The following sections explain how readers were selected and trained for the LEAP Connect ELA writing handscoring process. The Monitoring the Scoring Process section describes how the readers were monitored throughout the handscoring process.

#### *Reader Recruitment and Interview Process*

DRC strives to develop a highly qualified, experienced core of evaluators to appropriately maintain the integrity of all projects.

All readers hired by DRC to score LEAP Connect ELA writing test responses had at least a four-year college degree. DRC has a human resources director dedicated solely to recruiting and retaining the handscoring staff. Applications for reader positions are screened by the handscoring project manager, the human resources director, or recruiting staff to create a large pool of potential readers. In the screening process, preference is given to candidates with previous experience scoring large-scale assessments and with ELA degrees. At the personal interview, reader candidates are asked to demonstrate their proficiency in writing by responding to a DRC writing topic and their proficiency in mathematics by solving word problems with correct work shown. These steps result in a highly qualified and diverse workforce. DRC personnel files for readers and team leaders include evaluations for each project completed. DRC uses these evaluations to place individuals on projects that best fit their professional backgrounds, their college degrees, and their performances on similar projects at DRC. Once placed, all readers go through rigorous training and qualifying procedures specific to the project on which they are placed. Any reader who does not complete this training and demonstrate the ability to apply the scoring criteria by qualifying at the end of the process is not allowed to score live student responses.

### *Security*

Whether training and scoring are conducted within a DRC facility or done remotely, security is essential to their handscoring process. When users log into DRC's secure, web-based scoring application, ScoreBoard, they are required to read and accept their security policy before they are allowed to access any project. For each project, scorers are also required to read and sign non-disclosure agreements, and during training emphasis is always given to what security means, the importance of maintaining security, and how this is accomplished.

Readers only have access to student responses they are qualified to score. Each scorer is assigned a unique username and password to access DRC's imaging system and must qualify before viewing any live student responses. DRC maintains full control of who may access the system and which item each scorer may score. No demographic data is available to scorers at any time.

Each DRC scoring center is a secure facility. Access to scoring centers is limited to badge-wearing staff and to visitors accompanied by authorized staff. All readers are made aware that no scoring materials may leave the scoring center. To prevent the unauthorized duplication of secured materials, cell phone/camera use within the scoring rooms is strictly forbidden. Readers only have access to student responses they are qualified to score.

In a remote environment, security reminders are given on a daily basis. Similar to the work that occurs within DRC scoring sites, in a remote environment, education about security expectations is the best way to maintain security of any project materials. DRC requires scorers working remotely to work in a private environment away from other people (including family members). Restrictions are in place that define the hours during the day scorers are able to log into the system. If any type of security breach were to occur, immediate action would be taken to secure materials, and the employee would be terminated. DRC has the same policy within their scoring sites.

## Handscoring Training Process

### *Training Material Development*

Reader training for LEAP Connect ELA writing task was conducted using item-specific Anchor Sets, Training Sets, and Qualifying Sets that were developed by DRC using committee scored field test responses from rangefinding meetings conducted in 2018 (grades 3–8) and 2019 (high school).

Each Anchor Set contained three annotated anchor responses per score point for each of the three writing traits. Anchor Set responses were selected to illustrate particular scoring concepts and student response patterns. These responses helped ensure that readers were able to make accurate and consistent scoring decisions for the response types they were likely to encounter. All Anchor Set responses were annotated to explain precisely how they exemplify each score point and to clarify the lines between the score points. The Anchor Set utilized the notes generated during rangefinding to ensure that readers reached scoring decisions in a manner consistent with the decision-making process employed during rangefinding. The rationales used by the rangefinding committees to explain scores were given to the readers, thus creating a direct link between the rangefinding committees and the readers. This ensured that the training materials reflected the input of educators from across the state of Louisiana.

DRC also developed three Training Sets and three Qualifying Sets for each item. These sets consisted of 10 student responses each. The training and qualifying materials helped further readers' understanding of how the rangefinding and field test responses were scored to ensure accurate and consistent scoring. When reviewing training and qualifying papers with their group of readers, each Scoring Director utilized annotations generated from the notes compiled during committee discussions at rangefinding.

### *Training and Qualifying Procedures*

Handscoring involves training and qualifying readers, monitoring scoring accuracy and production, and ensuring security of both the test materials and the scoring facilities. An explanation of the training and qualification procedures follows.

Reader training began with a group-wide presentation and discussion of the Anchor Set by the Scoring Director. Next, the readers practiced by scoring the responses in the Training Sets. Afterward, the Scoring Director led a thorough discussion of each set. After the Anchor Set and all three training sets were discussed, readers were then required to demonstrate their ability to apply the scoring criteria by qualifying (i.e., scoring with acceptable agreement with true scores on Qualifying Sets). After each qualifying set was scored, the Scoring Director responsible for training the item guided the readers in a discussion of the set.

Readers were required to qualify with 70% exact agreement or higher in all three traits (Organization, Idea Development, and Conventions) on one or more of the qualifying sets to score actual student responses. Since readers completed three sets during the qualification process, it was possible that they could qualify on one trait per set to satisfy the qualification requirements. Any reader who did not qualify for all three traits for an item by the end of the qualifying process was not allowed to score actual student work for that item.

The Anchor Set includes three annotated examples for each score point per trait (total of 12 anchor responses per trait). Training Sets 1-3 include 10 unique annotated responses (all three traits are represented in each response). Qualifying Sets 1-3 also include 10 unique annotated responses with all

three traits represented in each response. Note that the full range of score points is represented for each trait across the Training and Qualifying Sets. However, not all score points may be represented for each trait in every Training Set and every Qualifying Set. Annotations for Training and Qualification Sets were provided to readers only after they had scored those sets.

## **Monitoring the Scoring Process**

This section explains the monitoring procedures that DRC uses to ensure that handscoring evaluators follow established scoring criteria while items are being scored. Detailed scoring rubrics, which specify the criteria for scoring, are available for handscoring evaluators for all constructed-response items.

### *Reader Monitoring Procedures*

Throughout the handscoring process, the DRC Scoring Directors reviewed scoring reports that were generated daily. If scoring concerns were apparent among individual readers, Scoring Directors dealt with those issues on an individual basis. DRC Scoring Directors typically monitored one out of ten of each scorer's readings. If a reader appeared to need clarification of the scoring rules, the monitoring rate was increased to one out of five. Further adjustments to that ratio were made as needed. If a supervisor disagreed with a reader's scores during monitoring, they provided retraining in the form of direct feedback to the reader using rubric language and applicable training responses.

## **Validity Sets and Inter-Rater Reliability**

In addition to the feedback that Scoring Directors provided to readers during regular read-behinds and the continuous monitoring of inter-rater reliability and score point distributions, DRC also conducted validity scoring. Validity responses were inserted among the live student responses.

The validity responses were added to DRC's image handscoring system prior to the beginning of scoring. Validity reports compared readers' scores to pre-determined scores and were used to help detect potential room drift and individual reader drift. These data were used to make decisions regarding the retraining and/or release of readers, as well as the rescoring of responses.

Approximately 10% of all live student responses were scored by two readers to establish inter-rater reliability statistics for all constructed-response items. DRC monitored inter-rater reliability based on the responses that were scored by two readers. If a reader fell below the expected rate of agreement, the Scoring Director retrained the reader. If a reader were to fail to improve after retraining and feedback, DRC would have removed the reader from the project and rescored any responses previously scored by that reader.

To monitor inter-rater reliability, DRC produced daily scoring summary reports. DRC's scoring summary reports display exact, adjacent, and nonadjacent agreement rates for each reader. These rates are calculated based on responses that are scored by two readers, and their definitions are included below.

- Percentage Exact (%EX)—total number of responses by reader where scores are the same, divided by the number of responses that were scored twice
- Percentage Adjacent (%AD)—total number of responses by reader where scores are one point apart, divided by the number of responses that were scored twice
- Percentage Nonadjacent (%NA)—total number of responses by reader where scores are more than one score point apart, divided by the number of responses that were scored twice

Each reader was required to maintain a level of exact agreement of at least 70% on validity responses and on inter-rater reliability. Additionally, readers were required to maintain an acceptably low rate of nonadjacent agreement below 4%.

### *Recalibration Sets*

DRC used recalibration sets on an as-needed basis to perform calibration across the entire reader population for an item if trends were detected (e.g., low agreement between certain score points or if a certain type of response was missing from or under-represented in initial training). These recalibrations were designed to help refocus readers on how to properly use the scoring guidelines. They were selected to help illustrate particular points and familiarize readers with the types of responses commonly seen during scoring. After readers scored a recalibration set, the Scoring Director reviewed it with the group, using rubric language and scoring concepts exemplified by the anchor responses to explain the reasoning behind each response's score.

### **Inter-Rater Reliability**

A minimum of 10% of the constructed responses were scored independently by a second reader. These statistics for inter-rater reliability were calculated for all items at all grades starting in 2019. (The 2018 field test responses for grades 3–8 were consensus scored by the rangefinding committees; therefore, automated 10% read behinds were not initiated and inter-rater statistics were not generated until scoring of the 2019 field test administration.) To determine the reliability of scoring, the percentage of perfect agreement and adjacent agreement between the first and second scores was examined.

### **Rangefinding Background**

The spring 2018 administration of grades 3–8 was the first year of field testing for LEAP Connect ELA writing task. As such, there were no examples of previously scored student work available to help inform decision-making in advance of the initial 2018 rangefinding and field test scoring process. Given this lack of earlier scoring precedent, along with the newness of the project to both DRC and LDOE and a low number of anticipated testers (600-1000 testers per grade), DRC proposed convening a modified rangefinding meeting in Baton Rouge, LA in June of 2018. This meeting included multiple committees made up of Louisiana educators and LDOE staff, and the proceedings in each committee room were facilitated by DRC scoring staff. The goal was that this meeting would serve as a combined venue for both the rangefinding and the actual scoring of live student responses from the 2018 LEAP Connect ELA writing task field test for grades 3–8.

### *Pre-Rangefinding/Scoring*

Prior to the rangefinding/scoring committee meetings in Louisiana in June of 2018, DRC had preliminary phone meetings with LDOE to anticipate and discuss questions and possible challenges that might arise during rangefinding and scoring. These phone meetings between DRC and LDOE happened in early spring of 2018, once initial student field test responses were available for DRC to review, enabling DRC to formulate preliminary scoring and policy questions for LDOE's consideration. These discussions were meant to establish "big picture" guidelines and anticipate policy decisions to help guide DRC and ensure a more streamlined and efficient rangefinding/scoring meeting process.

### *Rangefinding/Scoring Meetings*

Rangefinding/Scoring meetings took place in Baton Rouge, LA in 2018 and 2019. The same rangefinding/scoring meeting process established in 2018 for the grades 3–8 ELA writing field test was used again in 2019 for the high school ELA writing field test:

1. Meetings for grades 3–8 took place June 11-15, 2018.
2. The meeting for high school took place June 10-13, 2019.

These dual function rangefinding/scoring meetings enabled DRC to collect:

1. Consensus committee scores for LEAP Connect ELA writing field test responses for grades 3–8 in 2018 and for high school in 2019.
2. Committee recommendations for specific exemplar responses that could be included in the reader training materials (Anchor Sets, Training Sets, and Qualifying Sets) to be developed by DRC and used to train readers prior to additional rounds of field testing in 2019 and 2020, as well as future operational administrations of these items.
3. Committee notes and score rationale used to annotate the reader training materials and impart Louisiana’s scoring decisions and philosophies to readers during training.

### *Rangefinding/Scoring Process*

Each rangefinding committee was composed of five Louisiana educators, LDOE staff, and two DRC scoring staff. The DRC staff consisted of one facilitator per committee to guide the activities of each committee as well as one person assigned to each committee who was responsible for documenting committee consensus scores and notes. Each committee was responsible for rangefinding and scoring field test responses for four open-ended LEAP Connect ELA writing items across two grades (except for the high school committee which was responsible for only one grade and two items). The items were rangefound/scored one item at a time in ascending grade order.

In 2018, three simultaneous grade-band committees met for grades 3–8. The committees met concurrently over the course of five days, rangefinding and scoring responses as follows:

- Grade 3-4 committee – approximately 750 total student responses
- Grade 5-6 committee – approximately 1500 total student responses
- Grade 7-8 committee – approximately 1700 total student responses

In 2019, a single committee for high school met for four days. This committee rangefound and scored approximately 950 total student field test responses.

Committee members were provided with hardcopies of grade- and item-specific scoring materials including rubrics, passages, prompts, additional associated stimuli, and packets of the student field test responses to be discussed and scored.

The grade-band committees worked on one grade at a time, one item at a time, starting with a comprehensive examination and discussion of the rubric, passage(s), prompt, and any other associated stimuli for that item. After completion of this initial review, discussion and scoring of student responses could begin. Each committee member was given an identical set of student responses to score and discuss. There were multiple such sets per item. DRC staff, with LDOE input and assistance, guided the committees through each set of responses, one response at a time, facilitating discussion as needed to procure and document final consensus committee scores and committee rationale for each student response. This process was repeated for all subsequent sets and throughout the week for the remaining items until all field test responses were scored. (Due to time constraints, a small percentage of responses for some items were not committee scored but were later consensus scored by DRC scoring

experts who facilitated the committee meetings and were well-versed with committee scoring ideology.)

Time was built into the meeting schedule to allow for a brief first day, large group orientation session that included all meeting participants. Additional time throughout the meeting process was also used for daily debriefs to check each committee’s progress and for discussion intended to ensure grade-level scoring consistency across committees as well as consistent rubric interpretation/application across committees.

A total of 14 field test items were scored across all grades for ELA writing. The total numbers of reads for the 2018 field test are shown in Exhibit 12, while the inter-rater reliability rates and the total numbers of reads for the 2019 and 2020 field test items are shown in Exhibit 13 and Exhibit 14.

**Exhibit 12. Total Reads, 2018 English Language Arts Writing Field Test Items**

Grade	Item	Trait	Total Reads*
3	956531	Organization	160
		Idea Development	160
		Conventions	160
	956996	Organization	146
		Idea Development	146
		Conventions	146
4	956064	Organization	217
		Idea Development	217
		Conventions	217
	957006	Organization	223
		Idea Development	223
		Conventions	223
5	955836	Organization	296
		Idea Development	296
		Conventions	296
	955846	Organization	314
		Idea Development	314
		Conventions	314
6	955592	Organization	428
		Idea Development	428
		Conventions	428
	955617	Organization	425

		Idea Development	425
		Conventions	425
		Organization	413
7	954190	Idea Development	413
		Conventions	413
		Organization	393
	957013	Idea Development	393
		Conventions	393
		Organization	428
8	950395	Idea Development	428
		Conventions	428
		Organization	428
	957024	Idea Development	428
		Conventions	428
		Organization	428

\*Since the responses for all grades and items in 2018 were consensus scored by rangefinding committees, the 10% read-behind process was not initiated until 2019.

As shown in Exhibit 13, readers demonstrated at least 99% perfect and adjacent agreement for ELA writing constructed-response items in 2019. As shown in Exhibit 14, raters demonstrated 100% perfect and adjacent agreement for ELA writing constructed-response items in 2020. As shown in Exhibit 15, raters demonstrated at least 99% exact and adjacent agreement for ELA writing constructed-response items in 2021.

### Exhibit 13. Total Reads and Inter-Rater Agreement, 2019 English Language Arts Writing Field Test Items

Grade	Item	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
					Ex	Adj	Ex + Adj
3	956531	Organization	299	114	89	11	100
		Idea Development	299	114	91	9	100
		Conventions	299	114	93	7	100
	956996	Organization	288	114	98	2	100
		Idea Development	288	114	96	4	100
		Conventions	288	114	95	5	100
4	956064	Organization	360	130	91	8	99
		Idea Development	360	130	83	17	100
		Conventions	360	130	95	5	100
	957006	Organization	350	112	100	0	100



		Idea Development	350	112	100	0	100
		Conventions	350	112	100	0	100
		Organization	418	152	99	1	100
	955836	Idea Development	418	152	96	4	100
		Conventions	418	152	99	1	100
5		Organization	383	112	96	4	100
	955846	Idea Development	383	112	91	9	100
		Conventions	383	112	100	0	100
		Organization	496	144	93	7	100
	955592	Idea Development	496	144	92	7	99
		Conventions	496	144	96	4	100
6		Organization	502	142	94	6	100
	955617	Idea Development	502	142	99	1	100
		Conventions	502	142	100	0	100
		Organization	560	156	100	0	100
	954190	Idea Development	560	156	100	0	100
		Conventions	560	156	100	0	100
7		Organization	544	136	100	0	100
	957013	Idea Development	544	136	100	0	100
		Conventions	544	136	100	0	100
		Organization	557	152	100	0	100
	950395	Idea Development	557	152	100	0	100
		Conventions	557	152	100	0	100
8		Organization	546	146	100	0	100
	957024	Idea Development	546	146	100	0	100
		Conventions	546	146	100	0	100
		Organization	449	70	100	0	100
	984898	Idea Development	449	70	97	3	100
		Conventions	449	70	100	0	100
HS		Organization	484	78	100	0	100
	996555	Idea Development	484	78	100	0	100
		Conventions	484	78	100	0	100

**Exhibit 14. Total Reads and Inter-Rater Agreement, 2020 English Language Arts Writing Field Test Items**

Grade	Item	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
					Ex	Adj	Ex + Adj
3	956996	Organization	288	114	95	5	100
		Idea Development	288	114	97	3	100
		Conventions	288	114	97	2	99
4	957006	Organization	350	112	100	0	100
		Idea Development	350	112	97	3	100
		Conventions	350	112	100	0	100
5	955836	Organization	418	152	100	0	100
		Idea Development	418	152	98	2	100
		Conventions	418	152	99	1	100
6	955592	Organization	496	144	96	4	100
		Idea Development	496	144	98	2	100
		Conventions	496	144	99	1	100
7	957013	Organization	544	136	98	2	100
		Idea Development	544	136	96	4	100
		Conventions	544	136	99	1	100
8	950395	Organization	557	152	98	2	100
		Idea Development	557	152	96	4	100
		Conventions	557	152	99	1	100
HS	996555	Organization	484	78	99	1	100
		Idea Development	484	78	99	1	100
		Conventions	484	78	99	1	100

**Exhibit 15. Total Reads and Inter-Rater Agreement, 2021 English Language Arts Writing Constructed Response Items**

Grade	Item	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
					Ex	Adj	Ex + Adj
3	956996	Organization	541	162	99	1	100
		Idea Development	541	162	96	4	100
		Conventions	541	162	96	4	100
4	957006	Organization	588	208	100	0	100
		Idea Development	588	208	100	0	100
		Conventions	588	208	100	0	100
5	955836	Organization	643	180	98	1	99
		Idea Development	643	180	98	2	100
		Conventions	643	180	98	2	100
6	955592	Organization	899	218	96	4	100
		Idea Development	899	218	98	2	100
		Conventions	899	218	98	2	100
7	957013	Organization	977	270	96	4	100
		Idea Development	977	270	93	7	100
		Conventions	977	270	95	5	100
8	950395	Organization	1,047	280	98	2	100
		Idea Development	1,047	280	94	6	100
		Conventions	1,047	280	99	1	100
HS	996555	Organization	994	332	100	0	100
		Idea Development	994	332	99	1	100
		Conventions	994	332	100	0	100

### Summary

The information presented in this chapter summarizes the scoring procedures for different types of items and the steps taken by DRC to ensure accuracy in the scoring processes. The inter-rater reliability statistics presented in Section 5.4 demonstrate that the items were scored reliably. These efforts by DRC address multiple best practices of the testing industry but are particularly related to AERA, APA, & NCME (2014) Standards 4.18, 4.20, 6.8, and 6.9:

Standard 4.18—Procedures for scoring and, if relevant, scoring criteria, should be presented by the test developer with sufficient detail and clarity to maximize the accuracy of scoring. Instructions for using rating scales or for deriving scores obtained by coding, scaling, or classifying constructed responses should be clear. This is especially critical for extended-response items such as performance tasks, portfolios, and essays (91).

Standard 4.20—The process for selecting, training, qualifying, and monitoring readers should be specified by the test developer. The training materials, such as the scoring rubrics and examples of test takers' responses that illustrate the levels on the rubric score scale, and the procedures for training readers should result in a degree of accuracy and agreement among readers that allows the scores to be interpreted as originally intended by the test developer. Specifications should also describe processes for assessing reader consistency and potential drift over time in raters' scoring (92).

Standard 6.8—Those responsible for test scoring should establish scoring protocols. Test scoring that involves human judgment should include rubrics, procedures, and criteria for scoring. When scoring of complex responses is done by computer, the accuracy of the algorithm and processes should be documented (118).

Standard 6.9—Those responsible for test scoring should establish and document quality control processes and criteria. Adequate training should be provided. The quality of scoring should be monitored and documented. Any systematic source of scoring errors should be documented and corrected (118).

## Chapter X. Psychometrics

This chapter provides an overview of the psychometric analyses of the LEAP Connect data. The first section presents classical item statistical analyses for the operational items, derived directly from the raw data. The second section shows analyses based on the application of item response theory (IRT) modeling techniques. The IRT section provides a reference to the LEAP Connect Technical Report where an extensive review of the IRT modeling procedures, the process used to establish the LEAP Connect scale, and the methods used for linking and equating the multiple forms can be found.

### Operational Items Classical Statistics

For the 2021 administration, classical item analyses were completed on the operational items. These analyses involve computing a set of statistics based on classical test theory for every item in each form. Each statistic was designed to provide some key information about the quality of each item from an empirical perspective. The statistics estimated for the LEAP Connect are described below.

#### Item difficulty index

- P-value is used to measure the percentage of examinees in the sample answering the item correctly. Desired p-values generally fall within the range of 0.20 to 0.90. For the polytomously scored items, the p-values were calculated by using the summation divided by the maximum score points for the polytomously scored items.

#### Item discrimination index

- Point-biserial correlation was used for a dichotomously scored item and point-polyserial for a polytomously scored item to measure the relationship between examinees' performance on an item and the examinees' total raw score excluding the given item score.

#### Option analysis for dichotomously scored items

- The percentages of examinees who select each of the response options (including omission) were examined.

Exhibit 16 presents the number of scoring items, mean, and standard deviations (SD) of the item difficulty and discrimination indices for each test form at each grade level of the ELA, mathematics, and science. Full statistics for each scoring item, including p-values, item-total correlations, omit rates, and option analyses can be found in Appendix B.

**Exhibit 16. Means and Standard Deviations for Item Difficulty and Discrimination**

Content Area	Grade	Form	N of Items	Item Difficulty		Item Discrimination	
				Mean	SD	Mean	SD
ELA	3	3	31	0.64	0.18	0.36	0.14
	3	3NV	31	0.44	0.15	0.39	0.12
	4	3	32	0.64	0.14	0.36	0.12
	4	3NV	32	0.43	0.14	0.39	0.10
	5	3	32	0.60	0.13	0.36	0.12
	6	3	32	0.67	0.12	0.43	0.11
	7	3	32	0.67	0.12	0.40	0.13
	8	3	32	0.67	0.15	0.38	0.13
	HS	3	31	0.70	0.20	0.42	0.17
Math	3	3	35	0.51	0.10	0.40	0.08
	4	3	35	0.51	0.12	0.34	0.09
	5	3	35	0.52	0.14	0.27	0.09
	6	3	35	0.60	0.12	0.37	0.08
	7	3	35	0.58	0.15	0.36	0.10
	8	3	35	0.57	0.11	0.39	0.08
	HS	3	35	0.56	0.13	0.37	0.10
Science	4	3	30	0.54	0.13	0.29	0.09
	8	3	30	0.62	0.16	0.32	0.10
	HS	3	30	0.60	0.16	0.34	0.12

**IRT Calibration, Equating, and Scaling Process**

Previously, the analyses for LEAP Connect assessment were based on the application of the two-parameter (2PL) IRT model. The original NCSC assessment was administered to eligible students across a consortium of states, thereby including adequate numbers to support the 2PL model. In addition, the same ELA and mathematics forms were administered each year from 2018 to 2020 across all grades, except for grade 7 and high school mathematics tests in 2020. The pre-equated raw-to-scale conversion tables were provided before the test administration for most forms, and post equating was conducted to create the raw-to-scale conversion tables for grade 7 and high school mathematics tests in 2020. For the past three years, the scale scores have been created through linear transformations from the 2PL ability estimates (theta) that correspond to possible raw scores, and the raw-to-scale-score conversion tables were used for operational score reporting.

Beginning in the 2021 testing year, new forms are administered in Louisiana for all content areas (i.e., ELA, mathematics and science). Due to the relatively small numbers of students who will take the LEAP Connect (as few as 500 in a given grade), it is recommended that the underlying IRT model for the LEAP Connect be changed from the 2PL model to the Rasch model.

### **Rasch Calibration**

LEAP Connect items were first calibrated with WINSTEPS (Linacre, 2012) using three-year LEAP Connect data (2018 – 2020) for ELA and mathematics grades 3-8 and high school. Exhibit 17 presents maximum score points and total items by content area, grade, year, and form.

**Exhibit 17. Number of Items and Maximum Score Points**

<b>Content Area</b>	<b>Grade</b>	<b>Year(s)</b>	<b>Form Name</b>	<b>Maximum Score Points</b>	<b>Total Number Scored Items</b>
ELA	3	2018/2019/2020	1/2/1NV/2NV	30	29
	4	2018/2019/2020	1/2/1NV/2NV	31	30
	5	2018/2019/2020	1/2	30	29
	6	2018/2019/2020	1/2	30	29
	7	2018/2019/2020	1/2	29	28
	8	2018/2019/2020	1/2	31	30
	HS	2018/2019/2020	1/2	28	27
Math	3	2018/2019/2020	1/2	35	35
	4	2018/2019/2020	1/2	33	33
	5	2018/2019/2020	1/2	35	35
	6	2018/2019/2020	1/2	35	35
	7	2018/2019/2020	1/2	34	34
	8	2018/2019/2020	1/2	35	35
	HS	2018/2019	1/2	34	34
		2020	1/2	35	35

### ***Data Cleaning Rule***

Records satisfying the following conditions were included in the calibration:

1. Valid Raw score (i.e., raw score  $\geq 0$ , cannot be blank)
2. Response string was not empty
3. Void flag must be blank
4. Test taken flag equals 'Y'
5. Roll up to state equals 'Y'
6. Grades 11 and above are coded as high school

In consideration of the small sample sizes for individual forms and the large number of common items across forms for the same grade and content area, the data from different forms across the three years were combined for a concurrent calibration. A portion of WINSTEPS data is presented in Exhibit 18, as an example.





### Theta Estimation

The sample sizes for the examinees taking the test in 2020 are relatively small, especially at the lower grades which had total sample sizes around 500. Therefore, to achieve more stable results, whenever it was possible all three years of data (n>1500) were used for the analyses. Exhibit 20 provides the sample sizes of the examinees per grade and year (2018-2020).

**Exhibit 20. Sample Distribution**

Content Area	Year	Grade						
		3	4	5	6	7	8	HS
ELA	2018	≥520	≥650	≥650	≥900	≥860	≥920	<10
	2019	≥530	≥630	≥710	≥890	≥990	≥1000	≥930
	2020	≥490	≥560	≥630	≥880	≥920	≥1010	≥940
	Total	≥1550	≥1850	≥2000	≥2680	≥2780	≥2930	≥1870
Math	2018	≥500	≥640	≥640	≥900	≥850	≥910	<10
	2019	≥510	≥620	≥700	≥870	≥980	≥990	≥930
	2020	≥480	≥550	≥620	≥860	≥910	≥1000	≥950
	Total	≥1500	≥1820	≥1970	≥2640	≥2750	≥2910	≥1880

The estimated item parameters were fixed in WINSTEPS for the creation of raw-to-theta conversion tables for each combination of grade, level, and content area. The control card (see Exhibit 21 for example) was based on the previous free run control card with three additional files (IDFILE, IAFILE, and SAFILE). IDFILE was used to indicate whether to keep the items (using a list of '+' and item position) for scoring. The IAFILE and SAFILE included the item parameter estimates from the free run. These fixed calibration runs were separated for each form by grade, content area, and year. The concurrent calibration described previously ensures that the item parameter and theta estimates from different forms for a specific content area and grade are on the same scale. The theta estimates for 2020 test takers were used for the following analyses and the 2021 LEAP Connect standard setting and validation procedure as well.

## Exhibit 21. WINSTEPS Fixed Control File Example

```
&INST
NI=77
TITLE=LEAP ELA 03 2018 1 fix
ITEM1=12
GROUPS=0
XWIDE=1
CODES='-0123456ABCDNU'
DATA=LEAP ELA 03 2018 1 fix.dat
IAFILE=LEAP ELA 03.itm
SAFILE=LEAP ELA 03.stp
IDFILE=LEAP ELA 03 2018 1 fix.del
IFILE=LEAP ELA 03 2018 1 fix.itm
SFILE=LEAP ELA 03 2018 1 fix.stp
ISFILE=LEAP ELA 03 2018 1 fix.isf
SCOREFILE=LEAP ELA 03 2018 1 fix.sco
PFILE=LEAP ELA 03 2018 1 fix.prs
DISFILE=LEAP ELA 03 2018 1 fix.dis
RFILE=LEAP ELA 03 2018 1 fix.res
UDECIM=4
ASCII=Y
BATCH=Y
PTBIS=X
PVALUE=Y
TABLES='00100000000000000000000000000000'
KEY1=BBBAABCACCBAAAAABBABCAABBAACCCBBAAAAABACCABAAAA111111ABCAACACBA111111ABABAAABA
KEY2=*****22222*****22222*****
KEY3=*****33333*****33333*****
+6
+7
+8
+9
+10
+11
+17
+18
+19
+20
+21
+22
+23
+24
+25
+26
+27
+28
+29
+30
+31
+32
```

### **Model Fit**

The LEAP Connect testing program moves from the 2PL to the Rasch model for calibration and estimation. It is necessary to evaluate the model fit based on new model. The item infit and outfit statistics from WINSTEPS were used to evaluate the fit, where the infit and outfit statistics range from 0 to infinity with 1 representing ideal model fit. Items were considered to be misfit if their infit or outfit statistics are outside of the 0.7 to 1.3 range (Wright and Linacre, 1994). Specifically, if the items' fit statistics are greater than 1.3, the items were considered to be "Underfit." If the fit statistics are less than 0.7, the items were considered to be "Overfit." Infit statistics are influenced by unexpected responses from students on items that are measuring near their ability level (Wright and Masters, 1982). Outfit statistics are heavily influenced by unexpected student responses to items that are either relatively easy or relatively hard.

Exhibit 22 and Exhibit 23 summarize the Infit and Outfit statistics and Rasch difficulty of operational items by content area and grade. Note that the average Rasch difficulty values are not comparable across content areas and grades since they are not on the same scale. The average fit values are around 1, which indicates a good fit of the model to the data. For science, the item statistics were based on all items field tested in 2020 since it was the first year of test administration.

The number of misfit items vary across different content areas and grades and, the number of underfit items (Outfit values >1.3) was relatively small. Yen and Fitzpatrick (2006) describe some causes of item misfit, including small sample sizes, poorly estimated item parameters, item stem quality, item mis-keys, and item distractor quality. All of these potential causes were carefully investigated and rectified through processes. Therefore, we are confident that these are not contributing factors in the fit statistics presented above.

Given that other possible sources of item misfit have been carefully addressed, and the Rasch model has been validated for use in assessment with relatively small sample sizes, the use of the Rasch model for LEAP Connect going forward is the best possible choice available.

**Exhibit 22. Rasch Item Infit Statistics**

Content area	Grade	N of Items <sup>5</sup>	Mean Rasch difficulty	Mean Fit	Min Fit	Max Fit	N of Items Misfit (UNDER)
ELA	3	57	0.18	0.98	0.78	1.38	2
	4	56	0.15	0.99	0.78	1.34	2
	5	33	0.18	1.02	0.73	1.44	1
	6	34	0.32	1.02	0.83	1.43	1
	7	34	0.19	1.01	0.83	1.35	1
	8	36	0.08	0.99	0.76	1.27	0
	HS	33	-0.24	0.97	0.81	1.38	1
Math	3	35	-0.06	1.00	0.82	1.22	0
	4	33	-0.20	0.99	0.87	1.11	0
	5	35	-0.05	1.00	0.91	1.13	0
	6	35	0.04	1.00	0.82	1.28	0
	7	34	0.04	1.01	0.88	1.44	1
	8	35	0.03	1.01	0.87	1.24	0
	HS	35	-0.08	0.99	0.81	1.37	1
Science	4	42	0.00	1.01	0.81	1.24	0
	8	42	0.00	1.00	0.85	1.18	0
	HS	42	0.00	1.00	0.81	1.24	0

<sup>5</sup> Note that the column of “N of Items” contains sub-items of the compound items. The sub-items do not contribute to score individually.

**Exhibit 23. Rasch Item Outfit Statistics**

Content area	Grade	N of Items <sup>6</sup>	Mean Rasch difficulty	Mean Fit	Min Fit	Max Fit	N of Items Misfit (OVER)	N of Items Misfit (UNDER)
ELA	3	57	0.18	0.95	0.58	1.55	5	6
	4	56	0.15	0.96	0.68	1.47	1	3
	5	33	0.18	1.00	0.62	1.62	2	2
	6	34	0.32	0.97	0.48	1.68	5	2
	7	34	0.19	0.95	0.54	1.54	6	2
	8	36	0.08	0.93	0.41	1.41	6	1
	HS	33	-0.24	0.87	0.45	1.71	11	3
Math	3	35	-0.06	0.99	0.76	1.27	0	0
	4	33	-0.20	0.97	0.82	1.14	0	0
	5	35	-0.05	0.99	0.82	1.18	0	0
	6	35	0.04	0.98	0.69	1.35	1	1
	7	34	0.04	1.00	0.70	1.69	0	4
	8	35	0.03	0.98	0.74	1.36	0	3
	HS	35	-0.08	0.96	0.75	1.49	0	1
Science	4	42	0.00	1.00	0.75	1.35	0	1
	8	42	0.00	0.98	0.64	1.28	3	0
	HS	42	0.00	0.98	0.61	1.35	3	2

**Scaling**

LDOE conducted standards validation, standard setting, and vertical articulation for all LEAP Connect tests in 2021 (see Chapter XI for details). Later, LDOE decided to establish a new scale system (1200-1290) for LEAP Connect assessment based on the results using two-point method (level 2 cut of 1232 and level 3 cut of 1240) for all grades and content areas.

**Raw to Theta Conversion for Each Form**

The pre-equated item parameters for the 2021 LEAP Connect tests were used to create the test characteristic curve and find the raw-to-theta conversion for each testing form through the aforementioned Rasch model and the IRT true score method.

**Cut Scores on the Theta Metric**

Exhibit 24 includes the cut scores on the theta metric from the vertical articulation in the standards setting and validation process (see Chapter XI for details).

<sup>6</sup> Note that the column of “N of Items” contains sub-items of the compound items. The sub-items do not contribute to score individually.

**Exhibit 24. Cut Scores on the Theta Metric by Content Areas and Grades**

Content Area	Grade	Level 2 Cut	Level 3 Cut	Level 4 Cut
ELA	3	0.0073	0.5570	1.7601
	4	0.0512	0.6037	1.4868
	5	0.0760	0.7027	1.7026
	6	0.5580	1.3759	2.4230
	7	0.5090	1.0964	1.7205
	8	0.1285	1.1801	1.7307
	HS	-0.0556	0.5975	2.1424
Math	3	-0.4112	-0.1712	0.9024
	4	-0.6829	-0.2344	0.4425
	5	-0.5687	-0.1853	0.6136
	6	-0.3635	0.2508	0.8779
	7	-0.5706	-0.1058	0.8589
	8	-0.4326	-0.0995	0.5132
	HS	-0.5387	-0.0300	0.5107
Science	4	-0.5683	0.1019	0.4646
	8	-0.6615	0.0238	0.3876
	HS	-0.4074	0.2132	0.5824

**Scaling Method**

The two-point method for scaling used two RP cut values ( $\hat{\theta}_1$  and  $\hat{\theta}_2$ ) and their corresponding scale scores ( $SS_1$  and  $SS_2$ ) to establish the score scale. The linear transformation was calculated by  $SS = \alpha * \hat{\theta} + \beta$ , where  $\alpha = (SS_2 - SS_1) / (\hat{\theta}_2 - \hat{\theta}_1)$  and  $\beta = SS_1 + \alpha * \hat{\theta}_1$ . Note that for all content areas and grades, the Level 2 scale score cuts were fixed at 1232 and the Level 3 scale score cuts are fixed at 1240 for a best practice. The calculated intercepts and slopes are then applied to the aforementioned raw-to-theta conversions for unrounded scale scores. For the reported scale score, the unrounded scale scores are rounded to the nearest integer numbers with the minimum of 1200 and the maximum of 1290.

The conditional standard error of measurement (CSEM) for the scale score was obtained by  $CSEM = \beta / \sqrt{I_F(\theta)}$ , where  $I_F(\theta)$  is the test information function.

**Results**

The intercepts and slopes are listed in Exhibit 25 and Exhibit 26 contains the scale score cuts. The raw-to-scale conversion tables are included in Appendix G and illustrated in Exhibit 27.

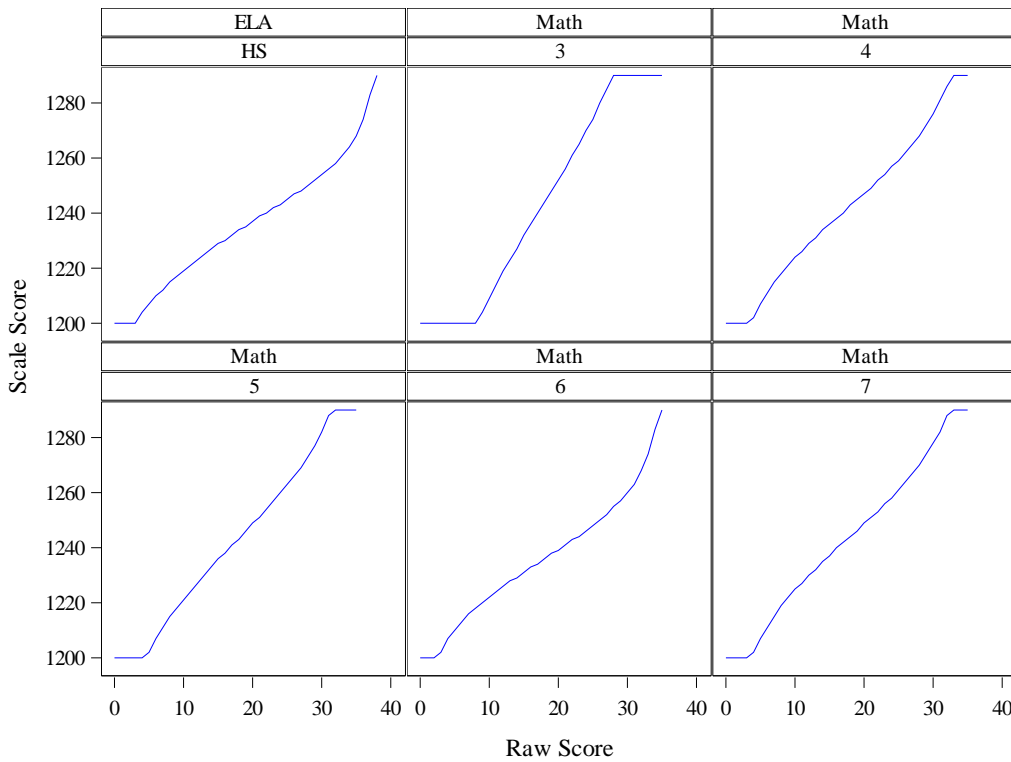
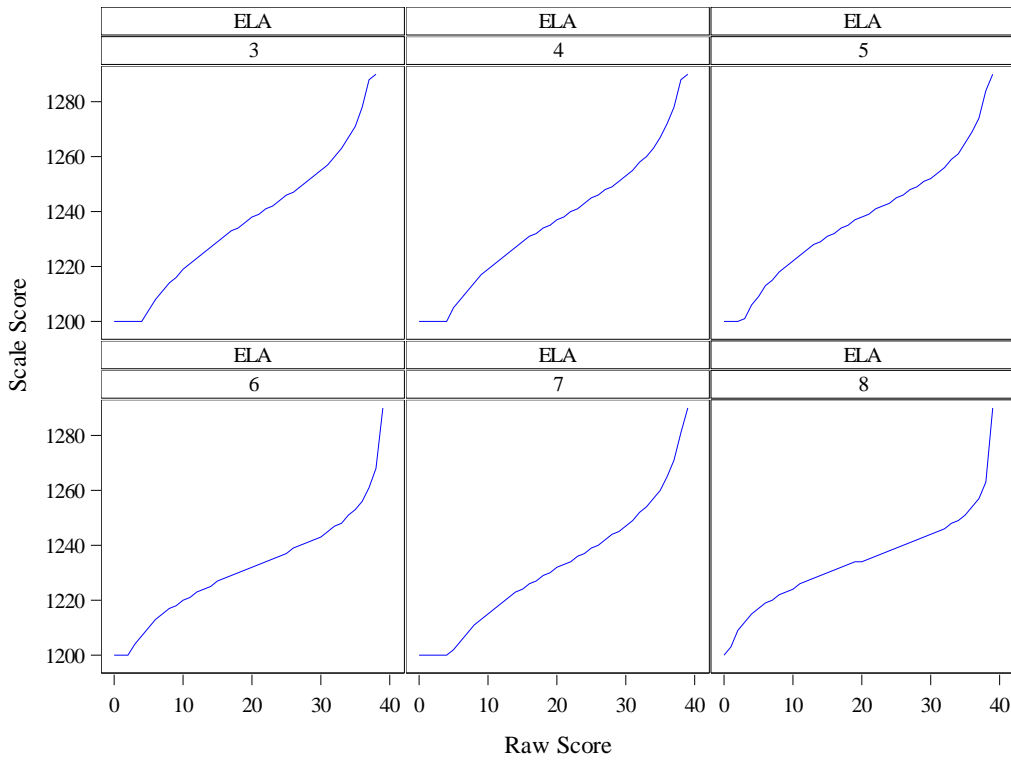
**Exhibit 25. Intercepts and Slopes**

<b>Content Area</b>	<b>Grade</b>	<b>Slope</b>	<b>Intercept</b>
ELA	3	14.553	1231.894
	4	14.480	1231.259
	5	12.765	1231.030
	6	9.781	1226.542
	7	13.619	1225.068
	8	7.607	1231.022
	HS	12.249	1232.681
Math	3	33.333	1245.707
	4	17.837	1244.181
	5	20.866	1243.866
	6	13.023	1236.734
	7	17.212	1241.821
	8	24.017	1242.390
	HS	15.726	1240.472
Science	4	11.937	1238.784
	8	11.674	1239.722
	HS	12.891	1237.252

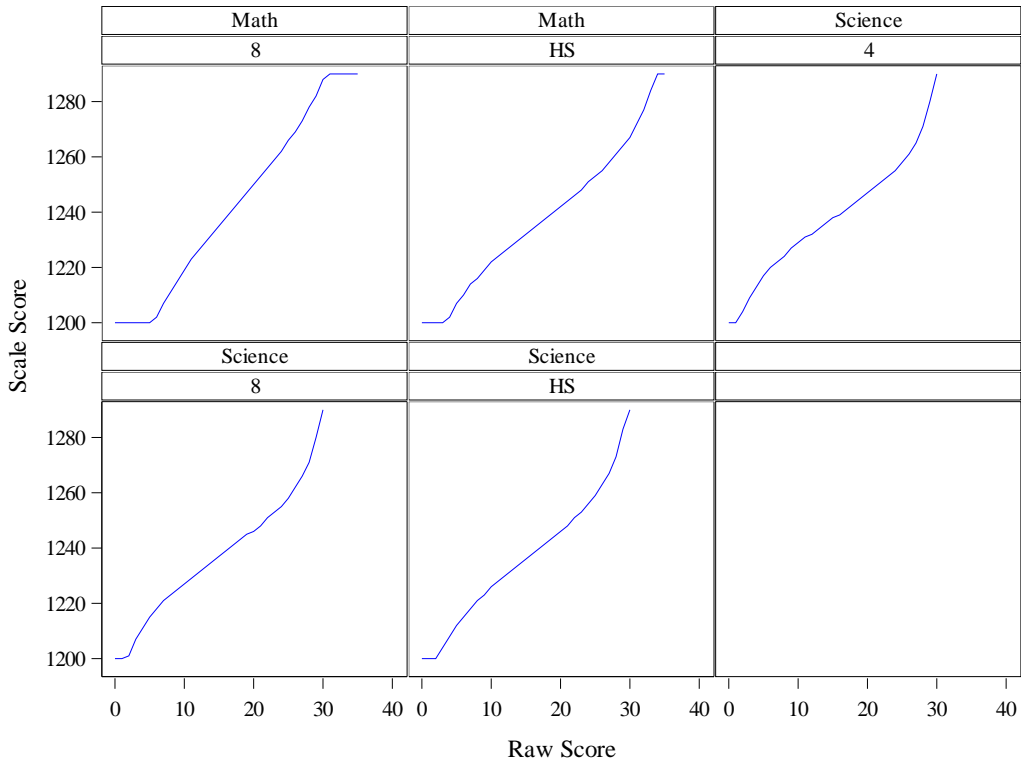
**Exhibit 26. Cut Scores on the Reporting Scale**

<b>Content Area</b>	<b>Grade</b>	<b>Level 2 Cut</b>	<b>Level 3 Cut</b>	<b>Level 4 Cut</b>	<b>Unrounded Level 4 Cut</b>
ELA	3	1232	1240	1258	1257.50919
	4	1232	1240	1253	1252.78697
	5	1232	1240	1253	1252.76400
	6	1232	1240	1250	1250.24184
	7	1232	1240	1248	1248.49983
	8	1232	1240	1244	1244.18866
	HS	1232	1240	1259	1258.92390
Math	3	1232	1240	1276	1275.78667
	4	1232	1240	1252	1252.07402
	5	1232	1240	1257	1256.66980
	6	1232	1240	1248	1248.16669
	7	1232	1240	1257	1256.60413
	8	1232	1240	1255	1254.71510
	HS	1232	1240	1249	1248.50324
Science	4	1232	1240	1244	1244.32945
	8	1232	1240	1244	1244.24690
	HS	1232	1240	1245	1244.75927

**Exhibit 27. Raw-to-Scale Conversions**







### **Evaluation Based on the 2021 Testing Data**

The 2021 LEAP Connect empirical data were used to evaluate the cut scores using the following clean rules:

- Valid Raw score (i.e., raw score  $\geq 0$ , cannot be blank)
- Response string was not empty
- Void flag must be blank
- Test taken flag equals 'Y'
- Roll up to state equals 'Y'
- Hand scoring for ELA was completed
- Grade 11 and above were coded as HS

The obtained raw-to-scale conversion tables were applied to the cleaned data by content area, grade and form. Exhibit 28 contains the descriptive statistics for the scale scores from the 2021 testing data.

**Exhibit 28. Descriptive Statistics for the Scale Scores for 2021 Testing Data**

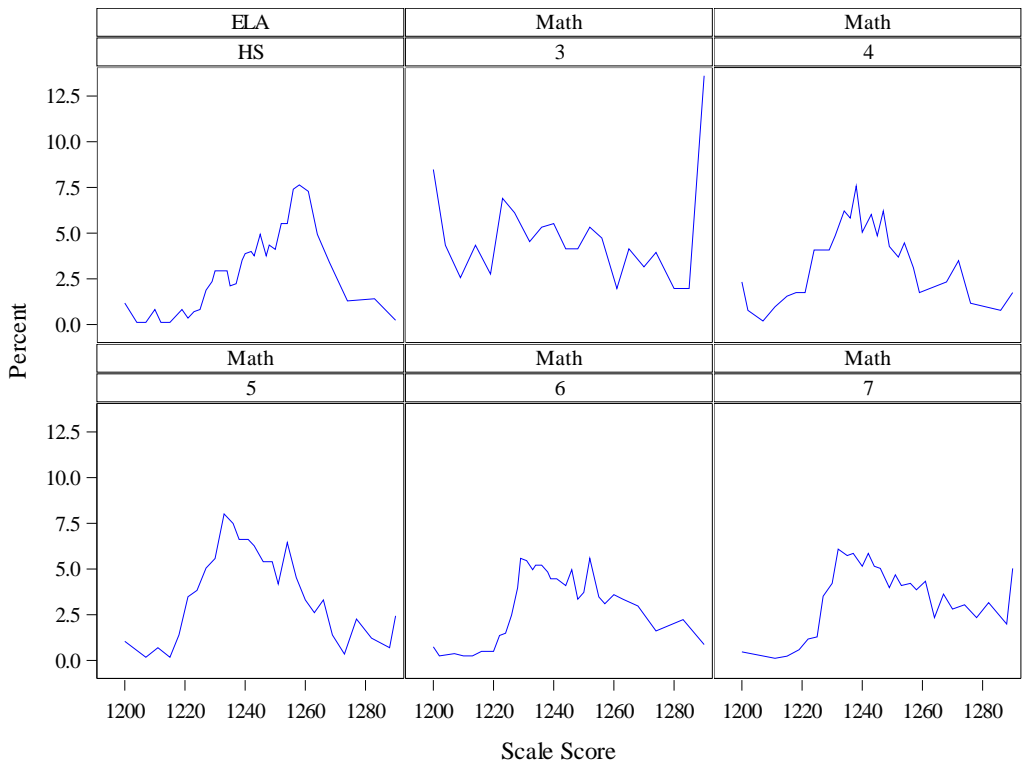
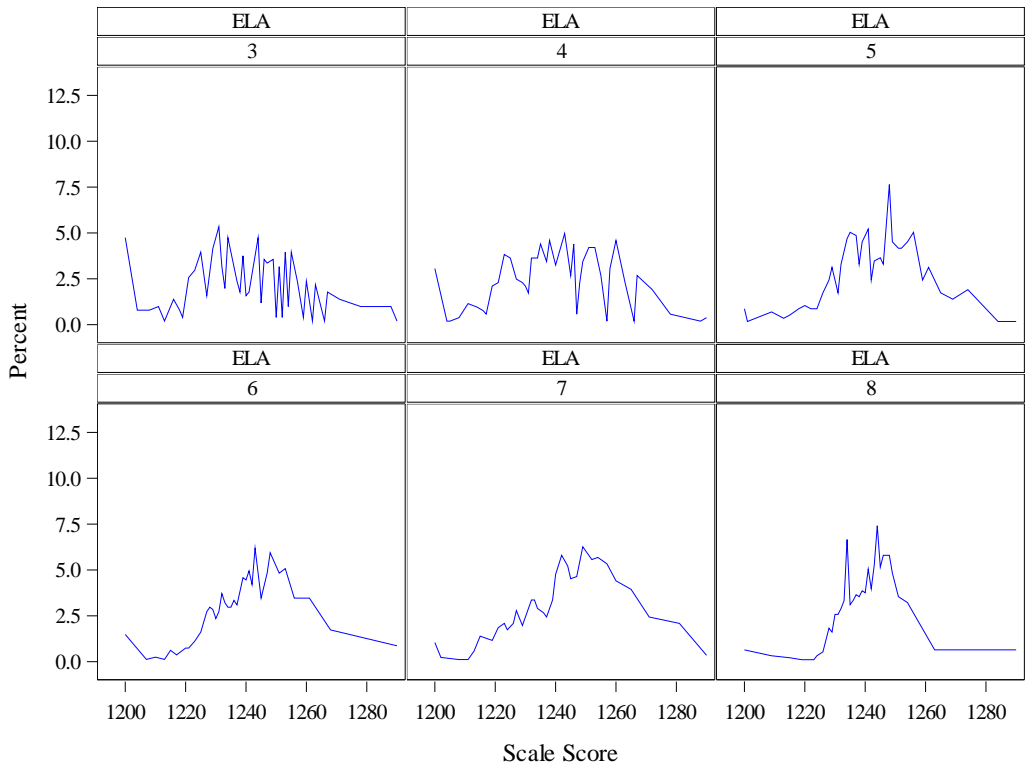
Content Area	Grade	Count	Mean	SD	Min	Median	Max
ELA	3	≥500	1239.14	17.05	1200	1239	1290
	4	≥520	1240.13	16.23	1200	1240	1290
	5	≥570	1243.13	13.02	1200	1243	1290
	6	≥800	1240.04	12.56	1200	1240	1290
	7	≥860	1242.85	15.14	1200	1244	1290
	8	≥930	1240.79	9.28	1200	1241	1290
	HS	≥850	1247.42	14.38	1200	1248	1290
Math	3	≥500	1244.11	28.64	1200	1240	1290
	4	≥510	1242.41	17.74	1200	1240	1290
	5	≥570	1244.23	17.00	1200	1241	1290
	6	≥800	1242.85	15.13	1200	1241	1290
	7	≥850	1250.79	18.50	1200	1246	1290
	8	≥920	1250.97	23.65	1200	1247	1290
	HS	≥840	1242.51	17.21	1200	1240	1290
Science	4	≥500	1239.97	11.20	1200	1238	1280
	8	≥910	1244.64	12.60	1200	1245	1290
	HS	≥850	1242.54	13.63	1200	1244	1290

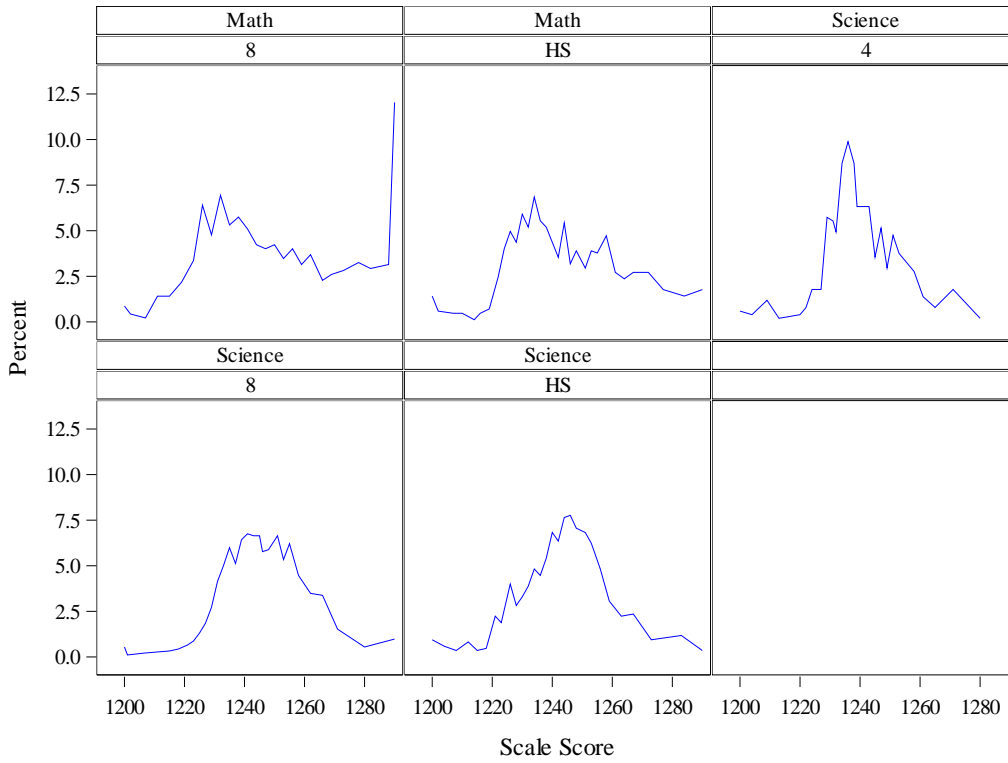
Exhibit 29 shows the percentage of students in each performance level. Note that relatively large changes were found for Level 3 for ELA HS and Level 4 for ELA grades 3 and 4 as compared to the 2020 released results, which might be due to the updated cut scores. Exhibit 30 shows the score distribution for the newly created scale scores.

**Exhibit 29. Percentage of Students in Performance Levels for 2021 Testing Data**

Content Area	Grade	Below Goal (%)	Near Goal (%)	At Goal (%)	Above Goal (%)
ELA	3	30.63	20.95	37.75	10.67
	4	27.72	19.69	29.64	22.94
	5	15.28	25.69	38.54	20.49
	6	22.65	23.89	34.03	19.43
	7	20.88	18.10	24.94	36.08
	8	12.14	30.40	18.05	39.42
	HS	12.81	13.75	54.88	18.57
Math	3	35.50	9.86	37.08	17.55
	4	26.41	19.61	26.41	27.57
	5	21.43	22.13	34.32	22.13
	6	23.70	24.69	17.74	33.87
	7	11.59	17.68	38.17	32.55
	8	21.04	18.00	21.04	39.91
	HS	25.97	22.79	20.43	30.81
Science	4	18.38	38.54	12.65	30.43
	8	13.18	22.55	13.40	50.87
	HS	17.76	18.59	20.82	42.82

**Exhibit 30. Score Distribution for the Newly Created Scales**





## Field-Test Classical Item Statistics

Classical item analyses were conducted on the items field-tested during the 2021 administration. The field test results are summarized in Appendix H. Any item with values outside pre-established limits received an appropriate annotation (flag). Due to the structure of the assessments, complexity or tier reversals were also considered. The flagging criteria based on item statistics are as follows:

1. Item Difficulty:
  - P-value < 0.50 for Tier 1 items. Tier 1 items are at the lowest complexity level, there are only two answer choices. If the p-value is less than 0.50 for this type of item, the item is flagged.
  - P-value < 0.33 for Tiers 2–4 items. For items at complexity levels 2–4, there are three answer choices. The value of 0.33 is the chance level and corresponds to the 0.25 criterion LDOE uses when flagging 4 option items.
  - P-value > 0.90
2. Point-biserial (Pb):
  - Items with negative point-biserial correlations.
3. Complexity reversal:
  - Items harder at the lowest level of complexity (Tier 1) than at the highest level of complexity (Tier 4). If a Tier 1 test item has a smaller p-value than a Tier 4 test item in the same form, then both items will be flagged.
4. Distractor analysis: Proportion selecting distractor greater than proportion selecting key
  - Items were flagged for a distractor and reviewed at item data review when statistics for the answer choices revealed that students were being drawn to a distractor more often than to the correct response. Items with two possible correct responses were flagged when the proportion of a distractor was similar or higher than the p-value of the correct response. This could indicate a mis-key (correct response not correctly noted), a second possible correct response, or a distractor with elements of a correct response.

## **Chapter XI. Standard Setting**

On June 21-24, 2021, LDOE conducted standards validation, standard setting, and vertical articulation for all LEAP Connect tests, through a contract with Measurement Incorporated (MI) and edCount. Cut scores for all ELA tests and mathematics tests for grades 3-8 underwent standards validation. Standard setting was conducted for all science tests and the high school mathematics test. Finally, cut scores for all tests were reviewed in a vertical articulation activity and submitted to LDOE for final review. A detailed account of the LEAP Connect standard setting can be found in Appendix I.

## Chapter XII. Reliability

The reliability of raw scores by test form was evaluated using Cronbach's coefficient alpha (Cronbach, 1951), which is a lower-bound estimate of test reliability. The reliability coefficient is a ratio of the variance of true test scores to the variance of the total observed scores, with the values ranging from 0 to 1. The closer the value of the reliability coefficient is to 1, the more consistent the scores, where 1 refers to a perfectly consistent test. In general, reliability coefficients that are equal to or greater than 0.8 are considered acceptable for tests of moderate length.

Cronbach's coefficient alpha was computed using the formula

$$\alpha = \frac{n}{n-1} \left[ 1 - \frac{\sum_{i=1}^n \sigma_i^2}{\sigma_x^2} \right],$$

where  $n$  is the number of items on the test,  $\sigma_i^2$  is the variance of item  $i$ , and  $\sigma_x^2$  is the variance of the total test score.

Total test reliability measures indicate the consistency of performance over repeated administrations. The number of items in the test influences these statistics; a longer test can be expected to be more reliable than a shorter test. The reliability coefficients of 2021 testing are reported in Appendix J. The reliability statistics ranged from 0.84 to 0.88 for all ELA forms. For mathematics, the reliabilities ranged from 0.78 to 0.89. For science, the reliability values were from 0.76 to 0.83 for all the forms and grades. It can be observed that for some testing forms (e.g. Mathematics grade 5), the reliabilities are slightly lower than 0.8, which might be caused by the relatively smaller standard deviations of the raw scores given that the SEM values were in a reasonable range (see Exhibit 31).



**Exhibit 31. Reliability and SEM of 2021 Testing**

Content Area	Grade	Form	N of Items	Cronbach's Alpha	SEM	N of Students	Raw Score Mean	Raw Score SD
ELA	3	3	31	0.84	2.85	≥290	24.39	7.20
		3NV	31	0.87	2.87	≥200	15.95	7.85
	4	3	32	0.85	2.92	≥360	24.55	7.47
		3NV	32	0.87	2.86	≥150	15.77	8.01
	5	3	32	0.85	2.98	≥570	23.36	7.71
	6	3	32	0.88	2.80	≥800	25.86	8.22
	7	3	32	0.87	2.82	≥860	26.16	7.87
	8	3	32	0.86	2.80	≥930	25.95	7.43
HS	3	31	0.87	2.71	≥850	25.71	7.44	
Math	3	3	35	0.89	2.62	≥500	17.92	7.80
	4	3	35	0.85	2.67	≥510	17.71	6.90
	5	3	35	0.78	2.71	≥570	18.16	5.83
	6	3	35	0.86	2.58	≥800	21.17	7.01
	7	3	35	0.86	2.57	≥850	20.33	6.86
	8	3	35	0.88	2.61	≥920	20.04	7.45
	HS	3	35	0.87	2.61	≥840	19.59	7.11
	Science	4	3	30	0.78	2.50	≥500	16.11
8		3	30	0.81	2.36	≥910	18.54	5.42
HS		3	30	0.82	2.36	≥850	17.88	5.64

### Reliability for Subgroups

Reliability estimates for demographic groups based on gender, ethnicity/race, economically disadvantaged status, English Learner status, and migrant status were computed and reported in Appendix J for groups with 10 or more students. Results show fairly high reliability indices for all populations which indicates that the LEAP Connect assessments are reliable for both population and subpopulations.

### Classification Accuracy and Consistency

Classification accuracy is defined as the extent to which the actual classifications of test takers into various achievement levels agree with classifications made on the basis of their true scores (Livingston & Lewis, 1995). Classification consistency is defined as the extent to which the classifications of students in an achievement level agree based on two independent test administrations or one administration of two parallel test forms.

The Livingston-Lewis procedure utilizes a beta-binomial model that requires two steps: (1) fitting proportion-correct true scores to a four-parameter beta distribution and (2) using the binomial distribution to estimate classification accuracy and consistency. All calculations for decision accuracy and consistency are based on census data. Cohen's coefficient kappa (Cohen, 1960) assesses the

proportion of consistent classifications after removing the proportion of consistent classifications that would be expected by chance.

Classification consistency and accuracy are presented in Exhibit 32. Two-Level refers to classifications into the two classes of At or Above Goal and Below Goal, and Four-Level refers to classifications into four levels of Below Goal, Near Goal, At Goal and Above Goal. The classification consistency and accuracy measures might be influenced by several key features of the test design, including the number of items, the location and number of cut scores, the score distribution, and the reliability and associated standard error of measurement (SEM).

**Exhibit 32. Classification Accuracy and Consistency**

Content Area	Grade	Form	Two-Level			Four-Level		
			Accuracy	Consistency	Kappa	Accuracy	Consistency	Kappa
ELA	3	3	0.87	0.82	0.61	0.70	0.60	0.42
		3NV	0.77	0.73	0.28	0.63	0.57	0.32
	4	3	0.87	0.82	0.60	0.67	0.57	0.41
		3NV	0.87	0.82	0.48	0.68	0.62	0.37
	5	3	0.88	0.84	0.66	0.69	0.58	0.42
	6	3	0.89	0.84	0.68	0.70	0.60	0.46
	7	3	0.87	0.82	0.63	0.66	0.57	0.42
	8	3	0.88	0.83	0.65	0.70	0.61	0.45
	HS	3	0.91	0.87	0.68	0.73	0.63	0.43
Math	3	3	0.84	0.77	0.53	0.63	0.53	0.33
	4	3	0.86	0.81	0.61	0.63	0.54	0.39
	5	3	0.83	0.76	0.52	0.59	0.50	0.32
	6	3	0.87	0.82	0.64	0.65	0.57	0.41
	7	3	0.81	0.75	0.42	0.61	0.54	0.35
	8	3	0.81	0.73	0.44	0.58	0.52	0.34
	HS	3	0.87	0.82	0.63	0.63	0.55	0.39
Science	4	3	0.84	0.78	0.56	0.61	0.52	0.34
	8	3	0.86	0.80	0.57	0.67	0.59	0.37
	HS	3	0.87	0.81	0.60	0.65	0.57	0.38

## Chapter XIII. Reporting, Interpretation, and Use of Scores

Each student who took the LEAP Connect assessments received an individual report detailing:

- content performance score;
- content achievement level; and
- content-specific achievement-level descriptors (ALDs).

This information indicated if a student “passed.” If the ALDs were used to interpret the level, specifics regarding the student’s ability to perform certain skills in ELA and mathematics were also provided (see Appendix K for the Policy Level Descriptors and Achievement Level Descriptors for all grades and content areas). Results are used to make instructional decisions, decide what supports are needed for additional learning, and accountability reporting. Descriptions of the student scores are provided and their appropriate uses found in the [Interpretive Guide: LEAP Connect](#).

The following reports are provided to Louisiana schools and districts for LEAP Connect assessments:

- Student Report
- School Roster Report

The reports are made available online in May on DRC’s eDIRECT Assessment Portal to be downloaded and printed by the school system and school. Examples of the reports can be found in the [Interpretive Guide: LEAP Connect](#).

## Chapter XIV. Validity

Validity is the process of collecting evidence to support inferences by using the resulting scores from an assessment. In addition to showing reliability for the purpose for which assessment results are intended, results must show evidence of validity.

The Standards for Educational & Psychological Testing (AERA, APA, & NCME, 2014) note that validity evidence is primarily based on five factors:

- Test content
- Response processes
- Internal structure
- Relationships to other variables
- Consequences of testing

Validity evidence is created throughout the entire assessment process, from the design of the test to item development to score reporting. Therefore, evidence of validity is found throughout this report. For example, evidence of content validity can be found in the Test Content section where the constructs of the tests are discussed, and validity evidence regarding the consequences of the testing can be found in the Reporting section where information on the proper use of scores is addressed. Validity evidence based on internal structure is presented in the Classical Item Analyses and Reliability sections. Additional pieces of validity are presented in this section.

### Evidence Based on Test Content

A test that shows evidence of content validity would contain items that represent the intended domain and cover a suitable range of tasks relevant to that domain. A content-valid test of English language arts needs items with which an examinee can demonstrate their ability to read and write, while a content-valid test of mathematics needs items with which an examinee can demonstrate their ability to perform various computational tasks.

According to Standard 1.11, “When the rationale for test score interpretation for a given use rests in part on the appropriateness of test content, the procedures followed in specifying and generating test content should be described and justified with reference to the intended population to be tested and the construct the test is intended to measure or the domain it is intended to represent” (AERA, APA, & NCME, p. 26). Test specifications for each section of the test were developed by edCount to determine a balance of ELA and mathematics items that would best demonstrate the ability of LEAP Connect examinees. The items were then developed based on these specifications. These items went through various checks and reviews by content matter experts to ensure their suitability for a test geared toward students with cognitive disabilities, as well as their measurement of the intended domain. Experts also reviewed the items’ distractors to ensure that only the keyed response would be an appropriate answer.

As discussed in the Test Content section of this report, items were designed and reviewed specifically for the target testing audience for each grade level (NCSC, 2016).

### Evidence Based on Response Processes

Test validity also depends on allowing for adequate response processes from all examinees. Analyzing response processes is necessary for guaranteeing that examinees can respond to the test content as

intended. Standard 1.12 states, “If the rationale for score interpretation for a given use depends on premises about the psychological processes or cognitive operations of test takers, then theoretical or empirical evidence in support of those premises should be provided” (AERA, APA, & NCME, p. 26).

The LEAP Connect assessments draw from the work completed by the National Center and State Collaborative (NCSC) alternate assessment consortium. NCSC’s theory of action (ToA) and interpretive argument (IA) center around the belief that assessments for students with significant cognitive disabilities should support the same goal as general assessments: to help ensure that students leave high school ready to meaningfully participate in college, careers, and their communities (see NCSC Brief Number 9). The answers to the ToA help evaluate the purpose of the assessment and provide information to identify high-value skill targets in content area, providing focal points for the development of tasks and test forms. The process provided by the ToA leads to processes for bringing about the intended goals of the assessment results. Please refer to Chapter III for the details of the ToA and related validity evidence.

### **Evidence Based on Internal Structure**

Internal structure validity is defined as “the degree to which the relationships among test items and test components conform to the construct on which the proposed test score interpretations are based” (AERA, APA, & NCME, 2014, p. 16). Validity evidence based on internal structure is presented in the Classical Item Analyses and Reliability sections of this report.

### **Dimensionality and Local Independence**

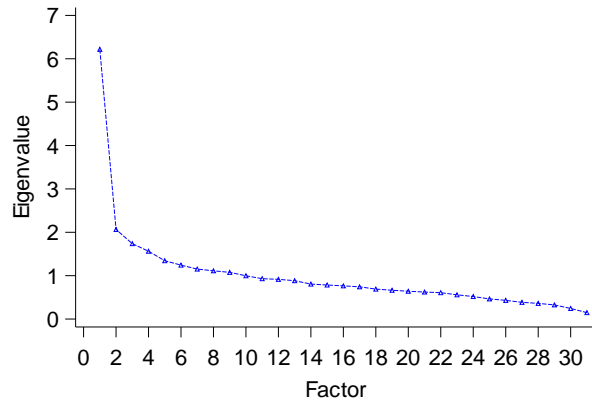
Exploratory Factor Analysis was used to evaluate the unidimensionality assumption of the IRT model. The Scree plots display the obtained eigenvalues against the number of factors in the descending order (see Exhibit 33; Cattell, 1966). Many forms showed the “elbow” appears not right after the first factor, indicating that a multi-factor model might fit the data better.

Exhibit 34 presents the eigenvalues and the percent of variance explained for up to five factors with eigenvalues greater than one. For most of the tests, the primary dimension explained more than 17% of the total variance. Multi-factor models showed improvements on model fit for some grades and content areas. The results were similar to those in the National Center and State Collaborative 2015 Operational Assessment Technical Manual (NCSC, 2016).

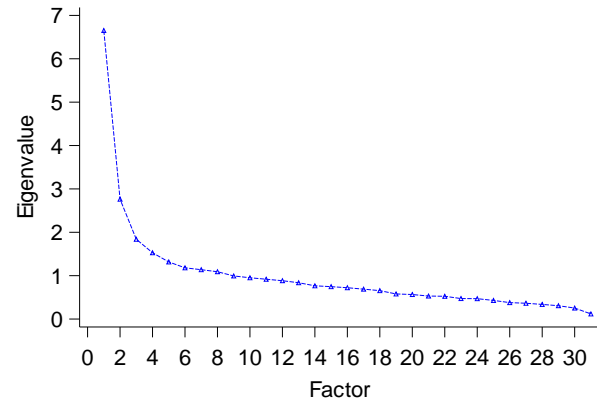
Local independence is another fundamental assumption of IRT, and it indicates that no relationship should exist between examinees’ responses to different items after accounting for the abilities measured by a test. In other words, the probability of answering an item correctly is affected only by the item’s characteristics and student proficiency. Evaluation of local independence starts during item development. As long as all test items are written so that they do not depend on the responses to other items, local independence is assured. During test construction, all items on a test are reviewed to ensure neither the items nor the answers clue students to other items on that test (NCSC, 2016).

**Exhibit 33. Scree Plots of Eigenvalues Against Factors**

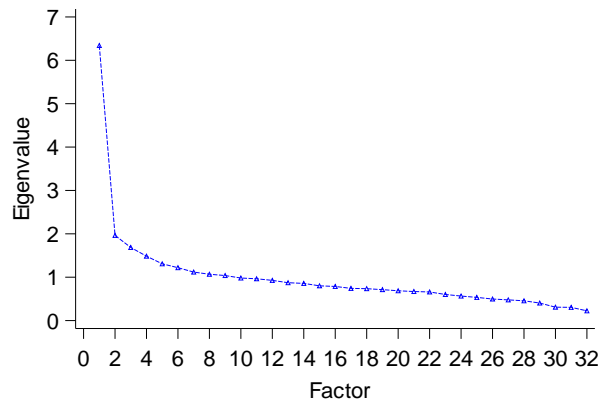
**ELA Grade 3 Form 3**



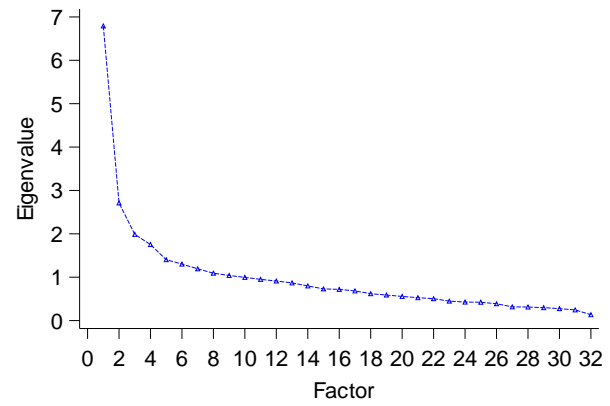
**ELA Grade 3 Form 3NV**



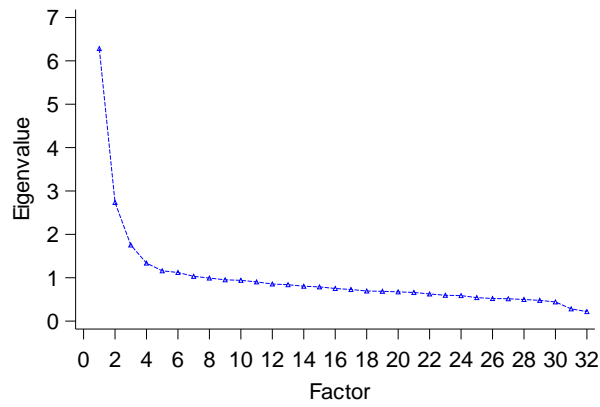
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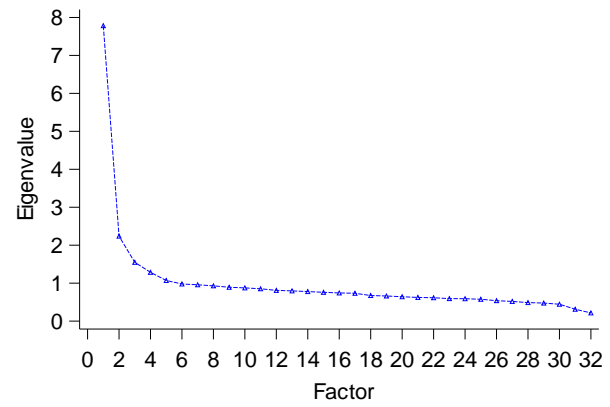
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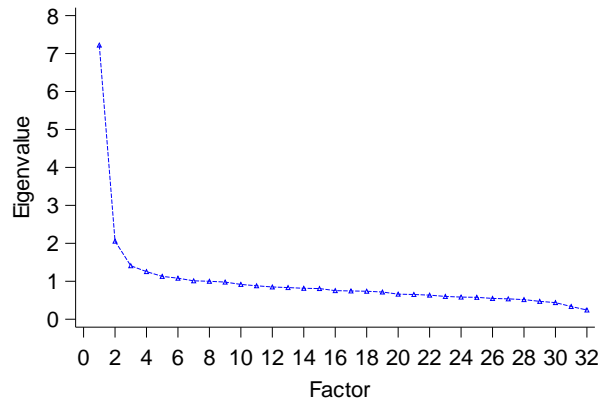
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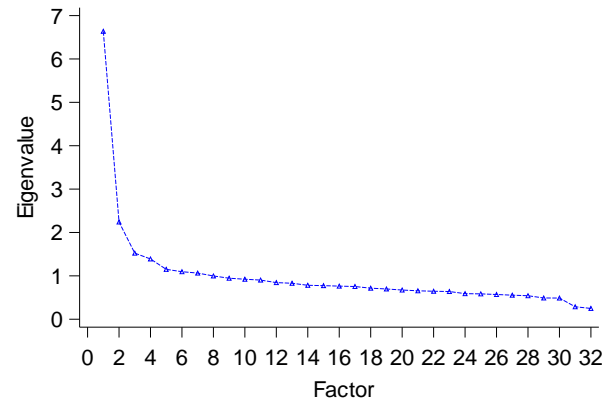
**ELA Grade 6 Form 3**



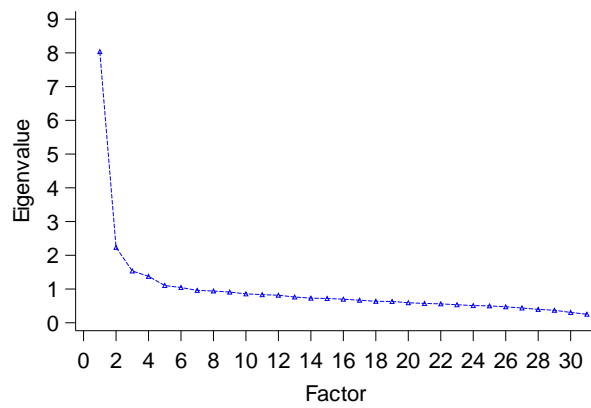
**ELA Grade 7 Form 3**



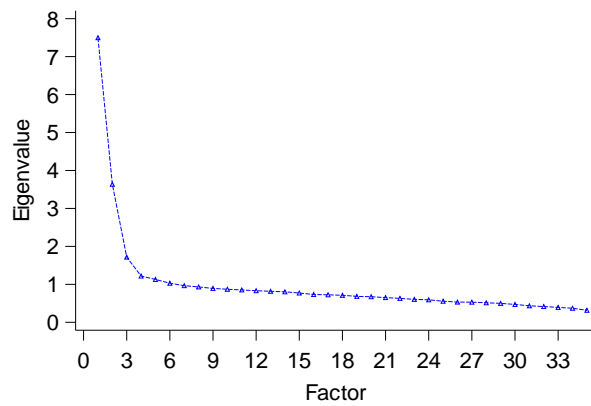
**ELA Grade 8 Form 3**



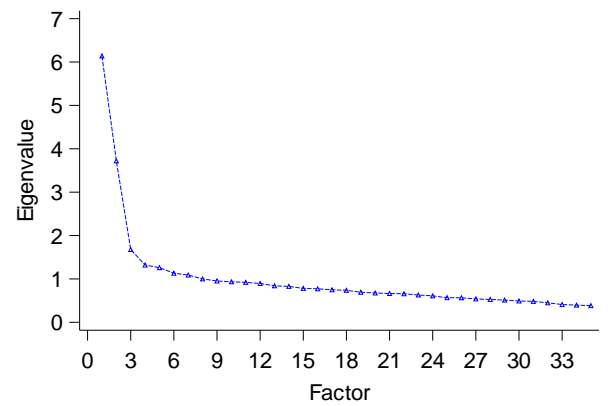
**ELA HS Form 3**



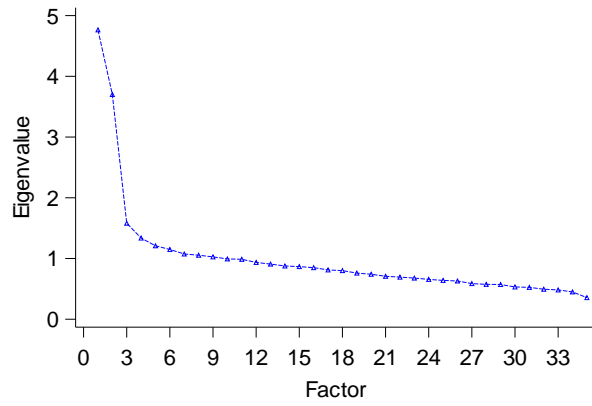
**Math Grade 3 Form 3**



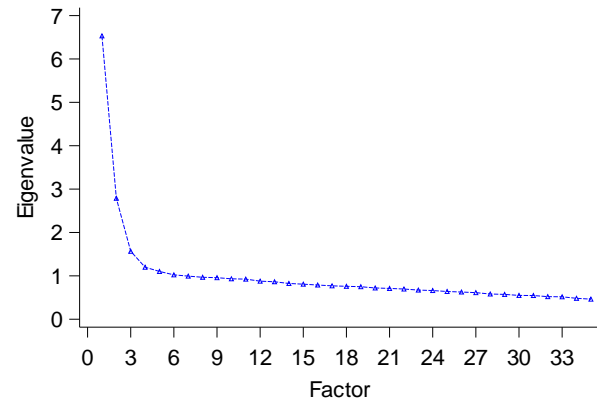
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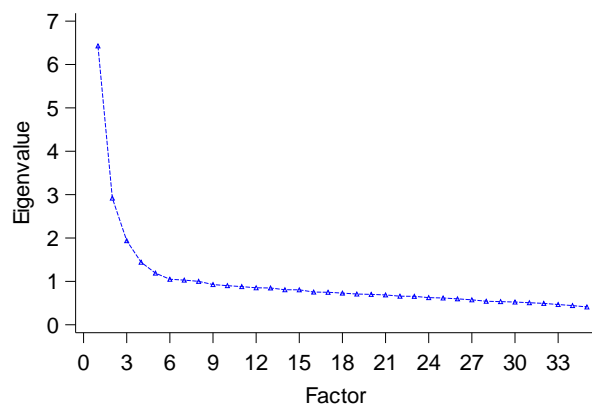
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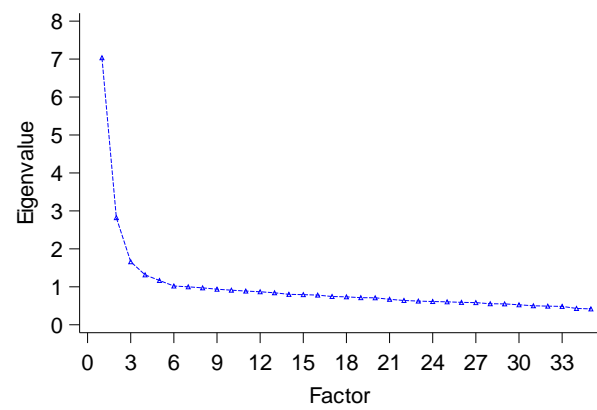
**Math Grade 6 Form 3**



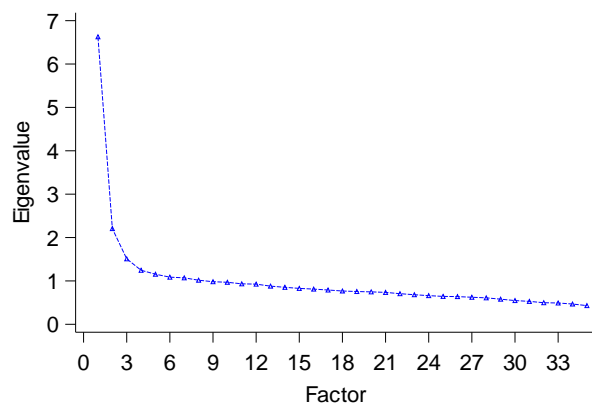
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**Math Grade 8 Form 3**

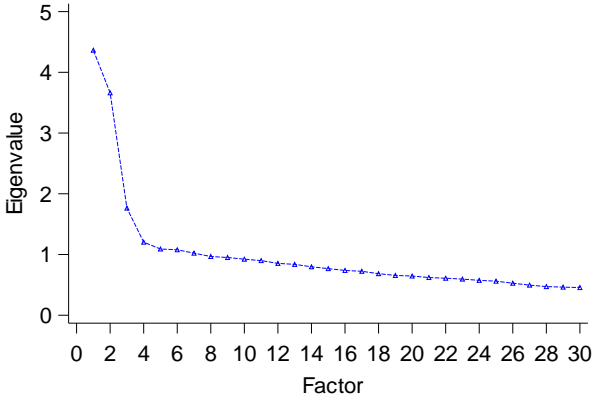


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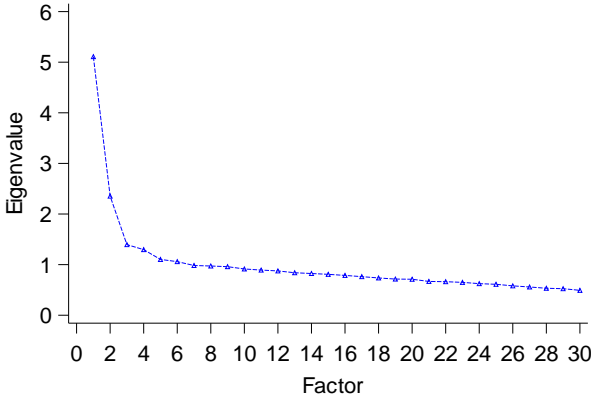




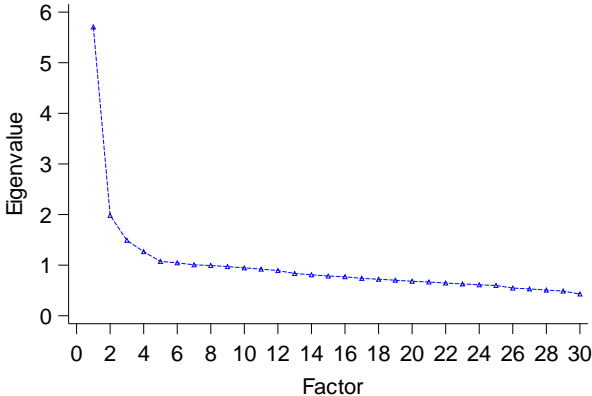
**Science Grade 4 Form 3**



**Science Grade 8 Form 3**



**Science HS Form 3**



**Exhibit 34. Eigenvalue and Percent of Variance Explained**

Content Area	Grade	Form	Index	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
ELA	3	3	Eigenvalue	6.22	2.07	1.74	1.56	1.34
			Percent	20.06%	6.66%	5.61%	5.04%	4.34%
		3NV	Eigenvalue	6.65	2.76	1.84	1.53	1.32
			Percent	21.46%	8.91%	5.93%	4.93%	4.25%
	4	3	Eigenvalue	6.34	1.96	1.69	1.48	1.31
			Percent	19.82%	6.14%	5.27%	4.64%	4.09%
		3NV	Eigenvalue	6.79	2.71	1.99	1.75	1.4
			Percent	21.23%	8.47%	6.21%	5.48%	4.39%
	5	3	Eigenvalue	6.28	2.73	1.76	1.34	1.16
			Percent	19.63%	8.55%	5.48%	4.18%	3.62%
	6	3	Eigenvalue	7.78	2.24	1.55	1.29	1.07
			Percent	24.32%	7.00%	4.84%	4.02%	3.34%
	7	3	Eigenvalue	7.22	2.06	1.41	1.25	1.13
			Percent	22.57%	6.43%	4.40%	3.92%	3.53%
8	3	Eigenvalue	6.64	2.24	1.52	1.39	1.15	
		Percent	20.74%	7.01%	4.76%	4.34%	3.59%	
HS	3	Eigenvalue	8.04	2.23	1.54	1.38	1.1	
		Percent	25.92%	7.21%	4.95%	4.44%	3.56%	
Math	3	3	Eigenvalue	7.5	3.64	1.72	1.22	1.13
			Percent	21.42%	10.39%	4.91%	3.48%	3.23%
	4	3	Eigenvalue	6.14	3.72	1.68	1.32	1.26
			Percent	17.54%	10.63%	4.79%	3.77%	3.60%
	5	3	Eigenvalue	4.76	3.7	1.58	1.34	1.21
			Percent	13.61%	10.57%	4.52%	3.82%	3.45%
	6	3	Eigenvalue	6.53	2.79	1.57	1.2	1.1
			Percent	18.66%	7.97%	4.48%	3.43%	3.15%
	7	3	Eigenvalue	6.43	2.92	1.94	1.44	1.19
			Percent	18.37%	8.34%	5.54%	4.12%	3.40%
8	3	Eigenvalue	7.04	2.82	1.66	1.32	1.17	
		Percent	20.10%	8.06%	4.74%	3.76%	3.33%	
HS	3	Eigenvalue	6.63	2.21	1.51	1.25	1.15	
		Percent	18.94%	6.30%	4.31%	3.56%	3.30%	
Science	4	3	Eigenvalue	4.36	3.66	1.76	1.2	1.09
			Percent	14.55%	12.21%	5.88%	4.01%	3.64%
	8	3	Eigenvalue	5.11	2.35	1.4	1.3	1.1
			Percent	17.03%	7.85%	4.65%	4.32%	3.68%
	HS	3	Eigenvalue	5.71	1.98	1.49	1.27	1.07
			Percent	19.02%	6.61%	4.97%	4.22%	3.58%

## Evidence Based on Consequences of Testing

Standard 1.25 states, “When unintended consequences result from test use, an attempt should be made to investigate whether such consequences arise from the test’s sensitivity to characteristics other than those it is intended to assess or from the test’s failure to fully represent the intended construct” (AERA, APA, & NCME, pp. 30-31). Hence, evidence based on consequences of testing will come from future research into how LEAP Connect results are used to impact or influence the classroom environment of students, including changes to curriculum and classroom assessments (Lane & Stone, 2002).

## Differential Item Functioning

Care should be taken to ensure that the LEAP Connect assessments are fairly measuring the performance of all population groups. Mantel-Haenszel procedure (MH; Holland & Thayer, 1988) was used for analysis of differential item functioning (DIF). Specifically, the MH delta difference ( $\Delta$ MH DIF), which measures the magnitude of the difference between two groups, was used to classify items into one of the three categories (see Exhibit 35): A (Negligible DIF), B (intermediate DIF), or C (large DIF) according to the criteria developed by Educational Testing Service (e.g., Holland & Thayer, 1988; Zieky, 1993; Zwick, 2012; Zwick & Kadriye, 1989; Zwick, Thayer, & Mazzeo, 1997). For the polytomously scored items, the extension of the MH procedure (Mantel Chi-square) with the standardized mean difference (SMD) was used to evaluate the magnitude of DIF (e.g., Dorans & Schmitt, 1991; Zwick, 1993).

### Exhibit 35. DIF Criteria

DIF Category	Dichotomously Scored Items	Polytomously Scored Items
A (Negligible)	Nonsignificant MH-D Chi-square statistic ( $p \geq 0.05$ ) or $ \Delta$ MH DIF $< 1.0$	Nonsignificant Mantel Chi-square ( $p \geq 0.05$ ) or $ \text{SMD}/\text{SD}  \leq 0.17$
B (Slight to moderate)	Significant MH-D Chi-square ( $p < 0.05$ ) and $1.0 \leq  \Delta$ MH DIF $< 1.5$	Significant Mantel Chi-square ( $p < 0.05$ ) and $0.17 <  \text{SMD}/\text{SD}  \leq 0.25$
C (Moderate to large)	Significant MH-D Chi-square ( $p < 0.05$ ) and $ \Delta$ MH DIF $\geq 1.5$	Significant Mantel Chi-square ( $p < 0.05$ ) and $ \text{SMD}/\text{SD}  > 0.25$

DIF analyses for items were conducted based on gender and ethnicity, as shown in Exhibit 36. Sample sizes for other subgroups of examinees were not large enough for valid DIF analysis.

### Exhibit 36. DIF Comparisons Groups

Group	Reference	Focal
Gender	Male	Female
Ethnicity	White	African-American

Exhibits 37 and 38 provide the DIF results for gender and ethnicity, respectively. A positive value indicates DIF favoring the focal group, and a negative value indicates DIF favoring the reference group. For instance, “B- DIF” indicates the B level DIF favoring the reference group and “B+ DIF” indicates the B level DIF favoring the focal group. Likewise for the C level DIF.

As can be observed from the table, most of the DIF items are at moderate level. One ELA operational item from grade 5 and one science operational item from high school show relatively large DIF (i.e. C

level). The content experts reviewed these items and did not find they were biased to any particular group.

**Exhibit 37. The Numbers of Flagged Gender DIF items for Content Area and Grades**

Content Area	Grade	Item Usage	N of Items	B- DIF	B+ DIF	C- DIF
ELA	3	OP	33			
ELA	4	OP	34	2		
ELA	5	OP	32	1		
ELA	6	OP	32	1		
ELA	7	OP	32		1	
ELA	8	OP	32	1	1	
Math	3	OP	35	1	1	
Math	4	OP	35	3		
Math	5	OP	35	2	2	
Math	6	OP	35		1	
Math	7	OP	35			
Math	8	OP	35			
Math	HS	OP	35			
Science	4	OP	30		1	
Science	8	OP	30			
Science	HS	OP	30		1	1
ELA	3	FT	7	2		
ELA	4	FT	5	1		
ELA	5	FT	6	1		
Math	3	FT	5			
Math	4	FT	5			
Math	6	FT	5			
Math	HS	FT	12	1	1	
Science	4	FT	12			
Science	8	FT	12	1		
Science	HS	FT	12			

**Exhibit 38. The Numbers of Flagged Ethnicity DIF items for Content Area and Grades**

Content Area	Grade	Item Usage	N of Items	B- DIF	B+ DIF	C+ DIF
ELA	3	OP	33	1	1	
ELA	4	OP	34		3	
ELA	5	OP	32		2	1
ELA	6	OP	32		2	
ELA	7	OP	32		1	
ELA	8	OP	32		2	
Math	3	OP	35	1	3	
Math	4	OP	35			
Math	5	OP	35	3	1	
Math	6	OP	35	1	2	
Math	7	OP	35		3	
Math	8	OP	35	1	1	
Math	HS	OP	35	2	2	
Science	4	OP	30			
Science	8	OP	30	1	1	
Science	HS	OP	30			
ELA	3	FT	7			
ELA	4	FT	5			
ELA	5	FT	6		1	
Math	3	FT	5		1	
Math	4	FT	5		1	
Math	6	FT	5		1	
Math	HS	FT	12	2		
Science	4	FT	12	1		
Science	8	FT	12	1	1	
Science	HS	FT	12		1	

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## Appendix A. Executive Summary of Alignment Report

### Introduction

The Louisiana Department of Education (LDOE) sought an independent evaluation of the alignment of their alternate assessment in English language arts (ELA), mathematics, and science in grades 3-8 and HS (only 4, 8, and high school for science) to the Louisiana Connectors for Students with Significant Cognitive Disabilities (Louisiana Connectors) in these same content areas. ACS Ventures, LLC (ACS) was selected to lead this alignment evaluation supported by edCount, LLC who managed the study logistics and provided support for the expert panelists. The report details the alignment methodology, process, and results by content area and grade level.

### Evaluation Methodology

The approach to evaluating alignment quality within the LEAP Connect assessment system encompasses the collection and evaluation of a comprehensive body of evidence that itself aligns with the demands of both the federal peer review criteria for alignment and, even more importantly, *The Standards for Educational and Psychological Testing* which describes industry standards for assessment development and validation (*The Standards*; AERA, APA, & NCME, 2014). The evaluation criteria include elements of the *Links for Academic Learning (LAL)* supplemented by a review of the achievement level descriptors (ALDs) as recommended by Forte (2017). Each is briefly described below:

#### Links for Academic Learning (LAL) Criteria (Flowers et al., 2009)

- **Criterion 3: Fidelity with Grade Level Content and Performance.** ACS used panelist judgments to evaluate the alignment between the content and performance requirements of the LEAP Connect items/tasks and those specified in the aligned Louisiana Connectors.
- **Criterion 4: Content Differs in Range, Balance, and Complexity.** ACS used panelist judgments to evaluate the extent to which the content of each LEAP Connect assessment aligns to the domains /inclusive Louisiana Connectors and represents the expectations outlined in the blueprint.
- **Criterion 5: Differentiation Across Grade Levels.** ACS used subject matter expert judgments to evaluate how the content of the exam (i.e., knowledge and skills measured) is differentiated across grades.
- **Criterion 7: Barriers to Performance.** ACS used panelist judgments to evaluate the accessibility of the LEAP Connect assessments for students with varying levels of communicative competence.

#### ALD Criterion (Forte, 2017)

- **Relationship Fidelity Between Items and ALDs.** ACS used panelist judgments to evaluate how the set of items on each LEAP Connect assessment reflect the expectations outlined in the draft ALDs.

To complete these evaluations, ACS and edCount worked with LDOE to recruit and organize eight panels of subject matter experts from Louisiana including content experts and special education teachers. Each panel met for 2-3 days to review select LEAP Connect assessments and make judgments relative to each criterion through independent work and panel-level collaboration. ACS consolidated their judgments following the meeting to develop this report.



## Evaluation Findings and Recommendations

This report details the specific results by content area, grade level, and alignment criteria. Overall, the results show a strong degree of alignment between the LEAP Connect assessments and the Louisiana Connectors with some variance among subject areas:

- For ELA, there was a reasonable level of alignment across criteria for each grade level. The only exception was for grades 4, 5, and high school Criterion 4 – domain concurrence, where the panel found that a number of items fit better with grade-level connectors than the intended Prioritized Connectors. Further review of these findings found that in these cases, the aligned grade-level connector was very similar to the Prioritized Connector.
- For mathematics, there was a reasonable level of alignment across criteria for each grade level. The exceptions to this are for several grade levels, Criterion 4 – domain concurrence, where the panel found 1-3 items per grade level that were aligned to something other than the grade-level connectors (i.e., off grade level connectors, Louisiana Student Standards, no connector match). In addition, the panel found that the LEAP Connect assessment at grade 8 did not fully represent all four of the draft ALDs. However, these descriptors are still under review and therefore this finding should be provided to LDOE for feedback during the process and not taken as a final conclusion.
- For science, there was a reasonable level of alignment across criteria for each grade level. The exception to this is for grade 8, Criterion 4 – domain concurrence, where the panel found three items not aligned to the Prioritized or grade-level connectors.

Across subject areas and grade levels, the panel identified options for students with varying levels of communicative competence to access the LEAP Connect assessments (as designed, with available accommodations or modifications). In addition, review by subject matter experts determined that the LEAP Connect assessment system is sufficiently differentiated across grade levels within each content area.

## Alignment Evaluation Conclusions

Overall, the panel came to consensus on the item-level and assessment-level alignment rating tasks. In addition, the panelists indicated via the evaluation survey that they had confidence in the judgmental process and results. Overall, there was a strong degree of alignment across content areas and grade levels between the Prioritized Connectors and draft ALDs and the LEAP Connect content (items, tasks) and the Louisiana Connectors. In addition, this study produced evidence that the LEAP Connect assessment system includes differentiated expectations across grade levels and is accessible to students with varying levels of communicative competence.

## Background

### *Evaluation Purpose*

The purpose of this document is to detail the data collection and analysis for evaluating the alignment quality of the Louisiana Educational Assessment Program (LEAP) Connect assessments in English language arts (ELA) and mathematics for grades 3 – 8 and high school, as well as in science for grades 4, 8, and high school. This report includes explanations of the translation points between the assessment and evaluation questions and outlines how the data was collected and analyzed to provide evidence of alignment quality.

### *Key Terminology*

The following key terminology from LDOE’s academic content standards and assessment system are central to understanding evaluation’s methodologies and findings.

The LDOE defines a **Louisiana Connector** (connector) as an extended content standard that provides developmentally appropriate content for a specific grade level and course, while maintaining high expectations for all students. The connectors are intended to accentuate the “big ideas” found in the Louisiana Student Standards and provide students with significant cognitive disabilities fully aligned pathways to work toward the Louisiana Student Standards for English Language Arts, Mathematics, and Science. The **Prioritized Connectors** for each content area and grade level (ranging from 7-12 across content areas and grade levels) are the targets for assessment.

The LEAP Connect assessments organize the Louisiana Connectors based on common content themes or domains found in the connectors. These **domains** are the primary units of analysis in this evaluation. Domains reflect the key ideas that are found across the connectors.

For each content area and grade level, LDOE created a test **blueprint** to represent the specific test content that will contribute to the total score of the assessments. The blueprints for the LEAP Connect assessments indicate the overall content distribution for the operational test. Each blueprint includes the domains that are to be assessed, as well as the Prioritized Connectors and overall scoring weights for each domain. The blueprints also lists the item types and score-point ranges for the assessments.

The LDOE created a framework of **tiers** for classifying and describing item and task complexity along with the level of support provided to examinees during the test administration. This framework includes four tiers with the first two (Tier 1 and Tier 2) reflecting higher levels of support and the latter two (Tier 3 and Tier 4) representing less support for students who are developing mastery of the specific skill or knowledge. The system of tiers is detailed for each content area in the appropriate *LEAP Connect Assessment Guide*.

To interpret student performance, the LDOE is developing a set of **achievement level descriptors (ALDs)** for each content area and grade level that describes the knowledge, skills, and abilities generally demonstrated by students at each performance level. These descriptors were constructed from the Prioritized Connectors to facilitate interpretation of student performance on the LEAP Connect assessments. The details within each descriptor are further differentiated by text complexity for ELA or task complexity for mathematics and science (low, moderate, and high).

The **items** and **tasks** on each LEAP Connect assessment provide students with the opportunity to demonstrate their knowledge and skills in relation to the Louisiana Connectors across the four achievement levels.

### *LEAP Connect Assessments*

The LEAP Connect assessments were designed to assess knowledge and skills of students with significant cognitive disabilities in ELA, mathematics, and science. Specifically, these assessments are intended to be aligned with the Louisiana Connectors and include items and tasks. Each assessment includes a series of scored and unscored items and tasks as outlined in Table 1 below. These unscored items are items that the LDOE is field testing to collect data that can be used in future forms construction. In addition, the ELA assessments at grades 3 and 4 include alternate versions of some items to allow for responses from nonverbal students.

**Table 1. LEAP Connect Assessments: Number and type of Items and Tasks, Domain**

Content Area & Grade Level	Scored Items	Unscored Items	Alternate Items <sup>7</sup>	Writing Tasks	Domain
<b>ELA</b>					
<b>3</b>	41	7	10	1 [3 Scoring Domains]	Reading: Literature Reading: Informational Language
<b>4</b>	39	6	10		Writing Foundational Reading
<b>5</b>	32	6	--		Reading: Literature
<b>6</b>	33	6	--		Reading: Informational Language
<b>7</b>	34	6	--		Writing
<b>8</b>	34	6	--		
<b>HS</b>	33	6	--		
<b>Math</b>					
<b>3</b>	34	6	--	--	Operations & Algebraic Thinking Numbers and Operations in Base 10
<b>4</b>	34	6	--	--	Numbers and Operations - Fractions Measurement and Data Geometry
<b>5</b>	35	5	--	--	Ratios and Proportional Relationships Expressions and Equations Number System Statistics and Probability Geometry
<b>6</b>	35	5	--	--	Functions Expressions and Equations Number System Statistics and Probability
<b>7</b>	35	5	--	--	
<b>8</b>	35	5	--	--	

<sup>7</sup> Alternate Items refers to the items that are used on alternate versions of the assessments. These items specifically are used on the non-verbal version of the grades 3 and 4 ELA assessments and provide students who are non-verbal an opportunity to be assessed on the content. These sets of items are also scored together so that five items are worth one point.

					Geometry
<b>HS</b>	35	6*	--	--	Algebra Statistics and Probability Number and Quantity Geometry
<b>Science</b>					
<b>4</b>	30	6*	--	--	Physical Science Life Science
<b>8</b>	30	6*	--	--	Earth and Space Science
<b>HS</b>	30	6*	--	--	LS1: Molecules to Organisms LS2: Ecosystems LS3: Heredity LS4: Biological Evolution

\* The materials for these assessments included an additional 6 unscored items from an alternate form.

## Appendix B. Classical Item Analysis Results – Operational Items

### B.1 ELA Grade 3 Form 3

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥290	0.71	0.39	0.00		0.71	0.28	
2	MC	1	≥290	0.90	0.37	0.01		0.09	0.90	
3	MC	1	≥290	0.75	0.33	0.01		0.75	0.24	
4	MC	1	≥290	0.87	0.49	0.01		0.13	0.87	
5	MC	1	≥290	0.39	0.27	0.01		0.39	0.20	0.40
6	MC	1	≥290	0.62	0.04	0.01		0.16	0.22	0.62
7	MC	1	≥290	0.71	0.37	0.01		0.12	0.15	0.71
8	MC	1	≥290	0.74	0.26	0.01		0.11	0.14	0.74
9	MC	1	≥290	0.75	0.35	0.01		0.05	0.75	0.19
10	MC	1	≥290	0.62	0.49	0.01		0.16	0.62	0.22
11	CR	1	≥290	0.33	0.33	0.00	0.67	0.33		
12	MC	1	≥290	0.70	0.52	0.01		0.10	0.70	0.19
13	MC	1	≥290	0.69	0.20	0.01		0.19	0.11	0.69
14	MC	1	≥290	0.49	0.42	0.01		0.49	0.16	0.34
15	MC	1	≥290	0.80	0.32	0.01		0.10	0.09	0.80
16	MC	1	≥290	0.54	0.08	0.01		0.23	0.22	0.54
17	MC	1	≥290	0.35	0.23	0.01		0.27	0.35	0.37
18	CR	1	≥290	0.32	0.28	0.00	0.68	0.32		
19	MC	1	≥290	0.49	0.36	0.01		0.24	0.49	0.25
20	MC	1	≥290	0.33	0.19	0.02		0.27	0.33	0.38
21	MC	1	≥290	0.60	0.41	0.01		0.60	0.20	0.19
22	MC	1	≥290	0.51	0.33	0.01		0.18	0.51	0.30
23	MC	1	≥290	0.86	0.33	0.01		0.07	0.06	0.86
24	MC	1	≥290	0.64	0.54	0.01		0.64	0.14	0.21
25	CR	2	≥290	0.91	0.45	0.00	0.01	0.15	0.84	
26	MC	1	≥290	0.89	0.35	0.00		0.11	0.89	
27	MC	1	≥290	0.87	0.32	0.00		0.87	0.04	0.08
28	MC	1	≥290	0.61	0.31	0.01		0.22	0.16	0.61
29	CR	3	≥290	0.67	0.63	0.06	0.05	0.24	0.19	0.46
30	CR	3	≥290	0.61	0.57	0.06	0.18	0.12	0.22	0.42
31	CR	3	≥290	0.55	0.62	0.06	0.11	0.39	0.07	0.37

**B.2 ELA Grade 3 Form 3NV**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥200	0.56	0.24	0.06		0.56	0.38	
2	MC	1	≥200	0.71	0.48	0.06		0.22	0.71	
3	MC	1	≥200	0.54	0.32	0.09		0.54	0.37	
4	MC	1	≥200	0.64	0.45	0.08		0.28	0.64	
5	MC	1	≥200	0.26	0.12	0.10		0.26	0.25	0.39
6	MC	1	≥200	0.51	0.33	0.10		0.19	0.20	0.51
7	MC	1	≥200	0.51	0.38	0.10		0.14	0.25	0.51
8	MC	1	≥200	0.59	0.48	0.10		0.11	0.20	0.59
9	MC	1	≥200	0.45	0.34	0.09		0.15	0.45	0.31
10	MC	1	≥200	0.44	0.45	0.11		0.16	0.44	0.29
11	RFS	1	≥200	0.27	0.43	0.00	0.73	0.27		
12	MC	1	≥200	0.38	0.34	0.11		0.17	0.38	0.34
13	MC	1	≥200	0.46	0.32	0.11		0.18	0.24	0.46
14	MC	1	≥200	0.28	0.30	0.11		0.28	0.26	0.35
15	MC	1	≥200	0.56	0.44	0.12		0.16	0.16	0.56
16	MC	1	≥200	0.41	0.17	0.13		0.19	0.28	0.41
17	MC	1	≥200	0.25	0.21	0.13		0.24	0.25	0.38
18	RFS	1	≥200	0.26	0.46	0.00	0.74	0.26		
19	MC	1	≥200	0.34	0.26	0.11		0.23	0.34	0.32
20	MC	1	≥200	0.25	0.30	0.14		0.23	0.25	0.37
21	MC	1	≥200	0.32	0.35	0.13		0.32	0.24	0.31
22	MC	1	≥200	0.43	0.40	0.12		0.16	0.43	0.29
23	MC	1	≥200	0.57	0.47	0.12		0.14	0.16	0.57
24	MC	1	≥200	0.41	0.43	0.12		0.41	0.16	0.31
25	WS	2	≥200	0.75	0.62	0.00	0.11	0.27	0.62	
26	MC	1	≥200	0.73	0.49	0.09		0.19	0.73	
27	MC	1	≥200	0.50	0.42	0.10		0.50	0.13	0.27
28	MC	1	≥200	0.39	0.33	0.11		0.28	0.22	0.39
29	CR	3	≥200	0.32	0.62	0.23	0.19	0.36	0.07	0.15
30	CR	3	≥200	0.22	0.55	0.23	0.44	0.11	0.07	0.14
31	CR	3	≥200	0.27	0.53	0.23	0.27	0.31	0.06	0.12

**B.3 ELA Grade 4 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥360	0.92	0.32	0.02		0.06	0.92	
2	MC	1	≥360	0.88	0.40	0.01		0.11	0.88	
3	MC	1	≥360	0.75	0.44	0.01		0.75	0.24	
4	MC	1	≥360	0.85	0.43	0.01		0.85	0.14	
5	MC	1	≥360	0.87	0.43	0.01		0.87	0.12	
6	MC	1	≥360	0.75	0.41	0.01		0.13	0.75	0.11
7	MC	1	≥360	0.63	0.44	0.01		0.63	0.09	0.26
8	MC	1	≥360	0.53	0.36	0.01		0.12	0.53	0.34
9	MC	1	≥360	0.62	0.21	0.01		0.17	0.21	0.62
10	MC	1	≥360	0.51	0.36	0.01		0.20	0.51	0.28
11	RFS	1	≥360	0.39	0.30	0.00	0.61	0.39		
12	MC	1	≥360	0.61	0.17	0.02		0.09	0.28	0.61
13	MC	1	≥360	0.62	0.25	0.01		0.20	0.17	0.62
14	MC	1	≥360	0.57	0.36	0.01		0.57	0.15	0.27
15	MC	1	≥360	0.63	0.33	0.01		0.21	0.15	0.63
16	MC	1	≥360	0.67	0.43	0.01		0.10	0.67	0.23
17	MC	1	≥360	0.60	0.35	0.01		0.60	0.15	0.25
18	MC	1	≥360	0.67	0.44	0.01		0.16	0.67	0.16
19	RFS	1	≥360	0.42	0.30	0.00	0.58	0.42		
20	MC	1	≥360	0.44	0.27	0.01		0.25	0.44	0.30
21	MC	1	≥360	0.60	0.36	0.01		0.60	0.14	0.25
22	MC	1	≥360	0.51	0.07	0.01		0.19	0.29	0.51
23	MC	1	≥360	0.62	0.20	0.01		0.24	0.13	0.62
24	MC	1	≥360	0.45	0.39	0.01		0.26	0.45	0.29
25	WS	2	≥360	0.85	0.51	0.00	0.02	0.27	0.71	
26	MC	1	≥360	0.81	0.41	0.01		0.81	0.18	
27	MC	1	≥360	0.68	0.46	0.01		0.10	0.68	0.21
28	MC	1	≥360	0.66	0.23	0.01		0.23	0.10	0.66
29	MC	1	≥360	0.50	0.28	0.01		0.16	0.50	0.33
30	CR	3	≥360	0.64	0.60	0.06	0.08	0.17	0.33	0.36
31	CR	3	≥360	0.43	0.57	0.06	0.29	0.20	0.26	0.19
32	CR	3	≥360	0.62	0.57	0.06	0.12	0.25	0.10	0.47

**B.4 ELA Grade 4 Form 3NV**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥150	0.68	0.39	0.04		0.28	0.68	
2	MC	1	≥150	0.72	0.39	0.04		0.23	0.72	
3	MC	1	≥150	0.47	0.23	0.05		0.47	0.47	
4	MC	1	≥150	0.56	0.38	0.06		0.56	0.38	
5	MC	1	≥150	0.56	0.46	0.08		0.56	0.35	
6	MC	1	≥150	0.58	0.41	0.09		0.17	0.58	0.17
7	MC	1	≥150	0.39	0.39	0.08		0.39	0.26	0.26
8	MC	1	≥150	0.42	0.50	0.11		0.19	0.42	0.28
9	MC	1	≥150	0.50	0.33	0.10		0.18	0.22	0.50
10	MC	1	≥150	0.36	0.34	0.10		0.19	0.36	0.35
11	RFS	1	≥150	0.28	0.34	0.00	0.72	0.28		
12	MC	1	≥150	0.49	0.43	0.12		0.16	0.23	0.49
13	MC	1	≥150	0.45	0.27	0.14		0.21	0.21	0.45
14	MC	1	≥150	0.25	0.21	0.13		0.25	0.21	0.40
15	MC	1	≥150	0.47	0.37	0.13		0.21	0.19	0.47
16	MC	1	≥150	0.46	0.36	0.12		0.18	0.46	0.24
17	MC	1	≥150	0.33	0.41	0.12		0.33	0.27	0.28
18	MC	1	≥150	0.44	0.40	0.13		0.19	0.44	0.24
19	RFS	1	≥150	0.24	0.39	0.00	0.76	0.24		
20	MC	1	≥150	0.37	0.39	0.10		0.25	0.37	0.29
21	MC	1	≥150	0.33	0.32	0.11		0.33	0.22	0.34
22	MC	1	≥150	0.46	0.36	0.10		0.18	0.27	0.46
23	MC	1	≥150	0.47	0.26	0.10		0.26	0.17	0.47
24	MC	1	≥150	0.35	0.34	0.12		0.22	0.35	0.31
25	WS	2	≥150	0.64	0.70	0.00	0.11	0.49	0.40	
26	MC	1	≥150	0.56	0.46	0.09		0.56	0.35	
27	MC	1	≥150	0.53	0.43	0.08		0.19	0.53	0.19
28	MC	1	≥150	0.42	0.35	0.10		0.23	0.25	0.42
29	MC	1	≥150	0.28	0.31	0.10		0.21	0.28	0.42
30	CR	3	≥150	0.29	0.60	0.29	0.23	0.19	0.20	0.10
31	CR	3	≥150	0.14	0.47	0.29	0.46	0.13	0.06	0.05
32	CR	3	≥150	0.27	0.61	0.29	0.27	0.22	0.09	0.13



**B.5 ELA Grade 5 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥570	0.74	0.30	0.01		0.74	0.24	
2	MC	1	≥570	0.81	0.38	0.02		0.17	0.81	
3	MC	1	≥570	0.80	0.37	0.01		0.18	0.80	
4	MC	1	≥570	0.71	0.37	0.02		0.71	0.27	
5	MC	1	≥570	0.75	0.36	0.02		0.23	0.75	
6	MC	1	≥570	0.54	0.10	0.02		0.16	0.28	0.54
7	MC	1	≥570	0.56	0.42	0.02		0.19	0.56	0.23
8	MC	1	≥570	0.45	0.33	0.02		0.23	0.45	0.30
9	MC	1	≥570	0.54	0.19	0.02		0.14	0.30	0.54
10	MC	1	≥570	0.59	0.32	0.02		0.10	0.29	0.59
11	MC	1	≥570	0.66	0.41	0.02		0.12	0.19	0.66
12	MC	1	≥570	0.54	0.33	0.02		0.54	0.21	0.24
13	MC	1	≥570	0.48	0.30	0.02		0.15	0.48	0.35
14	MC	1	≥570	0.48	0.39	0.02		0.48	0.21	0.30
15	MC	1	≥570	0.67	0.40	0.02		0.12	0.18	0.67
16	MC	1	≥570	0.61	0.26	0.02		0.14	0.23	0.61
17	MC	1	≥570	0.52	0.36	0.02		0.52	0.19	0.27
18	MC	1	≥570	0.48	0.15	0.02		0.23	0.27	0.48
19	MC	1	≥570	0.73	0.45	0.02		0.13	0.13	0.73
20	WS	2	≥570	0.80	0.59	0.00	0.03	0.34	0.63	
21	MC	1	≥570	0.59	0.34	0.02		0.22	0.16	0.59
22	MC	1	≥570	0.48	0.19	0.02		0.48	0.15	0.35
23	MC	1	≥570	0.34	0.26	0.02		0.22	0.34	0.42
24	MC	1	≥570	0.69	0.46	0.02		0.14	0.15	0.69
25	MC	1	≥570	0.48	0.31	0.02		0.23	0.48	0.27
26	MC	1	≥570	0.87	0.47	0.02		0.12	0.87	
27	MC	1	≥570	0.77	0.44	0.01		0.11	0.11	0.77
28	MC	1	≥570	0.47	0.38	0.02		0.18	0.47	0.34
29	MC	1	≥570	0.56	0.25	0.02		0.25	0.17	0.56
30	CR	3	≥570	0.57	0.59	0.07	0.11	0.22	0.30	0.30
31	CR	3	≥570	0.50	0.60	0.07	0.18	0.22	0.30	0.23
32	CR	3	≥570	0.54	0.56	0.07	0.19	0.27	0.06	0.41

**B.6 ELA Grade 6 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥800	0.88	0.43	0.02		0.11	0.88	
2	MC	1	≥800	0.88	0.47	0.02		0.10	0.88	
3	MC	1	≥800	0.85	0.52	0.02		0.85	0.13	
4	MC	1	≥800	0.77	0.49	0.02		0.77	0.22	
5	MC	1	≥800	0.84	0.51	0.02		0.84	0.14	
6	MC	1	≥800	0.88	0.43	0.02		0.10	0.88	
7	MC	1	≥800	0.64	0.35	0.02		0.11	0.23	0.64
8	MC	1	≥800	0.65	0.53	0.02		0.65	0.14	0.18
9	MC	1	≥800	0.69	0.52	0.02		0.10	0.69	0.19
10	MC	1	≥800	0.59	0.44	0.02		0.59	0.13	0.26
11	MC	1	≥800	0.65	0.37	0.02		0.07	0.25	0.65
12	MC	1	≥800	0.75	0.53	0.03		0.75	0.10	0.13
13	MC	1	≥800	0.62	0.36	0.03		0.22	0.62	0.13
14	MC	1	≥800	0.42	0.10	0.03		0.17	0.38	0.42
15	MC	1	≥800	0.61	0.39	0.03		0.12	0.61	0.24
16	MC	1	≥800	0.50	0.38	0.03		0.50	0.13	0.34
17	MC	1	≥800	0.55	0.33	0.03		0.55	0.18	0.24
18	MC	1	≥800	0.68	0.40	0.03		0.13	0.16	0.68
19	WS	2	≥800	0.88	0.48	0.00	0.03	0.18	0.79	
20	MC	1	≥800	0.53	0.43	0.02		0.17	0.53	0.29
21	MC	1	≥800	0.63	0.33	0.02		0.12	0.22	0.63
22	MC	1	≥800	0.58	0.41	0.02		0.16	0.58	0.24
23	MC	1	≥800	0.61	0.28	0.02		0.20	0.16	0.61
24	MC	1	≥800	0.74	0.45	0.02		0.10	0.13	0.74
25	MC	1	≥800	0.61	0.30	0.02		0.17	0.20	0.61
26	MC	1	≥800	0.72	0.42	0.02		0.72	0.27	
27	MC	1	≥800	0.49	0.30	0.02		0.49	0.22	0.27
28	MC	1	≥800	0.69	0.46	0.01		0.12	0.69	0.18
29	MC	1	≥800	0.52	0.32	0.02		0.52	0.20	0.26
30	CR	3	≥800	0.60	0.67	0.07	0.06	0.24	0.35	0.29
31	CR	3	≥800	0.64	0.63	0.07	0.12	0.10	0.33	0.39
32	CR	3	≥800	0.61	0.61	0.07	0.11	0.29	0.07	0.46

**B.7 ELA Grade 7 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥860	0.90	0.43	0.01		0.90	0.09	
2	MC	1	≥860	0.81	0.50	0.01		0.81	0.18	
3	MC	1	≥860	0.80	0.44	0.01		0.19	0.80	
4	MC	1	≥860	0.63	0.20	0.01		0.36	0.63	
5	MC	1	≥860	0.61	0.26	0.01		0.61	0.38	
6	MC	1	≥860	0.86	0.45	0.02		0.12	0.86	
7	MC	1	≥860	0.76	0.48	0.02		0.76	0.22	
8	MC	1	≥860	0.69	0.54	0.02		0.09	0.69	0.21
9	MC	1	≥860	0.72	0.52	0.02		0.72	0.11	0.16
10	MC	1	≥860	0.66	0.47	0.02		0.13	0.66	0.19
11	MC	1	≥860	0.59	0.21	0.02		0.18	0.21	0.59
12	MC	1	≥860	0.44	0.29	0.02		0.32	0.44	0.22
13	MC	1	≥860	0.67	0.49	0.02		0.11	0.67	0.20
14	MC	1	≥860	0.50	0.21	0.02		0.50	0.30	0.18
15	MC	1	≥860	0.50	0.30	0.02		0.26	0.50	0.23
16	MC	1	≥860	0.57	0.29	0.02		0.28	0.14	0.57
17	MC	1	≥860	0.58	0.26	0.02		0.14	0.27	0.58
18	MC	1	≥860	0.58	0.35	0.02		0.18	0.22	0.58
19	WS	2	≥860	0.95	0.41	0.00	0.01	0.07	0.92	
20	MC	1	≥860	0.69	0.56	0.02		0.17	0.69	0.13
21	MC	1	≥860	0.67	0.43	0.02		0.67	0.14	0.18
22	MC	1	≥860	0.68	0.41	0.02		0.14	0.16	0.68
23	MC	1	≥860	0.56	0.39	0.02		0.24	0.56	0.19
24	MC	1	≥860	0.63	0.42	0.02		0.14	0.63	0.22
25	MC	1	≥860	0.64	0.35	0.02		0.19	0.15	0.64
26	MC	1	≥860	0.88	0.45	0.01		0.88	0.11	
27	MC	1	≥860	0.68	0.35	0.01		0.07	0.24	0.68
28	MC	1	≥860	0.46	0.25	0.01		0.20	0.46	0.33
29	MC	1	≥860	0.58	0.25	0.01		0.22	0.18	0.58
30	CR	3	≥860	0.60	0.64	0.07	0.06	0.27	0.26	0.34
31	CR	3	≥860	0.72	0.64	0.07	0.09	0.02	0.31	0.50
32	CR	3	≥860	0.64	0.62	0.07	0.08	0.26	0.09	0.50

**B.8 ELA Grade 8 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥930	0.91	0.37	0.01		0.08	0.91	
2	MC	1	≥930	0.91	0.34	0.01		0.08	0.91	
3	MC	1	≥930	0.52	0.20	0.01		0.52	0.47	
4	MC	1	≥930	0.88	0.39	0.01		0.11	0.88	
5	MC	1	≥930	0.86	0.36	0.01		0.13	0.86	
6	MC	1	≥930	0.82	0.52	0.01		0.82	0.17	
7	MC	1	≥930	0.66	0.41	0.02		0.66	0.32	
8	MC	1	≥930	0.55	0.33	0.02		0.55	0.10	0.34
9	MC	1	≥930	0.73	0.55	0.02		0.73	0.08	0.17
10	MC	1	≥930	0.67	0.35	0.02		0.67	0.08	0.23
11	MC	1	≥930	0.74	0.42	0.02		0.07	0.74	0.17
12	MC	1	≥930	0.79	0.35	0.02		0.11	0.09	0.79
13	MC	1	≥930	0.70	0.53	0.02		0.70	0.10	0.18
14	MC	1	≥930	0.49	0.29	0.02		0.16	0.49	0.33
15	MC	1	≥930	0.63	0.30	0.02		0.21	0.15	0.63
16	MC	1	≥930	0.58	0.41	0.02		0.58	0.18	0.22
17	MC	1	≥930	0.62	0.25	0.02		0.17	0.20	0.62
18	MC	1	≥930	0.55	0.34	0.02		0.55	0.09	0.35
19	WS	2	≥930	0.97	0.40	0.00	0.02	0.04	0.95	
20	MC	1	≥930	0.72	0.33	0.02		0.17	0.10	0.72
21	MC	1	≥930	0.40	0.25	0.02		0.12	0.40	0.46
22	MC	1	≥930	0.61	0.26	0.02		0.23	0.14	0.61
23	MC	1	≥930	0.55	0.40	0.02		0.22	0.55	0.21
24	MC	1	≥930	0.39	0.28	0.02		0.39	0.28	0.31
25	MC	1	≥930	0.70	0.46	0.02		0.70	0.12	0.16
26	MC	1	≥930	0.91	0.37	0.01		0.08	0.91	
27	MC	1	≥930	0.63	0.37	0.01		0.63	0.18	0.18
28	MC	1	≥930	0.71	0.29	0.01		0.20	0.08	0.71
29	MC	1	≥930	0.46	0.07	0.01		0.42	0.10	0.46
30	CR	3	≥930	0.56	0.67	0.08	0.11	0.19	0.38	0.24
31	CR	3	≥930	0.56	0.63	0.08	0.13	0.15	0.38	0.26
32	CR	3	≥930	0.66	0.62	0.08	0.07	0.25	0.08	0.52

**B.9 ELA Grade 11 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥850	0.84	0.40	0.01		0.84	0.15	
2	MC	1	≥850	0.86	0.51	0.02		0.86	0.12	
3	MC	1	≥850	0.81	0.32	0.01		0.18	0.81	
4	MC	1	≥850	0.84	0.50	0.02		0.84	0.14	
5	MC	1	≥850	0.90	0.48	0.02		0.08	0.90	
6	MC	1	≥850	0.76	0.40	0.02		0.76	0.22	
7	MC	1	≥850	0.85	0.52	0.03		0.85	0.12	
8	MC	1	≥850	0.73	0.39	0.02		0.25	0.73	
9	MC	1	≥850	0.72	0.58	0.03		0.72	0.06	0.18
10	MC	1	≥850	0.71	0.38	0.03		0.15	0.11	0.71
11	MC	1	≥850	0.79	0.46	0.03		0.09	0.09	0.79
12	MC	1	≥850	0.76	0.54	0.03		0.12	0.76	0.09
13	MC	1	≥850	0.79	0.55	0.03		0.07	0.79	0.12
14	WS	2	≥850	0.96	0.49	0.00	0.02	0.04	0.94	
15	MC	1	≥850	0.86	0.52	0.01		0.86	0.12	
16	MC	1	≥850	0.88	0.48	0.01		0.11	0.88	
17	MC	1	≥850	0.88	0.51	0.02		0.88	0.10	
18	MC	1	≥850	0.88	0.45	0.01		0.10	0.88	
19	MC	1	≥850	0.32	0.13	0.03		0.32	0.34	0.31
20	MC	1	≥850	0.38	0.11	0.03		0.31	0.28	0.38
21	MC	1	≥850	0.24	0.07	0.03		0.24	0.36	0.38
22	MC	1	≥850	0.50	0.24	0.03		0.20	0.27	0.50
23	MC	1	≥850	0.69	0.49	0.03		0.69	0.12	0.16
24	MC	1	≥850	0.72	0.43	0.03		0.12	0.14	0.72
25	MC	1	≥850	0.71	0.25	0.02		0.28	0.71	
26	MC	1	≥850	0.78	0.48	0.01		0.08	0.78	0.12
27	MC	1	≥850	0.29	-0.04	0.02		0.50	0.20	0.29
28	MC	1	≥850	0.58	0.39	0.02		0.13	0.58	0.27
29	CR	3	≥850	0.59	0.65	0.07	0.14	0.09	0.44	0.26
30	CR	3	≥850	0.47	0.61	0.07	0.19	0.39	0.04	0.31
31	CR	3	≥850	0.52	0.65	0.07	0.23	0.23	0.08	0.39

**B.10 Math Grade 3 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥500	0.66	0.47	0.03		0.66	0.31	
2	MC	1	≥500	0.63	0.35	0.03		0.63	0.35	
3	MC	1	≥500	0.54	0.27	0.04		0.54	0.42	
4	MC	1	≥500	0.66	0.38	0.05		0.29	0.66	
5	MC	1	≥500	0.70	0.40	0.04		0.70	0.26	
6	MC	1	≥500	0.68	0.47	0.05		0.15	0.11	0.68
7	MC	1	≥500	0.37	0.33	0.04		0.27	0.37	0.32
8	MC	1	≥500	0.51	0.32	0.05		0.51	0.44	
9	MC	1	≥500	0.63	0.49	0.05		0.63	0.13	0.19
10	MC	1	≥500	0.54	0.31	0.06		0.22	0.18	0.54
11	MC	1	≥500	0.51	0.46	0.05		0.26	0.18	0.51
12	MC	1	≥500	0.41	0.42	0.06		0.23	0.41	0.30
13	MC	1	≥500	0.53	0.42	0.05		0.53	0.16	0.27
14	MC	1	≥500	0.48	0.36	0.06		0.29	0.17	0.48
15	MC	1	≥500	0.48	0.54	0.06		0.19	0.48	0.27
16	MC	1	≥500	0.48	0.34	0.05		0.22	0.25	0.48
17	MC	1	≥500	0.56	0.44	0.05		0.56	0.15	0.23
18	MC	1	≥500	0.39	0.39	0.07		0.24	0.39	0.31
19	MC	1	≥500	0.52	0.47	0.06		0.23	0.19	0.52
20	MC	1	≥500	0.39	0.45	0.05		0.27	0.39	0.29
21	MC	1	≥500	0.33	0.31	0.05		0.28	0.33	0.35
22	MC	1	≥500	0.39	0.48	0.04		0.39	0.57	
23	MC	1	≥500	0.61	0.40	0.04		0.61	0.35	
24	MC	1	≥500	0.59	0.41	0.05		0.59	0.36	
25	MC	1	≥500	0.62	0.50	0.05		0.20	0.13	0.62
26	MC	1	≥500	0.32	0.23	0.06		0.27	0.32	0.35
27	MC	1	≥500	0.57	0.43	0.05		0.18	0.20	0.57
28	MC	1	≥500	0.50	0.46	0.06		0.50	0.17	0.27
29	MC	1	≥500	0.43	0.31	0.06		0.32	0.19	0.43
30	MC	1	≥500	0.48	0.46	0.05		0.23	0.48	0.24
31	MC	1	≥500	0.37	0.46	0.05		0.32	0.37	0.26
32	MC	1	≥500	0.55	0.36	0.06		0.23	0.16	0.55
33	MC	1	≥500	0.47	0.19	0.06		0.27	0.20	0.47
34	MC	1	≥500	0.55	0.47	0.06		0.24	0.16	0.55
35	MC	1	≥500	0.45	0.56	0.05		0.45	0.49	

**B.11 Math Grade 4 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥510	0.77	0.34	0.01		0.77	0.22	
2	MC	1	≥510	0.66	0.34	0.02		0.32	0.66	
3	MC	1	≥510	0.72	0.27	0.02		0.72	0.26	
4	MC	1	≥510	0.77	0.41	0.01		0.22	0.77	
5	MC	1	≥510	0.30	0.24	0.02		0.30	0.30	0.38
6	MC	1	≥510	0.43	0.27	0.03		0.43	0.17	0.37
7	MC	1	≥510	0.43	0.20	0.03		0.43	0.19	0.35
8	MC	1	≥510	0.59	0.42	0.03		0.20	0.18	0.59
9	MC	1	≥510	0.54	0.45	0.03		0.23	0.20	0.54
10	MC	1	≥510	0.46	0.28	0.03		0.46	0.18	0.34
11	MC	1	≥510	0.44	0.21	0.03		0.25	0.28	0.44
12	MC	1	≥510	0.48	0.41	0.03		0.32	0.18	0.48
13	MC	1	≥510	0.39	0.19	0.03		0.20	0.39	0.37
14	MC	1	≥510	0.57	0.51	0.03		0.23	0.16	0.57
15	MC	1	≥510	0.50	0.35	0.03		0.50	0.18	0.28
16	MC	1	≥510	0.52	0.44	0.03		0.26	0.19	0.52
17	MC	1	≥510	0.37	0.46	0.03		0.37	0.60	
18	MC	1	≥510	0.48	0.37	0.03		0.25	0.24	0.48
19	MC	1	≥510	0.25	0.22	0.03		0.25	0.72	
20	MC	1	≥510	0.53	0.22	0.02		0.53	0.45	
21	MC	1	≥510	0.64	0.30	0.03		0.64	0.33	
22	MC	1	≥510	0.55	0.32	0.03		0.55	0.43	
23	MC	1	≥510	0.56	0.39	0.03		0.21	0.20	0.56
24	MC	1	≥510	0.36	0.49	0.03		0.36	0.62	
25	MC	1	≥510	0.42	0.36	0.03		0.32	0.23	0.42
26	MC	1	≥510	0.46	0.40	0.03		0.29	0.21	0.46
27	MC	1	≥510	0.50	0.37	0.04		0.50	0.20	0.25
28	MC	1	≥510	0.49	0.40	0.04		0.27	0.20	0.49
29	MC	1	≥510	0.57	0.40	0.04		0.19	0.20	0.57
30	MC	1	≥510	0.54	0.36	0.04		0.22	0.20	0.54
31	MC	1	≥510	0.37	0.18	0.04		0.37	0.28	0.30
32	MC	1	≥510	0.52	0.47	0.04		0.22	0.22	0.52
33	MC	1	≥510	0.50	0.39	0.04		0.28	0.18	0.50
34	MC	1	≥510	0.36	0.22	0.04		0.27	0.36	0.33
35	MC	1	≥510	0.67	0.43	0.04		0.67	0.30	

**B.12 Math Grade 5 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥570	0.81	0.26	0.00		0.81	0.19	
2	MC	1	≥570	0.68	0.36	0.01		0.68	0.31	
3	MC	1	≥570	0.73	0.34	0.01		0.25	0.73	
4	MC	1	≥570	0.65	0.24	0.01		0.65	0.34	
5	MC	1	≥570	0.61	0.22	0.01		0.19	0.19	0.61
6	MC	1	≥570	0.50	0.38	0.01		0.20	0.50	0.30
7	MC	1	≥570	0.37	0.24	0.01		0.21	0.37	0.41
8	MC	1	≥570	0.60	0.37	0.02		0.21	0.18	0.60
9	MC	1	≥570	0.40	0.22	0.01		0.14	0.40	0.45
10	MC	1	≥570	0.49	0.30	0.01		0.49	0.17	0.33
11	MC	1	≥570	0.49	0.34	0.01		0.18	0.49	0.32
12	MC	1	≥570	0.64	0.21	0.01		0.18	0.17	0.64
13	MC	1	≥570	0.44	0.38	0.02		0.22	0.44	0.32
14	MC	1	≥570	0.53	0.17	0.01		0.25	0.21	0.53
15	MC	1	≥570	0.60	0.33	0.01		0.21	0.17	0.60
16	MC	1	≥570	0.28	0.08	0.01		0.28	0.36	0.35
17	MC	1	≥570	0.47	0.22	0.01		0.30	0.22	0.47
18	MC	1	≥570	0.52	0.14	0.02		0.25	0.21	0.52
19	MC	1	≥570	0.22	0.36	0.01		0.22	0.76	
20	MC	1	≥570	0.66	0.41	0.01		0.66	0.33	
21	MC	1	≥570	0.67	0.27	0.01		0.67	0.32	
22	MC	1	≥570	0.75	0.17	0.01		0.24	0.75	
23	MC	1	≥570	0.50	0.40	0.01		0.50	0.16	0.33
24	MC	1	≥570	0.43	0.22	0.01		0.43	0.24	0.31
25	MC	1	≥570	0.51	0.33	0.01		0.51	0.24	0.24
26	MC	1	≥570	0.60	0.24	0.01		0.17	0.22	0.60
27	MC	1	≥570	0.45	0.31	0.02		0.45	0.23	0.31
28	MC	1	≥570	0.51	0.12	0.01		0.28	0.19	0.51
29	MC	1	≥570	0.50	0.26	0.01		0.23	0.25	0.50
30	MC	1	≥570	0.46	0.29	0.01		0.46	0.25	0.28
31	MC	1	≥570	0.58	0.31	0.02		0.17	0.23	0.58
32	MC	1	≥570	0.35	0.22	0.02		0.26	0.35	0.37
33	MC	1	≥570	0.38	0.30	0.01		0.21	0.38	0.40
34	MC	1	≥570	0.25	0.42	0.01		0.25	0.73	
35	MC	1	≥570	0.52	0.10	0.02		0.25	0.21	0.52



**B.13 Math Grade 6 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥800	0.79	0.29	0.00		0.21	0.79	
2	MC	1	≥800	0.66	0.29	0.01		0.66	0.33	
3	MC	1	≥800	0.85	0.34	0.01		0.14	0.85	
4	MC	1	≥800	0.70	0.25	0.01		0.29	0.70	
5	MC	1	≥800	0.55	0.28	0.01		0.19	0.24	0.55
6	MC	1	≥800	0.53	0.40	0.02		0.53	0.24	0.21
7	MC	1	≥800	0.54	0.45	0.01		0.13	0.54	0.32
8	MC	1	≥800	0.52	0.31	0.02		0.52	0.21	0.25
9	MC	1	≥800	0.74	0.40	0.01		0.12	0.12	0.74
10	MC	1	≥800	0.54	0.41	0.02		0.22	0.54	0.22
11	MC	1	≥800	0.62	0.48	0.02		0.17	0.62	0.19
12	MC	1	≥800	0.49	0.41	0.02		0.49	0.22	0.26
13	MC	1	≥800	0.57	0.40	0.02		0.21	0.57	0.20
14	MC	1	≥800	0.36	0.22	0.02		0.36	0.24	0.38
15	MC	1	≥800	0.68	0.46	0.02		0.15	0.14	0.68
16	MC	1	≥800	0.54	0.42	0.02		0.26	0.18	0.54
17	MC	1	≥800	0.50	0.29	0.02		0.28	0.20	0.50
18	MC	1	≥800	0.74	0.42	0.02		0.74	0.24	
19	MC	1	≥800	0.53	0.44	0.02		0.25	0.53	0.20
20	MC	1	≥800	0.57	0.43	0.02		0.57	0.19	0.22
21	MC	1	≥800	0.77	0.37	0.01		0.77	0.22	
22	MC	1	≥800	0.82	0.37	0.02		0.16	0.82	
23	MC	1	≥800	0.76	0.29	0.02		0.22	0.76	
24	MC	1	≥800	0.61	0.37	0.02		0.21	0.16	0.61
25	MC	1	≥800	0.48	0.25	0.02		0.48	0.31	0.20
26	MC	1	≥800	0.50	0.34	0.03		0.50	0.25	0.23
27	MC	1	≥800	0.56	0.36	0.02		0.56	0.14	0.28
28	MC	1	≥800	0.67	0.40	0.02		0.13	0.18	0.67
29	MC	1	≥800	0.38	0.28	0.03		0.38	0.29	0.30
30	MC	1	≥800	0.70	0.46	0.02		0.16	0.11	0.70
31	MC	1	≥800	0.53	0.47	0.03		0.23	0.53	0.21
32	MC	1	≥800	0.71	0.50	0.02		0.11	0.71	0.16
33	MC	1	≥800	0.47	0.14	0.02		0.29	0.21	0.47
34	MC	1	≥800	0.65	0.36	0.03		0.14	0.18	0.65
35	MC	1	≥800	0.54	0.41	0.03		0.17	0.54	0.25

**B.14 Math Grade 7 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥850	0.83	0.23	0.00		0.83	0.17	
2	MC	1	≥850	0.83	0.39	0.00		0.83	0.17	
3	MC	1	≥850	0.92	0.20	0.00		0.08	0.92	
4	MC	1	≥850	0.73	0.34	0.01		0.73	0.26	
5	MC	1	≥850	0.63	0.34	0.01		0.20	0.63	0.17
6	MC	1	≥850	0.60	0.52	0.01		0.60	0.15	0.25
7	MC	1	≥850	0.48	0.37	0.01		0.25	0.26	0.48
8	MC	1	≥850	0.67	0.49	0.01		0.67	0.11	0.21
9	MC	1	≥850	0.66	0.50	0.01		0.66	0.16	0.17
10	MC	1	≥850	0.44	0.29	0.01		0.29	0.25	0.44
11	MC	1	≥850	0.47	0.38	0.01		0.30	0.22	0.47
12	MC	1	≥850	0.53	0.40	0.01		0.25	0.53	0.21
13	MC	1	≥850	0.53	0.36	0.01		0.29	0.17	0.53
14	MC	1	≥850	0.49	0.38	0.01		0.49	0.21	0.29
15	MC	1	≥850	0.58	0.47	0.01		0.58	0.25	0.16
16	MC	1	≥850	0.78	0.37	0.01		0.09	0.11	0.78
17	MC	1	≥850	0.57	0.37	0.01		0.21	0.57	0.22
18	MC	1	≥850	0.30	0.06	0.01		0.20	0.30	0.48
19	MC	1	≥850	0.54	0.31	0.01		0.21	0.24	0.54
20	MC	1	≥850	0.47	0.45	0.01		0.47	0.23	0.29
21	MC	1	≥850	0.83	0.37	0.01		0.83	0.16	
22	MC	1	≥850	0.76	0.24	0.01		0.23	0.76	
23	MC	1	≥850	0.68	0.35	0.01		0.68	0.32	
24	MC	1	≥850	0.67	0.43	0.01		0.14	0.67	0.19
25	MC	1	≥850	0.60	0.40	0.01		0.20	0.20	0.60
26	MC	1	≥850	0.38	0.28	0.01		0.38	0.39	0.22
27	MC	1	≥850	0.42	0.21	0.01		0.28	0.29	0.42
28	MC	1	≥850	0.52	0.49	0.01		0.52	0.17	0.30
29	MC	1	≥850	0.71	0.36	0.01		0.10	0.18	0.71
30	MC	1	≥850	0.41	0.34	0.01		0.41	0.27	0.31
31	MC	1	≥850	0.33	0.22	0.01		0.33	0.42	0.24
32	MC	1	≥850	0.51	0.47	0.01		0.23	0.51	0.25
33	MC	1	≥850	0.54	0.41	0.01		0.27	0.18	0.54
34	MC	1	≥850	0.52	0.39	0.02		0.28	0.52	0.19
35	MC	1	≥850	0.40	0.31	0.01		0.40	0.24	0.35

**B.15 Math Grade 8 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥920	0.78	0.38	0.00		0.21	0.78	
2	MC	1	≥920	0.61	0.34	0.00		0.61	0.39	
3	MC	1	≥920	0.56	0.27	0.01		0.44	0.56	
4	MC	1	≥920	0.63	0.47	0.01		0.63	0.37	
5	MC	1	≥920	0.66	0.38	0.01		0.15	0.18	0.66
6	MC	1	≥920	0.56	0.46	0.01		0.56	0.19	0.24
7	MC	1	≥920	0.55	0.43	0.01		0.17	0.55	0.27
8	MC	1	≥920	0.51	0.36	0.01		0.51	0.23	0.25
9	MC	1	≥920	0.48	0.43	0.01		0.48	0.25	0.26
10	MC	1	≥920	0.73	0.40	0.01		0.13	0.13	0.73
11	MC	1	≥920	0.45	0.17	0.01		0.15	0.38	0.45
12	MC	1	≥920	0.64	0.48	0.01		0.64	0.13	0.21
13	MC	1	≥920	0.47	0.42	0.01		0.29	0.47	0.22
14	MC	1	≥920	0.59	0.32	0.01		0.23	0.17	0.59
15	MC	1	≥920	0.69	0.45	0.01		0.12	0.69	0.18
16	MC	1	≥920	0.62	0.45	0.01		0.15	0.62	0.22
17	MC	1	≥920	0.41	0.35	0.01		0.41	0.31	0.27
18	MC	1	≥920	0.57	0.50	0.01		0.23	0.57	0.19
19	MC	1	≥920	0.50	0.36	0.02		0.20	0.29	0.50
20	MC	1	≥920	0.53	0.39	0.01		0.53	0.46	
21	MC	1	≥920	0.60	0.45	0.01		0.60	0.39	
22	MC	1	≥920	0.85	0.36	0.01		0.14	0.85	
23	MC	1	≥920	0.67	0.21	0.01		0.32	0.67	
24	MC	1	≥920	0.58	0.45	0.02		0.58	0.20	0.21
25	MC	1	≥920	0.50	0.45	0.02		0.25	0.50	0.23
26	MC	1	≥920	0.55	0.48	0.02		0.55	0.25	0.19
27	MC	1	≥920	0.47	0.34	0.02		0.22	0.29	0.47
28	MC	1	≥920	0.64	0.31	0.02		0.15	0.19	0.64
29	MC	1	≥920	0.33	0.26	0.02		0.33	0.22	0.43
30	MC	1	≥920	0.48	0.35	0.02		0.21	0.48	0.30
31	MC	1	≥920	0.55	0.46	0.02		0.55	0.20	0.23
32	MC	1	≥920	0.56	0.34	0.02		0.56	0.22	0.20
33	MC	1	≥920	0.70	0.49	0.02		0.07	0.70	0.21
34	MC	1	≥920	0.46	0.32	0.02		0.21	0.30	0.46
35	MC	1	≥920	0.56	0.42	0.02		0.56	0.42	

**B.16 Math HS Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥840	0.26	0.81	0.00		0.81	0.18	
2	MC	1	≥840	0.32	0.80	0.01		0.19	0.80	
3	MC	1	≥840	0.24	0.68	0.01		0.68	0.31	
4	MC	1	≥840	0.41	0.80	0.01		0.18	0.80	
5	MC	1	≥840	0.30	0.53	0.02		0.53	0.30	0.15
6	MC	1	≥840	0.19	0.37	0.02		0.20	0.37	0.41
7	MC	1	≥840	0.44	0.48	0.02		0.30	0.48	0.19
8	MC	1	≥840	0.48	0.56	0.03		0.23	0.18	0.56
9	MC	1	≥840	0.35	0.76	0.02		0.76	0.22	
10	MC	1	≥840	0.51	0.63	0.02		0.21	0.63	0.13
11	MC	1	≥840	0.45	0.52	0.03		0.21	0.23	0.52
12	MC	1	≥840	0.32	0.58	0.03		0.58	0.17	0.23
13	MC	1	≥840	0.49	0.58	0.03		0.22	0.58	0.16
14	MC	1	≥840	0.39	0.48	0.03		0.21	0.48	0.29
15	MC	1	≥840	0.37	0.51	0.03		0.21	0.25	0.51
16	MC	1	≥840	0.47	0.50	0.03		0.14	0.50	0.32
17	MC	1	≥840	0.27	0.40	0.03		0.40	0.39	0.19
18	MC	1	≥840	0.44	0.56	0.02		0.56	0.21	0.22
19	MC	1	≥840	0.54	0.59	0.02		0.17	0.59	0.22
20	MC	1	≥840	0.38	0.51	0.02		0.21	0.26	0.51
21	MC	1	≥840	0.36	0.81	0.02		0.81	0.17	
22	MC	1	≥840	0.37	0.41	0.03		0.26	0.41	0.30
23	MC	1	≥840	0.41	0.79	0.03		0.79	0.18	
24	MC	1	≥840	0.31	0.49	0.03		0.49	0.13	0.35
25	MC	1	≥840	0.30	0.37	0.03		0.36	0.37	0.25
26	MC	1	≥840	0.49	0.53	0.03		0.15	0.53	0.29
27	MC	1	≥840	0.21	0.45	0.03		0.28	0.45	0.24
28	MC	1	≥840	0.30	0.37	0.03		0.15	0.37	0.46
29	MC	1	≥840	0.42	0.53	0.03		0.23	0.21	0.53
30	MC	1	≥840	0.37	0.50	0.03		0.25	0.23	0.50
31	MC	1	≥840	0.47	0.64	0.03		0.19	0.64	0.14
32	MC	1	≥840	0.38	0.56	0.03		0.19	0.23	0.56
33	MC	1	≥840	0.42	0.49	0.03		0.49	0.21	0.27
34	MC	1	≥840	0.19	0.59	0.03		0.39	0.59	
35	MC	1	≥840	0.24	0.43	0.04		0.43	0.34	0.20

**B.17 Science Grade 4 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥500	0.26	0.67	0.01		0.32	0.67	
2	MC	1	≥500	0.34	0.83	0.00		0.16	0.83	
3	MC	1	≥500	0.28	0.59	0.01		0.59	0.40	
4	MC	1	≥500	0.18	0.39	0.01		0.28	0.39	0.31
5	MC	1	≥500	0.11	0.41	0.02		0.34	0.24	0.41
6	MC	1	≥500	0.25	0.52	0.02		0.26	0.20	0.52
7	MC	1	≥500	0.33	0.79	0.02		0.79	0.19	
8	MC	1	≥500	0.34	0.60	0.02		0.60	0.16	0.22
9	MC	1	≥500	0.26	0.56	0.02		0.23	0.19	0.56
10	MC	1	≥500	0.37	0.50	0.03		0.22	0.50	0.25
11	MC	1	≥500	0.23	0.40	0.03		0.26	0.40	0.32
12	MC	1	≥500	0.37	0.51	0.03		0.18	0.51	0.28
13	MC	1	≥500	0.48	0.57	0.02		0.57	0.41	
14	MC	1	≥500	0.26	0.48	0.02		0.22	0.27	0.48
15	MC	1	≥500	0.35	0.42	0.03		0.24	0.42	0.32
16	MC	1	≥500	0.27	0.56	0.03		0.23	0.18	0.56
17	MC	1	≥500	0.37	0.65	0.02		0.17	0.17	0.65
18	MC	1	≥500	0.37	0.49	0.01		0.49	0.22	0.27
19	MC	1	≥500	0.13	0.41	0.02		0.41	0.27	0.31
20	MC	1	≥500	0.29	0.46	0.01		0.21	0.46	0.32
21	MC	1	≥500	0.42	0.70	0.02		0.70	0.28	
22	MC	1	≥500	0.23	0.50	0.02		0.29	0.19	0.50
23	MC	1	≥500	0.30	0.56	0.02		0.23	0.19	0.56
24	MC	1	≥500	0.26	0.60	0.03		0.37	0.60	
25	MC	1	≥500	0.36	0.71	0.03		0.27	0.71	
26	MC	1	≥500	0.22	0.38	0.02		0.38	0.18	0.42
27	MC	1	≥500	0.26	0.50	0.02		0.26	0.50	0.21
28	MC	1	≥500	0.38	0.67	0.02		0.31	0.67	
29	MC	1	≥500	0.11	0.32	0.02		0.32	0.26	0.40
30	MC	1	≥500	0.24	0.39	0.02		0.39	0.25	0.33

**B.18 Science Grade 8 Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥910	0.43	0.54	0.01		0.27	0.54	0.18
2	MC	1	≥910	0.40	0.54	0.01		0.54	0.20	0.25
3	MC	1	≥910	0.19	0.66	0.01		0.33	0.66	
4	MC	1	≥910	0.36	0.49	0.01		0.23	0.49	0.26
5	MC	1	≥910	0.21	0.54	0.01		0.32	0.13	0.54
6	MC	1	≥910	0.36	0.83	0.01		0.16	0.83	
7	MC	1	≥910	0.34	0.53	0.01		0.19	0.53	0.27
8	MC	1	≥910	0.26	0.46	0.01		0.21	0.32	0.46
9	MC	1	≥910	0.45	0.86	0.01		0.08	0.06	0.86
10	MC	1	≥910	0.40	0.71	0.01		0.14	0.13	0.71
11	MC	1	≥910	0.43	0.66	0.01		0.13	0.66	0.19
12	MC	1	≥910	0.39	0.76	0.01		0.76	0.23	
13	MC	1	≥910	0.23	0.38	0.01		0.19	0.38	0.42
14	MC	1	≥910	0.30	0.54	0.01		0.19	0.25	0.54
15	MC	1	≥910	0.28	0.58	0.01		0.17	0.24	0.58
16	MC	1	≥910	0.35	0.91	0.01		0.91	0.08	
17	MC	1	≥910	0.31	0.56	0.02		0.17	0.26	0.56
18	MC	1	≥910	0.38	0.57	0.02		0.57	0.17	0.25
19	MC	1	≥910	0.38	0.73	0.02		0.73	0.25	
20	MC	1	≥910	0.38	0.57	0.02		0.57	0.42	
21	MC	1	≥910	0.40	0.85	0.02		0.85	0.04	0.09
22	MC	1	≥910	0.31	0.49	0.02		0.49	0.25	0.24
23	MC	1	≥910	0.38	0.90	0.02		0.08	0.90	
24	MC	1	≥910	0.41	0.65	0.02		0.10	0.23	0.65
25	MC	1	≥910	0.45	0.78	0.02		0.20	0.78	
26	MC	1	≥910	0.18	0.57	0.02		0.19	0.22	0.57
27	MC	1	≥910	0.07	0.35	0.02		0.27	0.35	0.36
28	MC	1	≥910	0.24	0.62	0.02		0.62	0.36	
29	MC	1	≥910	0.10	0.35	0.02		0.35	0.38	0.25
30	MC	1	≥910	0.35	0.54	0.02		0.54	0.44	

**B.19 Science HS Form 3**

Item	Item Type	Max Score Points	N	Pvalue	Pb	Omit	0/0	A/1	B/2	C/3
1	MC	1	≥850	0.48	0.84	0.01		0.09	0.84	0.06
2	MC	1	≥850	0.49	0.83	0.01		0.83	0.16	
3	MC	1	≥850	0.27	0.69	0.01		0.69	0.31	
4	MC	1	≥850	0.18	0.55	0.01		0.18	0.26	0.55
5	MC	1	≥850	0.15	0.43	0.02		0.27	0.28	0.43
6	MC	1	≥850	0.41	0.60	0.02		0.60	0.20	0.18
7	MC	1	≥850	0.44	0.56	0.02		0.23	0.56	0.19
8	MC	1	≥850	0.22	0.47	0.02		0.32	0.19	0.47
9	MC	1	≥850	0.40	0.59	0.02		0.59	0.23	0.16
10	MC	1	≥850	0.16	0.48	0.02		0.48	0.33	0.17
11	MC	1	≥850	0.22	0.44	0.03		0.26	0.27	0.44
12	MC	1	≥850	0.31	0.50	0.03		0.50	0.47	
13	MC	1	≥850	0.35	0.78	0.03		0.19	0.78	
14	MC	1	≥850	0.44	0.72	0.02		0.72	0.26	
15	MC	1	≥850	0.16	0.35	0.03		0.32	0.35	0.31
16	MC	1	≥850	0.46	0.87	0.02		0.87	0.11	
17	MC	1	≥850	0.41	0.80	0.01		0.11	0.08	0.80
18	MC	1	≥850	0.52	0.83	0.02		0.07	0.83	0.08
19	MC	1	≥850	0.49	0.77	0.02		0.77	0.11	0.10
20	MC	1	≥850	0.47	0.70	0.02		0.70	0.27	
21	MC	1	≥850	0.45	0.58	0.02		0.58	0.12	0.27
22	MC	1	≥850	0.47	0.64	0.03		0.64	0.33	
23	MC	1	≥850	0.36	0.69	0.02		0.69	0.29	
24	MC	1	≥850	0.33	0.59	0.03		0.19	0.19	0.59
25	MC	1	≥850	0.46	0.61	0.03		0.20	0.61	0.16
26	MC	1	≥850	0.26	0.47	0.03		0.27	0.23	0.47
27	MC	1	≥850	0.26	0.41	0.03		0.30	0.41	0.26
28	MC	1	≥850	0.18	0.37	0.03		0.39	0.37	0.21
29	MC	1	≥850	0.25	0.32	0.03		0.25	0.32	0.39
30	MC	1	≥850	0.23	0.40	0.03		0.31	0.40	0.26

## Appendix C. Item Bank Report for ELA

### Purpose

This document presents a summary of the Louisiana Department of Education (LDOE) English language arts (ELA) item bank licensed by the LDOE from the National Center State Collaborative (NCSC) and maintained by Data Recognition Corporation (DRC). The current item bank in use for the LEAP Connect assessments in ELA and mathematics has its origins in the NCSC Core Content Connectors (CCC) in ELA and mathematics. According to NCSC, as outlined in the National Center and State Collaborative – General Supervision Enhancement Grant Project Request for Proposal RFP #2012-08-01, the CCCs are the prioritized academic content designed to frame the instruction and assessment of students with the most significant cognitive disabilities. The CCCs create a connection between the Learning Progression Framework (LPF) (Hess, 2011) and Common Core State Standards for English language arts and mathematics (CCSS) for students with the most significant cognitive disabilities. The purpose of the CCCs is to identify the most salient core academic content in ELA and mathematics found in both the LPF and the CCSS.

With the adoption of the Louisiana Student Standards (LSS) in spring 2016, Louisiana’s Extended Standards and assessments for students with significant disabilities required update and alignment. The LDOE met with a diverse group of stakeholders to develop a draft set of aligned learning expectations for these students. In addition, the LDOE completed a comparative analysis of the LSS, the Louisiana Extended Standards, and the work of national models, including the NCSC CCCs. On December 6, 2016, the Board of Elementary and Secondary Education (BESE) approved revisions to *Bulletin 127, LEAP Connect Assessment, Louisiana Connectors for Students with Significant Cognitive Disabilities*, which outlines the learning expectations for students with significant disabilities as defined by those students meeting the alternative assessment eligibility criteria. These Louisiana Connectors are fully aligned to the Louisiana Student Standards for English language arts and mathematics. The LDOE drew extensively from the work of NCSC in developing the Louisiana Connectors. Just as the CCCs formed the basis for the NCSC assessments, the LCS prioritized for the LEAP Connect assessments represent the “big ideas” of the content and skills found in the LSS.

The processes employed to complete the analysis of the item bank and the results are described herein. The item bank analysis is intended to support LDOE in gaining a clearer understanding of the organization and content of the current item bank and to inform decisions related to item development based upon the prioritized LCs for ELA.

### Background

Louisiana has transitioned the alternate assessment for students with the most significant cognitive disabilities from the previous Extended Standards, developed for students eligible for alternate assessment participation, to the LEAP Connect which aligns with the LCs for ELA and mathematics. LDOE licensed the NCSC ELA assessment items to develop the operational forms for the 2017-2018 LEAP Connect operational administration.

In the spring of 2019, the number of items in the LEAP Connect ELA Assessment Item Bank was compiled to determine how many items were currently in the system by content area, grade level, item type, and item tier. In addition, a crosswalk of the prioritized assessments content was completed for the purpose of ensuring the LEAP connect assessments, based on the NCSC item map, matched the LCs for ELA prioritized for assessment. Thus, evaluators completed a review of all NCSC items and their subsequent alignment to Louisiana Connectors. While reviewing the CCCs and LCs at the descriptor level, a content



analysis was conducted with the primary purpose of comparing the NCSC CCC content to the LCs listed in the LEAP Connect Assessment Item Bank (see Appendix A: LEAP Connect ELA Assessment Prioritized Content). That analysis provides the LDOE evidence that assessment items in the LEAP Connect for ELA Assessment Item Bank, licensed from NCSC, have a strong relationship to the requirements of the LCs for ELA prioritized for assessment.

The ELA items licensed through NCSC are aligned to ten prioritized CCCs, which constitute the framework for the NCSC assessment. The prioritized NCSC content is measured by a percent distribution of items based on the number of clusters within a domain. For ELA, the number of prioritized content targets differs by grade level.

The LEAP Connect ELA assessment is comprised primarily of selected-response items with scripted directions for test administration. Items are written to various levels of complexity. ELA content assessed by LEAP Connect includes:

- Comprehension of literature and informational text,
- Reading foundational skills at grades 3 and 4,
- Vocabulary, and
- Writing.

### **ELA Item Bank Analysis Process**

edCount evaluators with assessment and content expertise examined all licensed NCSC ELA items and Form 1 of the 2018-2019 LEAP Connect ELA assessments to examine the relationship between the identified LCs for each item in grades 3-8 and 11 and the prioritized NCSC CCCs. This process began with an examination of the NCSC ELA test maps for grades 3-8 and 11 and the NCSC Item Meta Data file to document the identified LC for each item for three ELA Domains. Then, a crosswalk was completed among each LC and the associated NCSC CCC. The relationship among the LEAP Connect assessment for ELA items, LSS for ELA, LCs for ELA, and CCCs builds a clearer picture of the current item bank, as well as identifies information necessary to develop components for technical documentation.

### *Sources*

edCount evaluators reviewed multiple sources of information to gain the necessary background information to complete the “cross walk” process. The sourced documents include:

- NCSC ELA test maps grade 3-8 and 11
- NCSC Item Meta Data File
- LDOE 2017-2018 Directory of Test Specifications (DOTS) LEAP Connect ELA Grades 3-8
- LDOE 2018-2019 DOTS LEAP Connect ELA Grades 3-8 and 11
- K-12 Louisiana Connectors Reading and Writing
- Common Core State Standards for Reading and Writing
- Louisiana Student Standards (LSS) for ELA
- LDOE Final Backwards Crosswalk ELA
- Louisiana *Bulletin 127*
- NCSC Technical Manual 2015

- NCSC Technical Manual Appendix 6-A

### Item Bank Analysis Results

The results of the item bank analysis for all licensed NCSC reading and writing items are presented in the report. The results section begins with a brief description of the total number of items found at each grade. Following the presentation of item totals is a summary of the number of items by grade, tier, and prioritized LC. A discussion of the reading and writing items by type comes next followed by a brief description of the passages created across all grades both operational and non-operational. Finally, the analysis concludes with a summary of item difficulty by tier and strand for both reading and writing items.

### Disaggregation of the Licensed NCSC English Language Arts Item Bank

Disaggregated item-level information by grade displays the total number of assets, which is inclusive of items, rubrics, passages, passage parts, and passage introductions in the licensed NCSC ELA item bank (see Exhibit 1). Assets considered as non-operational are assets which were considered as enemies. In other words, NCSC developed every passage and its associated items as a family of items written to Tiers 1 – 4. If a passage appeared as part of Session One of the NCSC reading assessment, all other passages and items from that family could not appear on session 2 on any of the NCSC reading assessments. Therefore, these assets are considered “not ready” to be included in an operational form. In addition, the total number of assets indicated in the files as “Do not Use” (DNU) or as low biserial correlation (BIS) are not considered available for use in their current state. The next column indicates the number of ELA assets that have been used on operational forms. The final column indicates the number of ELA (reading and writing) items, with data, that have appeared as operational items on at least one of the NCSC forms. The larger numbers in grades 3 and 4 are reflective of the number of items appearing as a set of five each, measuring the reading foundational skills connectors.

**Exhibit 1. Disaggregation of the Licensed NCSC English Language Arts Item Bank**

Grade	Number of Assets	Non-operational Assets	DNU Assets	BIS Assets	Operational Assets	
					P, PP, PI*	Items*
3	732	452	23	12	127	118
4	871	495	68	74	115	119
5	811	464	52	103	115	77
6	717	392	34	94	121	76
7	815	438	52	102	136	87
8	858	462	79	105	125	87
11	896	520	71	94	132	79

\*P- Passages, PP- Passage Parts, PI- Passage Introductions, Items- SR & CR on operational forms 1-4.

### Reading and Language Items by Strand and Prioritized LCs

Reading and language grade-specific tables are organized by strand and the prioritized LC (see Exhibits 2-8). Each table summarizes the number of operational reading and language items (SR and CR) by tier as well as the total number of items per LC in a strand. The number and type of passage will be presented in a subsequent table.

**Exhibit 2. Grade 3 Number of Reading and Language Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Reading: Literature	LC.RL.3.1a	3	1	2	1	7
	LC.RL.3.1b	4	2	4	2	12
	LC.RL.3.2a	2	2	4	2	10
Reading: Informational Text	LC.RI.3.2a	1	2	2	0	5
	LC.RI.3.2b	1	2	0	0	3
	LC.RI.3.5a	1	4	4	0	9
	LC.RI.3.7a	1	2	2	0	5
Reading: Foundational Skills	LC.RF.3.4b	6	20	10	10	46
Language	LC.L.3.4a	2	2	4	1	9
Total		21	37	32	16	106

**Exhibit 3. Grade 4 Number of Reading and Language Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Reading: Literature	LC.RL.4.1a	4	2	4	2	12
	LC.RL.4.2b	2	2	4	2	10
	LC.RL.4.3b	3	2	4	2	11
Reading: Informational Text	LC.RI.4.2a	1	2	2	0	5
	LC.RI.4.7a	2	4	4	0	10
	LC.RI.4.7c	1	3	4	0	8
Reading: Foundational Skills	LC.RF.4.3b	6	20	10	10	46
Language	LC.L.4.4a	1	2	2	1	6
	LC.L.4.6a	1	0	0	0	1
Total		21	37	34	17	109

**Exhibit 4. Grade 5 Number of Reading and Language Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Reading: Literature	LC.RL.5.1a	4	2	4	2	12
	LC.RL.5.2b	2	3	6	3	14
	LC.RL.5.3a	3	2	4	1	10
Reading: Informational Text	LC.RI.5.2a	1	4	5	0	10
	LC.RI.5.5c	0	4	0	0	4
	LC.RI.5.8a	2	2	3	0	7
Language	LC.L.5.4a	3	2	4	1	10
Total		15	19	26	7	67

**Exhibit 5. Grade 6 Number of Reading and Language Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Reading: Literature	LC.RL.6.1a	0	2	2	0	4
	LC.RL.6.1b	0	3	2	0	5
	LC.RL.6.2c	0	10	6	0	16
Reading: Informational Text	LC.RI.6.2	1	0	2	0	3
	LC.RI.6.3d	7	0	2	2	11
	LC.RI.6.7b	2	0	1	1	4
	LC.RI.6.8b	5	0	5	2	12
Language	LC.L.6.4a	1	3	2	0	6
	LC.L.6.6a	1	0	2	1	4
Total		17	18	24	6	65

**Exhibit 6. Grade 7 Number of Reading and Language Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Reading: Literature	LC.RL.7.1b	0	12	8	0	20
	LC.RL.7.2b	0	3	3	0	6
Reading: Informational Text	LC.RI.7.1	3	0	3	2	8
	LC.RI.7.3	10	0	6	5	21
	LC.RI.7.8b	0	0	1	0	1
	LC.RI.7.7	4	0	2	2	8
Language	LC.L.7.4a	3	3	4	1	11
Total		20	18	27	10	75

**Exhibit 7. Grade 8 Number of Reading and Language Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Reading: Literature	LC.RL.8.1b	2	8	8	0	18
	LC.RL.8.2b	1	2	2	0	5
Reading: Informational Text	LC.RI.8.1a	3	4	6	4	17
	LC.RI.8.5d	3	2	3	2	10
	LC.RI.8.8a	3	2	3	2	10
	LC.RI.8.9	1	1	1	1	4
Language	LC.L.8.4a	1	2	2	0	5
	LC.L.8.6a	2	1	2	1	6
Total		16	22	27	10	75

**Exhibit 8. Grade 11 Number of Reading and Language Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Reading: Literature	LC.RL.11-12.1a	1	4	4	0	9
	LC.RL.11-12.5	2	4	4	0	10
Reading: Informational Text	LC.RI.11-12.1a	5	6	8	6	25
	LC.RI.11-12.2c	2	0	2	0	4
	LC.RI.11-12.6a	3	1	2	1	7
	LC.RI.11-12.7	1	0	0	0	1
	LC.L.11-12.6d	2	1	2	0	5
Language	LC.L.11-12.4a	1	2	2	1	6
<b>Total</b>		<b>17</b>	<b>18</b>	<b>24</b>	<b>8</b>	<b>67</b>

**Writing Items by Strand and Prioritized LC**

Writing grade-specific tables are organized by strand and the verified prioritized LC (see Exhibits 9-15). Each summarizes the number of operational writing items (SR and CR) by tier as well as the total number of items per LC in a strand.

**Exhibit 9. Grade 3 Number of Writing Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Text Types Informative/ Explanatory	LC.W.3.2c	0	1	0	1	2
Research to Build & Present Knowledge	LC.W.3.8g	1	0	1	0	2
Production & Distribution of Writing	LC.W.3.4	6	2	0	0	8
<b>Total</b>		<b>7</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>12</b>

**Exhibit 10. Grade 4 Number of Writing Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Text Types Informative/ Explanatory	LC.W.4.2c	0	1	0	1	2
	LC.W.4.2f	1	0	1	0	2
Production & Distribution of Writing	LC.W.4.4a	4	2	0	0	6
<b>Total</b>		<b>5</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>10</b>

**Exhibit 11. Grade 5 Number of Writing Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Text Types Informative/ Explanatory	LC.W.5.2b	1	0	1	0	2
	LC.W.5.2c	0	1	0	1	2
Production & Distribution of Writing	LC.W.5.4	5	1	0	0	6
Total		6	2	1	1	10

**Exhibit 12. Grade 6 Number of Writing Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Text Types Narrative	LC.W.6.3b	1	0	1	0	2
	LC.W.6.3d	0	1	0	1	2
Production & Distribution of Writing	LC.W.6.4	5	2	0	0	7
Total		6	3	1	1	11

**Exhibit 13. Grade 7 Number of Writing Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Text Types Narrative	LC.W.7.3e	1	0	1	0	2
	LC.W.7.3f	0	1	0	1	2
Production & Distribution of Writing	LC.W.7.4	6	2	0	0	8
Total		7	3	1	1	12

**Exhibit 14. Grade 8 Number of Writing Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Text Types Narrative	LC.W.8.1b	1	0	1	0	2
Research to Build & Present Knowledge	LC.W.8.8a	0	1	0	1	2
Production & Distribution of Writing	LC.W.8.4	5	3	0	0	8
Total		6	4	1	1	12

**Exhibit 15. Grade 11 Number of Writing Items by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Text Types	LC.W.11-12.2b	1	0	1	0	2
Narrative	LC.W.11-12.2c	0	1	0	1	2
Production & Distribution of Writing	LC.W.11-12.4	6	2	0	0	8
Total		7	3	1	1	12

**Reading Items by Item Type**

The number of operational selected-response (SR) and constructed-response (CR) reading items are displayed in grade-specific tables organized by strand and prioritized LC (see Exhibits 16-22). Note there are additional items in the item bank available for future field testing.

**Exhibit 16. Grade 3 ELA Reading and Language Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Reading: Literature	LC.RL.3.1a	7	0
	LC.RL.3.1b	12	0
	LC.RL.3.2a	10	0
Reading: Informational Text	LC.RI.3.2a	5	0
	LC.RI.3.2b	3	0
	LC.RI.3.5a	9	0
	LC.RI.3.7a	5	0
Foundational Skills	LC.RF.3.4b	26	20
Language	LC.L.3.4a	9	0
Total		86	20

**Exhibit 17. Grade 4 ELA Reading and Language Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Reading: Literature	LC.RL.4.1a	12	0
	LC.RL.4.2b	10	0
	LC.RL.4.3b	11	0
Reading: Informational Text	LC.RI.4.2a	5	0
	LC.RI.4.7a	10	0
	LC.RI.4.7c	8	0
Foundational Skills	LC.RF.4.3b	26	20
Language	LC.L.4.4a	6	0
	LC.L.4.6a	1	0
Total		89	20

**Exhibit 18. Grade 5 ELA Reading and Language Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Reading: Literature	LC.RL.5.1a	12	0
	LC.RL.5.2b	14	0
	LC.RL.5.3a	10	0
Reading: Informational Text	LC.RI.5.2a	10	0
	LC.RI.5.5c	4	0
	LC.RI.5.8a	7	0
Language	LC.L.5.4a	10	0
Total		67	0

**Exhibit 19. Grade 6 ELA Reading and Language Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Reading: Literature	LC.RL.6.1a	4	0
	LC.RL.6.1b	5	0
	LC.RL.6.2c	16	0
Reading: Informational Text	LC.RI.6.2	3	0
	LC.RI.6.3d	11	0
	LC.RI.6.7b	4	0
	LC.RI.6.8b	12	0
Language	LC.L.6.4a	6	0
	LC.L.6.6a	4	0
Total		65	0

**Exhibit 20. Grade 7 ELA Reading and Language Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Reading: Literature	LC.RL.7.1b	20	0
	LC.RL.7.2b	6	0
Reading: Informational Text	LC.RI.7.1	8	0
	LC.RI.7.3	21	0
	LC.RI.7.8b	1	0
	LC.RI.7.7	8	0
Language	LC.L.7.4a	11	0
Total		65	0



**Exhibit 21. Grade 8 ELA Reading and Language Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Reading: Literature	LC.RL.8.1b	18	0
	LC.RL.8.2b	5	0
Reading: Informational Text	LC.RI.8.1a	17	0
	LC.RI.8.5d	10	0
	LC.RI.8.8a	10	0
Language	LC.RI.8.9	4	0
	LC.L.8.4a	5	0
	LC.L.8.6a	6	0
Total		75	0

**Exhibit 22. Grade 11 ELA Reading and Language Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Reading: Literature	LC.RL.11-12.1a	9	0
	LC.RL.11-12.5	10	0
Reading: Informational Text	LC.RI.11-12.1a	25	0
	LC.RI.11-12.2c	4	0
	LC.RI.11-12.6a	7	0
	LC.RI.11-12.7	1	0
	LC.L.11-12.6d	5	0
Language	LC.L.11-12.4a	6	0
Total		67	0

**Writing Items by Item Type**

The number of operational selected-response (SR) and constructed-response (CR) writing items are displayed in grade-specific tables organized by strand and prioritized LC (see Exhibits 23-29). Note there are additional items in the item bank available for future field testing.

**Exhibit 23. Grade 3 Writing Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Text Types Informative/ Explanatory	LC.W.3.2c	2	0
Research to Build & Present Knowledge	LC.W.3.8g	2	0
Production & Distribution of Writing	LC.W.3.4	6	2
Total		10	2

**Exhibit 24. Grade 4 Writing Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Text Types Informative/ Explanatory	LC.W.4.2c	2	0
	LC.W.4.2f	2	0
Production & Distribution of Writing	LC.W.4.4a	4	2
Total		8	2

**Exhibit 25. Grade 5 Writing Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Text Types Informative/ Explanatory	LC.W.5.2b	2	0
	LC.W.5.2c	2	0
Production & Distribution of Writing	LC.W.5.4	4	2
Total		8	2

**Exhibit 26. Grade 6 Writing Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Text Types Narrative	LC.W.6.3b	2	0
	LC.W.6.3d	2	0
Production & Distribution of Writing	LC.W.6.4	5	2
Total		9	2

**Exhibit 27. Grade 7 Writing Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Text Types Narrative	LC.W.7.3e	2	0
	LC.W.7.3f	2	0
Production & Distribution of Writing	LC.W.7.4	6	2
Total		10	2

**Exhibit 28. Grade 8 Writing Items by Item Type**

Strand	Louisiana Connector	Selected Response	Constructed Response
Text Types Informative/ Explanatory	LC.W.8.1b	2	0
	LC.W.8.8a	2	0
Production & Distribution of Writing	LC.W.8.4	6	2
Total		10	2

### Exhibit 29. Grade 11 Writing Items by Item Type

Strand	Louisiana Connector	Selected Response	Constructed Response
Text Types Informative/ Explanatory	LC.W.11-12.2b	2	0
	LC.W.11-12.2c	2	0
Production & Distribution of Writing	LC.W.11-12.4	6	2
Total		10	2

### Reading Passages by Grade and Type

The number of operational reading passages are displayed in grade-specific tables organized by strand and prioritized LC (see Exhibit 30). NCSC developed 8 passage sets per grade for the NCSC assessment, each with unique, tier-specific item sets. Each passage set is comprised of four passages, representing a range of complexity from the most complex at Tier 4 to the least complex at Tier 1. At all grades, the NCSC operational ELA assessment was comprised of four forms. Each grade-level form utilized the same set of three Session One passages across the four forms. Each grade-level form utilized a unique set of two Session Two passages across the four forms. Thus, there were up to eleven passages utilized operationally at each grade. For example, with regard to the Grade 3 passage set A, two of the passages, Tier 2 on Form 2 and Tier 4 on Form 4, were treated as operational as their item sets each contributed to a student’s score.

Some passage sets, such as a Tier 1 passage in passage set D at grade three, appeared during Session One. As a result, all other passages in passage set D, Tiers 2-4, could not appear on Session 2 on any form as the Tier 1 version would have had the effect of clueing. Thus, the other passages in passage set D are considered “non-operational” at this time. As a result, there are passages in the item bank available for future field testing. Disaggregated grade-level information by passage text type displays the total number of passages in the licensed NCSC ELA item bank. Passages considered as non-operational are those that may have been piloted early by NCSC that were not included on the NCSC operational assessment forms. Note there are two passage families in both grade 4 and high school which are available for future field testing.

### Exhibit 30. Disaggregation of the Licensed NCSC Reading Passages by Grade

Grade	Text Type	Total Number of Passages	Passage Set	Non-operational Passages	Operational Passages
3	Reading: Literature	16	A	2	2
			B	2	2
			C	3	1
			D	3	1
	Reading: Informational Text	16	E	3	1
			F	3	1
			G	3	1
			H	2	2
4	Reading: Literature	16	A	0	4
			B	3	1
			C	4	0

Grade	Text Type	Total Number of Passages	Passage Set	Non-operational Passages	Operational Passages
	Reading: Informational Text	16	D	3	1
			E	3	1
			F	4	0
			G	1	3
			H	3	1
5	Reading: Literature	16	A	3	1
			B	3	1
			C	1	3
	Reading: Informational Text	16	D	3	1
			E	3	1
6	Reading: Literature	16	F	1	3
			G	3	1
			A	3	1
			B	3	1
	Reading: Informational Text	16	C	2	2
D			3	1	
E			3	1	
7	Reading: Literature	16	F	3	1
			G	3	1
			H	3	1
			A	3	1
	Reading: Informational Text	16	B	3	1
C			2	2	
D			3	1	
8	Reading: Literature	16	E	3	1
			F	3	1
			G	3	1
			H	1	3
	Reading: Informational Text	16	A	3	1
B			3	1	
C			3	1	
11	Reading: Literature	16	D	2	2
			E	2	2
			F	2	2
			G	2	2
	Reading: Informational Text	16	A	0	4
B			3	1	
			C	3	1

Grade	Text Type	Total Number of Passages	Passage Set	Non-operational Passages	Operational Passages
			H	4	0

### Summary of Item Difficulty for Reading Items by Strand and Tier

A summary of mean p-values by grade and tier for reading is shown in Exhibits 31-37. The first column of the table indicates the tier. The second column of the table indicates the strand. The next three columns contain the total number of items, item difficulty by strand, and tier average. Following the theoretical design of the items and tiers, we expect to see the highest p-values at Tier 1 and the lowest p-values at Tier 4. In general, mean p-values for the other tiers followed the expected pattern. In addition, the means across tiers at each grade are similar. Note the p-values and item totals in the exhibits include items that were used operationally and field tested by NCSC. In addition, this includes item statistics for those item sets in the field test positions of the NCSC operational forms.

**Exhibit 31. Grade 3 Item Difficulty for ELA Reading Items by Tier**

Tier	Strand*	Number of Items	Item Difficulty by Strand	Tier Average
1	RL	9	0.79	0.80
	RI	4	0.80	
	RF	6	0.80	
	L	2	0.85	
2	RL	5	0.59	0.56
	RI	10	0.57	
	RF	20	0.54	
	L	2	0.69	
3	RL	10	0.58	0.56
	RI	7	0.46	
	RF	10	0.52	
	L	4	0.66	
4	RL	5	0.63	0.53
	RI	N/A	N/A	
	RF	10	0.49	
	L	1	0.50	
Total	RL	29	0.66	0.60
	RI	22	0.60	
	RF	46	0.56	
	L	9	0.69	

\*RL- Reading: Literature, RI- Reading: Informational Text, RF- Reading: Foundational Skills, L-Language.

**Exhibit 32. Grade 4 Item Difficulty for ELA Reading Items by Tier**

Tier	Strand*	Number of Items	Item Difficulty by Strand	Tier Average
1	RL	9	0.77	0.77
	RI	4	0.78	
	RF	6	0.76	
	L	2	0.77	
2	RL	6	0.55	0.56
	RI	9	0.56	
	RF	20	0.56	
	L	2	0.53	
3	RL	12	0.61	0.57
	RI	10	0.48	
	RF	10	0.60	
	L	2	0.67	
4	RL	6	0.54	0.48
	RI	N/A	N/A	
	RF	10	0.44	
	L	1	0.56	
Total	RL	33	0.63	0.59
	RI	23	0.56	
	RF	46	0.57	
	L	7	0.64	

\*RL- Reading: Literature, RI- Reading: Informational Text, RF- Reading: Foundational Skills, L-Language.

**Exhibit 33. Grade 5 Item Difficulty for ELA Reading Items by Tier**

Tier	Strand*	Number of Items	Item Difficulty by Strand	Tier Average
1	RL	9	0.80	0.79
	RI	3	0.81	
	L	3	0.74	
2	RL	7	0.59	0.55
	RI	10	0.52	
	L	2	0.57	
3	RL	14	0.54	0.53
	RI	8	0.49	
	L	4	0.57	
4	RL	6	0.52	0.50
	RI	N/A	N/A	
	L	1	0.35	
Total	RL	36	0.61	0.59
	RI	21	0.55	
	L	10	0.60	

\*RL- Reading: Literature, RI- Reading: Informational Text, RF- Reading: Foundational Skills, L-Language

**Exhibit 34. Grade 6 Item Difficulty for ELA Reading Items by Tier**

Tier	Strand*	Number of Items	Item Difficulty by Strand	Tier Average
1	RL	N/A	N/A	0.82
	RI	15	0.82	
	L	2	0.82	
2	RL	15	0.61	0.64
	RI	N/A	N/A	
	L	3	0.75	
3	RL	10	0.56	0.53
	RI	10	0.47	
	L	4	0.62	
4	RL	N/A	N/A	0.45
	RI	5	0.40	
	L	1	0.58	
Total	RL	25	0.60	0.63
	RI	30	0.64	
	L	10	0.69	

\*RL- Reading: Literature, RI- Reading: Informational Text, RF- Reading: Foundational Skills, L-Language

**Exhibit 35. Grade 7 Item Difficulty for ELA Reading Items by Tier**

Tier	Strand*	Number of Items	Item Difficulty by Strand	Tier Average
1	RL	N/A	N/A	0.77
	RI	17	0.78	
	L	3	0.75	
2	RL	15	0.62	0.61
	RI	N/A	N/A	
	L	3	0.59	
3	RL	11	0.59	0.53
	RI	12	0.46	
	L	4	0.55	
4	RL	N/A	N/A	0.47
	RI	9	0.47	
	L	1	0.55	
Total	RL	26	0.61	0.60
	RI	38	0.60	
	L	11	0.61	

\*RL- Reading: Literature, RI- Reading: Informational Text, RF- Reading: Foundational Skills, L-Language



**Exhibit 36. Grade 8 Item Difficulty for ELA Reading Items by Tier**

Tier	Strand*	Number of Items	Item Difficulty by Strand	Tier Average
1	RL	3	0.87	0.76
	RI	10	0.72	
	L	3	0.79	
2	RL	10	0.68	0.63
	RI	9	0.58	
	L	3	0.63	
3	RL	10	0.53	0.52
	RI	13	0.52	
	L	4	0.53	
4	RL	N/A	N/A	0.45
	RI	9	0.46	
	L	1	0.37	
Total	RL	23	0.64	0.60
	RI	41	0.57	
	L	11	0.61	

\*RL- Reading: Literature, RI- Reading: Informational Text, RF- Reading: Foundational Skills, L-Language

**Exhibit 37. Grade 11 Item Difficulty for ELA Reading Items by Tier**

Tier	Strand*	Number of Items	Item Difficulty by Strand	Tier Average
1	RL	3	0.84	0.82
	RI	13	0.81	
	L	1	0.84	
2	RL	8	0.65	0.63
	RI	8	0.63	
	L	2	0.56	
3	RL	8	0.57	0.54
	RI	14	0.51	
	L	2	0.66	
4	RL	N/A	N/A	0.51
	RI	7	0.50	
	L	1	0.61	
Total	RL	19	0.64	0.63
	RI	42	0.62	
	L	6	0.65	

\*RL- Reading: Literature, RI- Reading: Informational Text, RF- Reading: Foundational Skills, L-Language

### Summary of Item Difficulty for Writing Items by Strand and Tier

A summary of mean p-values by grade and tier for writing is shown in Exhibits 38-44. The first column of the table indicates the tier. The second column of the table indicates the anchor standard. The next three columns contain the total number of items, item difficulty by anchor standard, and tier average.

Following the theoretical design of the items and tiers, we expect to see the highest p-values at Tier 1 and the lowest p-values at Tier 4. Note the p-values in many instances are based on a single item.

**Exhibit 38. Grade 3 Item Difficulty for ELA Writing Items by Tier**

Tier	Anchor Standard*	Number of Items	Item Difficulty by Anchor Standard	Tier Average
1	TTP	N/A	N/A	0.70
	RBPK	1	0.84	
	PDW	6	0.68	
2	TTP	1	0.78	0.78
	RBPK	N/A	N/A	
	PDW	N/A	N/A	
3	TTP	N/A	N/A	0.55
	RBPK	1	0.55	
	PDW	N/A	N/A	
4	TTP	1	0.57	0.57
	RBPK	N/A	N/A	
	PDW	N/A	N/A	
Total	TTP	2	0.68	0.68
	RBPK	2	0.70	
	PDW	6	0.68	

\*TTP: Text Types & Purposes; RBPK: Research to Build & Present Knowledge; PDW: Production and Distribution of Writing

**Exhibit 39. Grade 4 Item Difficulty for ELA Writing Items by Tier**

Tier	Anchor Standard*	Number of Items	Item Difficulty by Anchor Standard	Tier Average
1	TTP	1	0.71	0.72
	PDW	4	0.73	
2	TTP	1	0.60	0.60
	PDW	N/A	N/A	
3	TTP	1	0.60	0.60
	PDW	N/A	N/A	
4	TTP	1	0.44	0.44
	PDW	N/A	N/A	
Total	TTP	4	0.59	0.66
	PDW	4	0.73	

\*TTP: Text Types & Purposes; PDW: Production and Distribution of Writing

**Exhibit 40. Grade 5 Item Difficulty for ELA Writing Items by Tier**

Tier	Anchor Standard*	Number of Items	Item Difficulty by Anchor Standard	Tier Average
1	TTP	1	0.84	0.72
	PDW	4	0.72	
2	TTP	1	0.72	0.72
	PDW	N/A	N/A	
3	TTP	1	0.44	0.44
	PDW	N/A	N/A	
4	TTP	1	0.46	0.46
	PDW	N/A	N/A	
Total	TTP	4	0.62	0.67
	PDW	4	0.72	

\*TTP: Text Types & Purposes; PDW: Production and Distribution of Writing

**Exhibit 41. Grade 6 Item Difficulty for ELA Writing Items by Tier**

Tier	Anchor Standard*	Number of Items	Item Difficulty by Anchor Standard	Tier Average
1	TTP	1	0.69	0.67
	PDW	5	0.66	
2	TTP	1	0.46	0.46
	PDW	N/A	N/A	
3	TTP	1	0.66	0.66
	PDW	N/A	N/A	
4	TTP	1	0.50	0.50
	PDW	N/A	N/A	
Total	TTP	4	0.58	0.62
	PDW	5	0.66	

\*TTP: Text Types & Purposes; PDW: Production and Distribution of Writing

**Exhibit 42. Grade 7 Item Difficulty for ELA Writing Items by Tier**

Tier	Anchor Standard*	Number of Items	Item Difficulty by Anchor Standard	Tier Average
1	TTP	1	0.84	0.70
	PDW	6	0.68	
2	TTP	1	0.62	0.62
	PDW	N/A	N/A	
3	TTP	1	0.35	0.35
	PDW	N/A	N/A	
4	TTP	1	0.54	0.54
	PDW	N/A	N/A	
Total	TTP	4	0.59	0.64
	PDW	6	0.68	

\*TTP: Text Types & Purposes; PDW: Production and Distribution of Writing

**Exhibit 43. Grade 8 Item Difficulty for ELA Writing Items by Tier**

Tier	Anchor Standard*	Number of Items	Item Difficulty by Anchor Standard	Tier Average
1	PDW	5	0.71	0.74
	RBPK	1	0.88	
2	PDW	1	0.83	0.69
	RBPK	1	0.55	
3	PDW	N/A	N/A	0.69
	RBPK	1	0.69	
4	PDW	N/A	N/A	0.45
	RBPK	1	0.45	
Total	PDW	6	0.73	0.69
	RBPK	4	0.64	

\* PDW: Production and Distribution of Writing; RBPK: Research to Build & Present Knowledge

**Exhibit 44. Grade 11 Item Difficulty for ELA Writing Items by Tier**

Tier	Anchor Standard*	Number of Items	Item Difficulty by Anchor Standard	Tier Average
1	TTP	1	0.70	0.75
	PDW	6	0.75	
2	TTP	1	0.72	0.72
	PDW	N/A	N/A	
3	TTP	N/A	N/A	0.00
	PDW	N/A	N/A	
4	TTP	1	0.48	0.48
	PDW	N/A	N/A	
Total	TTP	3	0.63	0.71
	PDW	6	0.75	

\*TTP: Text Types & Purposes PDW: Production and Distribution of Writing. Note. One operational SR item did not have any classical statistical information provided reducing the total from 10 to 9.

## Conclusion

The item bank analysis supports LDOE in gaining a clearer understanding of the organization and content of the current item bank and the numbers of items by content area, grade level, item type, item tier, and their status (e.g., operationalized, DNU). In addition, the analysis of the LCs for ELA and the NCSC Core Content Connectors (CCCs) and the LSS and the Common Core State Standards establishes connections across the four sets of academic content (see Appendix A: LEAP Connect ELA Assessment Prioritized Content).

In addition to the operational passage and items not appearing on Form 1, the licensed NCSC item bank contains a large number of non-operational reading passages and related items sets, sets of items in grades 3 and 4 measuring the reading foundational skills connectors, and writing items. This vast resource shall support the LDOE in developing multiple ELA forms at all grades, utilizing a core of Form 1 items from 2018 and 2019 administrations. In short, the 2020 ELA operational forms in grades 3-8 and high school shall be able to establish item parameters for up to four additional NCSC passages and item sets and four writing selected-response items. In addition, over the next several years, the reading

foundational items may be replaced by the remaining sets from the NCSC bank. As a result, with this bank, the LDOE may generate up to two unique forms within the next two years and a third back-up form with little to no passage or new item development.

Moving forward, edCount evaluators recommend Rasch analyses be used to evaluate the psychometric properties of the item bank and subsequent results be post-administratively equated each year as additional NCSC bank items are added to the LEAP Connect ELA forms. This recommended approach can (a) facilitate the development of LEAP Connect ELA forms that provide useful data, (b) provide data that can be used confidently for reporting purposes, and (c) provide outcome measures that offer meaningful guidance to educators, parents, and guardians.

## **References**

Hess, Karin K., (December 2011). *Learning Progressions Frameworks Designed for Use with the Common Core State Standards in English Language Arts & Literacy K-12*.

## Appendix A. LEAP Connect ELA Assessment Prioritized Content

### *Prioritized English Language Arts Content by Grade, Strand, and Code*

Codes associated with the prioritized ELA LEAP Connect assessment content are shown in Exhibits 45-58. The exhibits are organized by grade level and include the ELA strand and the codes associated with the related CCSS, the NCSC CCC, LSS, and LC.

#### Exhibit 45. Grade 3 Reading Prioritized Content by Strand and Code

Strand	Common Core State Standard	NCSC Core Content Connector	Louisiana Student Standard	Louisiana Connector
Literature	RL.3.1	3.RL.h1	RL.3.1	LC.RL.3.1a
	RL.3.1	3.RL.i2	RL.3.1	LC.RL.3.1b
	RL.3.2	3.RL.k2	RL.3.2	LC.RL.3.2a
Informational	RI.3.2	3.RI.i2	RI.3.2	LC.RI.3.2a
	RI.3.2	3.RI.k5	RI.3.2	LC.RI.3.2b
	RI.3.5	3.RI.h1	RI.3.5	LC.RI.3.5a
	RI.3.7	3.RI.h4	RI.3.7	LC.RI.3.7a
Foundational Skills	RF.3.4	3.RWL.h2	RF.3.4	LC.RF.3.4b
Language	L.3.4.A	3.RWL.i2	L.3.4	LC.L.3.4a

#### Exhibit 46. Grade 3 Writing Prioritized Content Strand and Code

Strand	Common Core State Standard	NCSC Core Content Connector	Louisiana Student Standard	Louisiana Connector
Text Types Informative/ Explanatory	W.3.2	3.WI.p1	W.3.2	LC.W.3.2c
Research to Build & Present Knowledge	W.3.8	3.WI.l4	W.3.8	LC.W.3.8g
Production & Distribution of Writing	W.3.4	3.WL.o1	W.3.4	LC.W.3.4

#### Exhibit 47. Grade 4 Reading Prioritized Content by Strand and Code

Strand	Common Core State Standard	NCSC Core Content Connector	Louisiana Student Standard	Louisiana Connector
Literature	RL.4.1	4.RL.i1	RL.4.1	LC.RL.4.1a
	RL.4.2	4.RL.k2	RL.4.2	LC.RL.4.2b
	RL.4.3	4.RL.l1	RL.4.3	LC.RL.4.3b
Informational	RI.4.2	4.RI.i3	RI.4.2	LC.RI.4.2a
	RI.4.7	4.RI.h4	RI.4.7	LC.RI.4.7a
	RI.4.7	4.RI.l1	RI.4.7	LC.RI.4.7c
Foundational Skills	RF.4.3	4.RWL.h2	RF.4.3	LC.RF.4.3b
Language	L.4.4.A	4.RWL.i2	L.4.4	LC.L.4.4a
	L.4.6	4.RWL.j1	L.4.6	LC.L.4.6a

**Exhibit 48. Grade 4 Writing Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Text Types Informative/ Explanatory	W.4.2	4.WI.p1	W.4.2	LC.W.4.2c
	W.4.2	4.WI.q1	W.4.2	LC.W.4.2f
Production & Distribution of Writing	W.4.4	4.WL.o1	W.4.4	LC.W.4.4a

**Exhibit 49. Grade 5 Reading Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Literature	RL.5.1	5.RL.b1	RL.5.1	LC.RL.5.1a
	RL.5.2	5.RL.c2	RL.5.2	LC.RL.5.2b
	RL.5.3	5.RL.d1	RL.5.3	LC.RL.5.3a
Informational	RI.5.2	5.RI.c4	RI.5.2	LC.RI.5.2a
	RI.5.5	5.RI.d5	RI.5.5	LC.RI.5.5c
	RI.5.8	5.RI.e2	RI.5.8	LC.RI.5.8a
Language	L.5.4.A	5.RWL.a2	L.5.4	LC.L.5.4a

**Exhibit 50. Grade 5 Writing Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Text Types Informative/ Explanatory	W.5.2	5.WI.b3	W.5.2	LC.W.5.2b
	W.5.2	5.WI.d1	W.5.2	LC.W.5.2c
Production & Distribution of Writing	W.5.4	5.WL.h1	W.5.4	LC.W.5.4

**Exhibit 51. Grade 6 Reading Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Literature	RL.6.1	6.RL.b2	RL.6.1	LC.RL.6.1a
	RL.6.1	6.RL.b3	RL.6.1	LC.RL.6.1b
	RL.6.2	6.RL.c3	RL.6.2	LC.RL.6.2c
Informational	RI.6.2	6.RI.c2	RI.6.2	LC.RI.6.2
	RI.6.3	6.RI.g4	RI.6.3	LC.RI.6.3d
	RI.6.7	6.RI.b4	RI.6.7	LC.RI.6.7b
	RI.6.8	6.RI.g6	RI.6.8	LC.RI.6.8b
Language	L.6.4.A	6.RWL.a1	L.5.4	LC.L.6.4a
	L.6.6	6.RWL.c1	L.6.6	LC.L.6.6a

**Exhibit 52. Grade 6 Writing Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Text Types Narrative	W.6.3	6.WL.c1	W.6.3	LC.W.6.3b
	W.6.3	6.WL.c3	W.6.3	LC.W.6.3d
Production & Distribution of Writing	W.6.4	6.WI.h2	W.6.4	LC.W.6.4

**Exhibit 53. Grade 7 Reading Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Literature	RL.7.1	7.RL.i2	RL.7.1	LC.RL.7.1b
	RL.7.2	7.RL.j1	RL.7.2	LC.RL.7.2b
Informational	RI.7.1	7.RI.j1	RI.7.1	LC.RI.7.1
	RI.7.3	7.RI.j5	RI.7.3	LC.RI.7.3
	RI.7.8	7.RI.k4	RI.7.8	LC.RI.7.8b
	RI.7.9	7.RI.l1	RI.7.7	LC.RI.7.7
Language	L.7.4.A	7.RWL.g1	L.7.4	LC.L.7.4a

**Exhibit 54. Grade 7 Writing Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Text Types Narrative	W.7.3	7.WL.l1	W.7.3	LC.W.7.3e
	W.7.3	7.WL.o1	W.7.3	LC.W.7.3f
Production & Distribution of Writing	W.7.4	7.WI.o1	W.7.4	LC.W.7.4

**Exhibit 55. Grade 8 Reading Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Literature	RL.8.1	8.RL.i2	RL.8.1	LC.RL.8.1b
	RL.8.2	8.RL.j2	RL.8.2	LC.RL.8.2b
Informational	RI.8.1	8.RI.j1	RI.8.1	LC.RI.8.1a
	RI.8.5	8.RI.k2	RI.8.5	LC.RI.8.5d
	RI.8.8	8.RI.k4	RI.8.8	LC.RI.8.8a
	RI.8.9	8.RI.l1	RI.8.9	LC.RI.8.9
Language	L.8.4.A	8.RWL.g1	L.8.4	LC.L.8.4a
	L.8.6	8.RWL.i1	L.8.6	LC.L.8.6a



**Exhibit 56. Grade 8 Writing Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Text Types Narrative	W.8.1	8.WP.k2	W.8.1	LC.W.8.1b
Research to Build & Present Knowledge	W.8.8	8.WP.j1	W.8.8	LC.W.8.8a
Production & Distribution of Writing	W.8.4	8.WI.o1	W.8.4	LC.W.8.4

**Exhibit 57. Grade 11 Reading Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Literature	RL.11-12.1	1112.RL.b1	RL.11-12.1	LC.RL.11-12.1a
	RL.11-12.5	1112.RL.d1	RL.11-12.5	LC.RL.11-12.5
Informational	RI.11-12.1	1112.RI.b1	RI.11-12.1	LC.RI.11-12.1a
	RI.11-12.2	1112.RI.b5	RI.11-12.2	LC.RI.11-12.2c
	RI.11-12.6	1112.RI.d1	RI.11-12.6	LC.RI.11-12.6a
	RI.11-12.7	1112.RI.e1	RI.11-12.7	LC.RI.11-12.7
	RI.11-12.6	1112.RWL.c3	RI.11-12.6	LC.L.11-12.6d
Language	L.11-12.4.A	1112.RWL.b1	L.11-12.4	LC.L.11-12.4a

**Exhibit 58. Grade 11 Writing Prioritized Content by Strand and Code**

<b>Strand</b>	<b>Common Core State Standard</b>	<b>NCSC Core Content Connector</b>	<b>Louisiana Student Standard</b>	<b>Louisiana Connector</b>
Text Types Narrative	W.11-12.2	1112.WI.b2	W.11-12.2	LC.W.11-12.2b
	W.11-12.2	1112.WI.b4	W.11-12.2	LC.W.11-12.2c
Production & Distribution of Writing	W.11-12.4	1112.WP.f1	W.11-12.4	LC.W.11-12.4

## **Appendix D. Item Bank Report for Mathematics**

### **Purpose**

edCount proposed a review of all National Center State Collaborative (NCSC) mathematics assessment items licensed by Louisiana’s Department of Education (LDOE). This review will support the creation of a bank of items that are easily accessible and identified by grade, subject, and assessed skill within the Louisiana Connectors (LC). To improve alignment and highlight current gaps in assessed skills, edCount classified items based on assessed skills within the LCs and identified domains and item tiers that may require additional sampling.

The review of existing items is a crucial step in informing several development processes in the 2019 and 2020 assessment cycles and beyond. The analyses will: (a) inform item development; (b) ensure that the assessment guides and the assessment frameworks appropriately mirror the content coverage of the assessment; and (c) provide necessary technical documentation related to the alignment of the NCSC assessment items to the LCs in mathematics and ELA.

### **Background**

LDOE licensed the NCSC mathematics and ELA assessment items, grades 3-8, for the 2017-2018 assessment year and will be administering these same grades along with grade 11 for both subjects in the 2018-2019 assessment year. Prior to the development of the 2017-2018 LEAP Connect Assessment, the LCs were also ratified in a separate process. For purposes of alignment, accounting, and reporting, edCount completed a review of all NCSC items in relation to the LCs.

The mathematics and ELA items licensed through NCSC are aligned to ten prioritized Core Content Connectors (CCCs), which constitute the framework for the NCSC assessment. The prioritized NCSC content is measured by a percent distribution of items based on the number of clusters within a domain. Determining the percent distribution of LCs measured by each assessment form and across all items in a similar manner to the measurement of the NCSC prioritized CCCs will inform sampling decisions in future development years.

### **Item Bank Analysis Results**

The results of the item bank analysis for all licensed NCSC mathematics items are presented in this report. The results section begins with a brief description of total number of items found at each grade. Following the presentation of item totals is a summary of the number of items by grade, tier, and prioritized LC. A discussion of the math items by type comes next, followed by a brief description of the distribution of items. Finally, the analysis concludes with a summary of item difficulty by tier and strand for both reading and writing items.

### **Disaggregation of the Licensed NCSC Mathematics Item Bank**

Disaggregated item-level information by grade displays the total number of items on operational forms (NCSC Forms 1-4), as well as, the non-operational items (see Exhibit 1). Items considered as ‘non-operational’ are items which were considered as ‘enemies’ to existing items on Forms 1-4 and not used operationally. In other words, NCSC developed each item as a family of items written to Tiers 1 – 4. If the Tier 1 version of an item appeared on a form, then the Tiers 2-4 could not appear on the same form. Therefore, these items are considered “not ready” to be included in an operational form; however, they can field tested. In addition, items indicated in the files as “Do not Use” (DNU) are not considered available for use.

**Exhibit 1. Analysis of Mathematics Items by Grade**

Grade	Subject	Items on Forms	Non-Operational Items	DNU
3	Math	100	68	12
4	Math	100	68	46
5	Math	100	68	32
6	Math	100	68	4
7	Math	100	68	18
8	Math	100	68	22
11	Math	70	50	21

**Mathematics Items by Domain and Prioritized LCs**

Mathematics grade-specific tables are organized by domain and the prioritized LC (see Exhibits 2-8). Each table summarizes the number of operational mathematics items, including selected-response and constructed-response items by tier as well as the total number of items per LC in a domain.

**Exhibit 2. Grade 3 Math Item by Tier**

Strand	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Operations & Algebraic Thinking	LC.3.OA.C.7c	4	4	4	4	16
	LC.3.OA.D.8b	4	4	4	4	16
	LC.3.OA.D.9c	5	5	5	5	20
Numbers & Operations in Base Ten	LC.3.NBT.A.1	4	4	4	4	16
	LC.3.NBT.A.2b	5	5	5	5	20
Numbers & Operations - Fractions	LC.3.NF.A.1c	4	4	4	4	16
	LC.3.NF.A.3a	4	4	4	4	16
Measurement & Data	LC.3.MD.B.3a	4	4	4	4	16
	LC.3.MD.C.6	4	4	4	4	16
Geometry	LC.3.G.A.2	4	4	4	4	16
Total		42	42	42	42	168

**Exhibit 3. Grade 4 Math Item by Tier**

Domain	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Operations & Algebraic Thinking	LC.4.OA.A.2a	4	4	4	4	16
	LC.4.OA.A.2b	5	5	5	5	20
	LC.4.OA.A.3a	4	4	4	4	16
Numbers & Operations in Base Ten	LC. 4.NBT.A.3	4	4	4	4	16
Numbers & Operations - Fractions	LC.4.NF.A.1	4	4	4	4	16
	LC.4.NF.A.2a	4	4	4	4	16
	LC.4.NF.A.2b	4	4	4	4	16
Measurement & Data	LC.4.MD.A.3	4	4	4	4	16
	LC.4.MD.B.4a	5	5	5	5	20
Geometry	LC.4.GA.2a	4	4	4	4	16
Total		42	42	42	42	168

**Exhibit 4. Grade 5 Math Items by Tier**

Domain	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Operations & Algebraic Thinking	LC.5.OA.B.3c	4	4	4	4	16
Numbers & Operations in Base Ten	LC.5.NBT.A.3a	4	4	4	4	16
	LC.5.NBT.A.4a	4	4	4	4	16
	LC.5.NBT.B.5	4	4	4	4	16
	LC.5.NBT.B.7	4	4	4	4	16
Numbers & Operations Fractions	LC.5.NF.A.2	4	4	4	4	16
	LC.5.NF.B.5	4	4	4	4	16
Measurement & Data	LC.5.MD.A.1b	5	5	5	5	20
	LC.5.MD.A.1d	4	4	4	4	16
Geometry	LC.5.G.A.1c	5	5	5	5	20
Total		42	42	42	42	168

**Exhibit 5. Grade 6 Math Items by Tier**

Domain	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Ratios & Proportional Relationships	LC.6.RP.A.1c	4	4	4	4	16
	LC.6.RP.A.3d	4	4	4	4	16
	LC.6.RP.A.3e	5	5	5	5	20
The Number System	LC.6.NS.B.3	4	4	4	4	16
	LC.6.NS.C.5	4	4	4	4	16
	LC.6.NS.C.6d	4	4	4	4	16
Expressions & Equations	LC.6.EE.B.7a	5	5	5	5	20
	LC.6.EE.B.7b	4	4	4	4	16
Geometry	LC.6.G.A.1c	4	4	4	4	16
Statistics & Probability	LC.6.SP.B.5d	4	4	4	4	16
Total		42	42	42	42	168

**Exhibit 6. Grade 7 Math Items by Tier**

Domain	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Ratios & Proportional Relationships	LC.7.RP.A.2a	4	4	4	4	16
	LC.7.RP.A.2b	4	4	4	4	16
	LC.7.RP.A.3d	4	4	4	4	16
	LC.7.RP.A.3e	4	4	4	4	16
The Number System	LC.7.NS.A.2a	5	5	5	5	20
	LC.7.NS.A.2b	4	4	4	4	16
Expressions & Equations	LC.7.EE.B.4c	4	4	4	4	16
Geometry	LC.7.G.B.4	4	4	4	4	16
	LC.7.G.B.6b	5	5	5	5	20
Statistics & Probability	LC.7.SP.B.4b	4	4	4	4	16
Total		42	42	42	42	168

**Exhibit 7. Grade 8 Math Items by Tier**

Domain	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
The Number System	LC.8.NS.A.2	5	5	5	5	20
Expressions & Equations	LC.8.EE.B.5	5	5	5	5	20
	LC.8.EE.C.7	4	4	4	4	16
Functions	LC.8.F.B.4	4	4	4	4	16
	LC.8.F.B.5c	4	4	4	4	16
Geometry	LC.8.G.A.2	4	4	4	4	16
	LC.8.G.A.4b	4	4	4	4	16
	LC.8.G.C.9	4	4	4	4	16
Statistics & Probability	LC.8.SP.A.1a	4	4	4	4	16
	LC.8.SP.A.1c	4	4	4	4	16
Total		42	42	42	42	168

**Exhibit 8. Grade 11 Math Items by Tier**

Domain	Louisiana Connector	Tier 1	Tier 2	Tier 3	Tier 4	Total
Number & Quantity	LC.A1: N-Q.A.1b	4	4	4	4	16
	LC.A1: A-CED.A.1	4	4	4	4	16
Algebra	LC.A1: A-CED.A.4	4	4	4	4	16
	LC.A1: A-REI.D.10	4	4	4	4	16
Geometry	LC.GM: G-SRT.B.5a	4	4	4	4	16
Statistics & Probability	LC.A1: S-ID.A.2a	6	6	6	6	24
	LC.A1: S-ID.C.7	4	4	4	4	16
Total		30	30	30	30	120

In high school mathematics, 48 items from the NCSC bank cannot be used because they are linked to core connectors that measure Algebra II content, which is not assessed on the LEAP Connect mathematics high school assessment to mirror the LEAP 2025 assessment.

*Percent Distribution of Items by Domain*

The focus of the analysis for percent distribution is the breadth of coverage across all content within both the NCSC prioritized CCCs, as well as the LCs. The tables below describe the number of items and LCs in each domain, as well as the number of LCs measured on the assessment. Finally, the percent distribution of each domain on the NCSC forms and currently on the 2020 LEAP Connect mathematics forms. edCount will use the results of this analysis to improve the range of coverage across the mathematics domains in each grade (Exhibit 9).

**Exhibit 9. Grade 3 Percent Distribution by Domain**

Domain	Louisiana Connector	Number of Items	LCs		Percent Distribution	
			Measured	Total	NCSC	LC
Operations & Algebraic Thinking	LC.3.OA.C.7c	52	3	17	30	29
	LC.3.OA.D.8b					
	LC.3.OA.D.9c					
Number & Operations Base Ten	LC.3.NBT.A.1	36	2	5	20	17
	LC.3.NBT.A.2b					
Number & Operations – Fractions	LC.3.NF.A.1c	32	2	12	20	23
	LC.3.NF.A.3a					
Measurement & Data	LC.3.MD.B.3a	32	2	24	20	20
	LC.3.MD.C.6					
Geometry	LC.3.G.A.2	16	1	2	10	11
Total	10	168	10	60	100	100

**Exhibit 10. Grade 4 Percent Distribution by Domain**

Domain	Louisiana Connector	Number of Items	LCs		Percent Distribution	
			Measured	Total	NCSC	LC
Operations & Algebraic Thinking	LC.4.OA.A.2a LC.4.OA.A.2b LC.4.OA.A.3a	52	3	9	30	29
Numbers & Operations in Base Ten	LC. 4.NBT.A.3	16	1	8	10	12
Numbers & Operations – Fractions	LC.4.NF.A.1 LC.4.NF.A.2a LC.4.NF.A.2b	48	3	15	30	26
Measurement & Data	LC.4.MD.A.3 LC.4.MD.B.4a	36	1	14	20	21
Geometry	LC.4.GA.2a	16	1	7	10	12
<b>Total</b>	<b>10</b>	<b>168</b>	<b>9</b>	<b>53</b>	<b>100</b>	<b>100</b>

**Exhibit 11. Grade 5 Percent Distribution by Domain**

Domain	Louisiana Connector	Number of Items	LCs		Percent Distribution	
			Measured	Total	NCSC	LC
Operations & Algebraic Thinking	LC.5.OA.B.3c	16	1	6	10	9
Numbers & Operations in Base Ten	LC.5.NBT.A.3a LC.5.NBT.A.4a LC.5.NBT.B.5 LC.5.NBT.B.6a LC.5.NBT.B.7	64	4	12	40	40
Numbers & Operations – Fractions	LC.5.NF.A.2 LC.5.NF.B.5	32	2	8	20	20
Measurement & Data	LC.5.MD.A.1b LC.5.MD.A.1d	36	2	10	20	20
Geometry	LC.5.G.A.1c	20	1	6	10	11
<b>Total</b>	<b>11</b>	<b>168</b>	<b>10</b>	<b>42</b>	<b>100</b>	<b>100</b>

**Exhibit 12. Grade 6 Percent Distribution by Domain**

Domain	Louisiana Connector	Number of Items	LCs		Percent Distribution	
			Measured	Total	NCSC	LC
Ratios & Proportional Relationships	LC.6.RP.A.1c LC.6.RP.A.3d LC.6.RP.A.3e	52	3	14	30	31
The Number System	LC.6.NS.B.3 LC.6.NS.C.5 LC.6.NS.C.6d	48	3	13	30	31
Expressions & Equations	LC.6.EE.B.7a LC.6.EE.B.7b	36	2	12	20	20
Geometry	LC.6.G.A.1c	16	1	8	10	9
Statistics & Probability	LC.6.SP.B.5d	16	1	13	10	9
Total	10	168	10	60	100	100

**Exhibit 13. Grade 7 Percent Distribution by Domain**

Domain	Louisiana Connector	Number of Items	LCs		Percent Distribution	
			Measured	Total	NCSC	LC
Ratios & Proportional Relationships	LC.7.RP.A.2a LC.7.RP.A.2b LC.7.RP.A.3d LC.7.RP.A.3e	64	4	12	40	41
The Number System	LC.7.NS.A.2a LC.7.NS.A.2b	36	2	8	20	18
Expressions & Equations	LC.7.EE.B.4c	16	1	8	10	9
Geometry	LC.7.G.B.4 LC.7.G.B.6b	36	2	13	20	20
Statistics & Probability	LC.7.SP.B.4b	16	1	13	10	12
Total	10	168	10	54	100	100

**Exhibit 14. Grade 8 Percent Distribution by Domain**

Domain	Louisiana Connector	Number of Items	LCs		Percent Distribution	
			Measured	Total	NCSC	LC
The Number System	LC.8.NS.A.2	20	1	3	10	11
Expressions & Equations	LC.8.EE.B.5 LC.8.EE.C.7	36	2	11	20	17
Functions	LC.8.F.B.4 LC.8.F.B.5c	32	2	7	20	20
Geometry	LC.8.G.A.2 LC.8.G.C.9	32	2	14	30	32
Statistics & Probability	LC.8.SP.A.1a LC.8.SP.A.1c	32	2	6	20	20
Total	9	152	9	41	100	100



**Exhibit 15. Grade 11 Percent Distribution by Domain**

Domain	Louisiana Connector	Number of Items	LCs		Percent Distribution	
			Measured	Total	NCSC	LC
Number & Quantity	LC.A1: N-Q.A.1b	36	2	4	20	17
Algebra & Functions	LC.A1: A-CED.A.1	33	2	31	50	43
	LC.A1: A-REI.D.10					
Geometry	LC.GM: G-SRT.B.5a	16	1	11	10	11
Statistics & Probability	LC.A1: S-ID.A.2a	40	2	11	20	29
	LC.A1: S-ID.C.7					
Total	7	125	7	57	100	100

High school mathematics distribution demonstrates the initial transition away from the NCSC form construction to a better representation of the Louisiana content in the current distribution. The current LC percent distribution does not include Algebra II to align with the content measured in the LEAP 2025.

***Item Difficulty by Grade***

edCount conducted an analysis of item difficulty statistics produced by NCSC for the 2015 mathematics items. edCount received an incomplete statistical data set from NCSC that analyzed a sub-set of the mathematics in each grade. The number of items reviewed are noted for each grade. A summary of the number of items in each domain, along with the average item difficulty for that subset of items appears below. We will continue to update the item bank with relevant item statistics as they are collected.

**Exhibit 16. Grade 3 Math Item Difficulty by Tier**

Tier	Domain*	Number of Items	Item Difficulty by Domain	Tier Average
1	G	2	.74	.69
	MD	3	.67	
	NBT	4	.66	
	NF	3	.71	
	OA	4	.66	
2	G	3	.59	.51
	MD	7	.53	
	NBT	3	.44	
	NF	8	.41	
	OA	9	.57	
3	G	4	.57	.47
	MD	4	.50	
	NBT	6	.47	
	NF	3	.40	
	OA	7	.41	
4	G	1	.59	.43
	MD	2	.43	
	NBT	2	.42	
	NF	2	.39	
	OA	3	.32	
Total	G	10	.61	.51
	MD	16	.54	
	NBT	15	.51	
	NF	16	.40	
	OA	23	.50	

\*G- Geometry, MD-Measurement and Data, NBT-Numbers and Operations Base Ten, NF-Numbers and Operations Fractions, OA-Operations and Algebraic Thinking

The analysis of grade 3 consisted of 80 items across tiers 1-4. As shown in Exhibit 16, the item difficulty for tiers 1 and 2 across domains is higher than expected for these less cognitively complex items. For field testing, a portion of tier 1 and 2 items from each domain that demonstrated a higher level of difficulty will be modified to try to achieve more of a spectrum of difficulty within the tiers and domains. Similarly, edCount will work to modify some of the tier 3 and 4 items, so they are slightly more complex to increase the range of item difficulty within these tiers.

**Exhibit 17. Grade 4 Math Item Difficulty by Tier**

Tier	Domain*	Number of Items	Item Difficulty by Domain	Tier Average
1	G	2	.78	.68
	MD	4	.73	
	NBT	2	.61	
	NF	6	.62	
	OA	3	.68	
2	G	4	.62	.45
	MD	7	.37	
	NBT	3	.50	
	NF	6	.37	
	OA	7	.39	
3	G	4	.50	.43
	MD	4	.44	
	NBT	6	.41	
	NF	3	.39	
	OA	7	.41	
4	G	1	.19	.37
	MD	2	.45	
	NBT	2	.45	
	NF	2	.41	
	OA	3	.36	
Total	G	11	.57	.48
	MD	17	.48	
	NBT	13	.49	
	NF	17	.45	
	OA	20	.43	

\*G- Geometry, MD-Measurement and Data, NBT-Numbers and Operations Base Ten, NF-Numbers and Operations Fractions, OA-Operations and Algebraic Thinking

The analysis of grade 4 consisted of 78 items across tiers 1-4. As shown in Exhibit 17, the item difficulty for tiers 1 and 2 across domains is higher than expected for these less cognitively complex items. However, the tier 4 items are much easier than expected for the more cognitively demanding tasks. To improve the spectrum of difficulty for items in tiers 1 and 4, edCount staff will perform tier reversals through specific modifications to the items to either increase or decrease cognitive complexity and then field test the items during the 2020 assessment year.

**Exhibit 18. Grade 5 Math Item Difficulty by Tier**

Tier	Domain*	Number of Items	Item Difficulty by Domain	Tier Average
1	G	1	.68	.68
	MD	4	.68	
	NBT	7	.73	
	NBF	4	.60	
	OA	1	.70	
2	G	4	.45	.46
	MD	6	.40	
	NBT	10	.48	
	NBF	7	.45	
	OA	1	.53	
3	MD	5	.37	.38
	NBT	12	.39	
	NBF	4	.40	
	OA	4	.36	
4	MD	1	.37	.38
	NBT	1	.41	
	NBF	1	.47	
	OA	7	.27	
Total	G	5	.50	.56
	MD	16	.46	
	NBT	30	.49	
	NBF	16	.48	
	OA	13	.42	

\*G- Geometry, MD-Measurement and Data, NBT-Numbers and Operations Base Ten, Numbers and Operations Fractions, OA-Operations and Algebraic Thinking

The analysis of grade 5 consisted of 80 items across tiers 1-4. As shown in Exhibit 18, the item difficulty for tiers 1 across domains is higher than expected for less cognitively complex items. However, the tier 3 and 4 items are much easier than expected for the more cognitively demanding tasks. To improve the spectrum of difficulty for items in tiers 1, 3, and 4, edCount staff will perform tier reversals through specific modifications to the items to either increase or decrease cognitive complexity and then field test the items during the 2020 assessment year

**Exhibit 19. Grade 6 Math Item Difficulty by Tier**

Tier	Domain*	Number of Items	Item Difficulty by Domain	Tier Average
1	G	2	.76	.74
	EE	2	.82	
	RP	5	.74	
	SP	2	.76	
	NS	4	.64	
2	G	5	.56	.53
	EE	2	.48	
	RP	7	.59	
	SP	3	.44	
	NS	11	.58	
3	G	6	.45	.47
	EE	3	.43	
	RP	11	.47	
	SP	1	.49	
	NS	7	.52	
4	G	2	.41	.43
	EE	1	.38	
	RP	2	.40	
	SP	3	.50	
	NS	8	.44	
Total	G	15	.52	.54
	EE	8	.53	
	RP	25	.55	
	SP	8	.55	
	NS	30	.56	

\*G- Geometry, EE-Expressions and Equations, RP-Ratio and Proportions, SP-Statistics and Probability, NS-Number System

The analysis of grade 6 consisted of 86 items across tiers 1-4. As shown in Exhibit 19, the item difficulty for tiers 1 and 2 across domains is higher than expected for these less cognitively complex items. However, the tier 4 items are easier than expected for the more cognitively demanding tasks. To improve the spectrum of difficulty for items in tiers 1, 2, and 4, edCount staff will perform tier reversals through specific modifications to the items to either increase or decrease cognitive complexity and then field test the items during the 2020 assessment year. Additional item development for tier 1 may be needed to create a sufficient number of items with a p value < .5.

**Exhibit 20. Grade 7 Math Item Difficulty by Tier**

Tier	Domain*	Number of Items	Item Difficulty by Domain	Tier Average
1	G	2	.73	.74
	EE	3	.69	
	RP	6	.76	
	SP	1	.88	
	NS	2	.63	
2	G	3	.48	.52
	EE	7	.58	
	RP	11	.52	
	SP	4	.61	
	NS	7	.42	
3	G	4	.48	.45
	EE	6	.45	
	RP	11	.42	
	SP	3	.49	
	NS	5	.44	
4	G	1	.53	.46
	EE	1	.37	
	RP	1	.49	
	NS	2	.46	
Total	G	10	.53	.53
	EE	17	.54	
	RP	29	.53	
	SP	8	.59	
	NS	16	.46	

\*G- Geometry, EE-Expressions and Equations, RP-Ratio and Proportions, SP-Statistics and Probability, NS-Number System

The analysis of grade 7 consisted of 80 items across tiers 1-4. As shown in Exhibit 20, the item difficulty for tiers 1 and 2 across domains is higher than expected for these less cognitively complex items. However, the tier 4 items are easier than expected for the more cognitively demanding tasks. To improve the spectrum of difficulty for items in tiers 1 and 4, edCount staff will perform tier reversals through specific modifications to the items to either increase or decrease cognitive complexity and then field test the items during the 2021 assessment year.

**Exhibit 21. Grade 8 Math Item Difficulty by Tier**

Tier	Domain*	Number of Items	Item Difficulty by Domain	Tier Average
1	EE	2	.53	.67
	F	4	.64	
	G	4	.73	
	SP	4	.66	
	NS	2	.78	
2	EE	5	.40	.48
	F	5	.52	
	G	9	.55	
	SP	6	.49	
	NS	2	.42	
3	EE	6	.43	.45
	F	6	.39	
	G	10	.47	
	SP	5	.48	
	NS	3	.43	
4	EE	1	.45	.42
	F	1	.48	
	G	1	.42	
	SP	2	.38	
	NS	1	.37	
Total	EE	14	.44	.50
	F	16	.50	
	G	24	.54	
	SP	17	.51	
	NS	8	.51	

\* EE-Expressions and Equations, F-Functions, G-Geometry, SP-Statistics and Probability, NS-Number System

The analysis of grade 8 consisted of 79 items across tiers 1-4. As shown in Exhibit 21, the item difficulty for tiers 1 across domains is higher than expected for less cognitively complex items. For field testing, a portion of tier 1 and 2 items from each domain that demonstrated a higher level of difficulty will be modified to try to achieve more of a spectrum of difficulty within the tiers and domains. Similarly, edCount will work to modify some of the tier 3 and 4 items, so they are slightly more complex to increase the range of item difficulty within these tiers.

**Exhibit 22. Grade 11 Math Item Difficulty by Tier**

Tier	Domain*	Number of Items	Item Difficulty by Domain	Tier Average
1	AF	8	.70	.68
	G	1	.56	
	NQ	3	.65	
	SP	2	.69	
2	AF	17	.49	.47
	G	2	.37	
	NQ	6	.45	
	SP	5	.43	
3	AF	14	.46	.43
	G	4	.37	
	NQ	6	.40	
	SP	6	.41	
4	AF	2	.44	.39
	G	1	.34	
	NQ	1	.36	
	SP	2	.36	
Total	AF	41	.52	.49
	G	8	.39	
	NQ	16	.46	
	SP	15	.45	

\*AF-Algebra and Functions, G-Geometry, NQ-Number and Quantity, SP-Statistics and Probability

The analysis of grade 11 consisted of 80 items across tiers 1-4. As shown in Exhibit 22, the item difficulty for tiers 1 across domains is higher than expected for less cognitively complex items. However, the tier 4 items are easier than expected for the more cognitively demanding tasks. To improve the spectrum of difficulty for items in tiers 1 and 4, edCount staff will perform tier reversals through specific modifications to the items to either increase or decrease cognitive complexity and then field test the items during the 2020 assessment year.



## Appendix E. Passage and Item Review Checklists

### LEAP Connect Bias and Sensitivity Checklist

Evaluate each item associated with a tier against the following bias and sensitivity criteria by indicating a checkmark (✓) or NA (not applicable). All items are edited for errors in grammar, punctuation, capitalization, and spelling to promote clarity.

#### Criteria to Evaluate Bias and Sensitivity

Test Items	Criteria	Tier 1	Tier 2	Tier 3	Tier 4
<b>Bias</b>	<input type="checkbox"/> does not require previous knowledge or familiarity				
	<input type="checkbox"/> does not include non-global experiences				
	<input type="checkbox"/> does not include dual meaning words				
	<input type="checkbox"/> does not include colloquialisms				
	<input type="checkbox"/> does not use vocabulary that may be considerably more familiar to some groups than others				
	<input type="checkbox"/> does not favor a population of students				
<b>Sensitivity</b>	<input type="checkbox"/> avoids references to stereotypes, socioeconomic status, and sexuality				
	<input type="checkbox"/> avoids references to race or ethnicity				
	<input type="checkbox"/> avoids religious topics, holidays, or birthdays				
	<input type="checkbox"/> avoids graphic violence, war, or death				
	<input type="checkbox"/> uses appropriate terminology to refer to describe individuals or groups				
	<input type="checkbox"/> avoids language that might be offensive to any group				
	<input type="checkbox"/> shows awareness of students' physicality and disability				

## LEAP Connect Quality Item Writing Checklist

Evaluate each item against the following item writing criteria. All items are edited for errors in grammar, punctuation, capitalization, and spelling to promote clarity.

### Criteria to Evaluate Item Quality

Test Item Elements	Criteria
Item Stimulus	<input type="checkbox"/> focuses on important concepts from the passage
	<input type="checkbox"/> uses simple sentence structure with an emphasis on clarity
	<input type="checkbox"/> written in present tense as appropriate
	<input type="checkbox"/> reduces vocabulary load and non-construct subject area language
	<input type="checkbox"/> limits use of pronouns
	<input type="checkbox"/> chunks and segments the text appropriately
	<input type="checkbox"/> does not include any extraneous content
	<input type="checkbox"/> provides definitions of terminology relevant to the item or the model
	<input type="checkbox"/> models a correct response
	<input type="checkbox"/> consider complexity of problem context and reasoning required
	<input type="checkbox"/> includes appropriate background information about the item context
	<input type="checkbox"/> considers use of visual and linguistic supports in model
Visuals	<input type="checkbox"/> only includes visuals necessary to convey item content
	<input type="checkbox"/> are relevant to the assessed construct (e.g., diagram, graphs, tables, charts)
	<input type="checkbox"/> are simple and do not include unnecessary detail
	<input type="checkbox"/> includes descriptions to support access for all students
Response Options	<input type="checkbox"/> include only one correct response
	<input type="checkbox"/> written in present tense as appropriate
	<input type="checkbox"/> are plausible
	<input type="checkbox"/> are arranged in a logical order
	<input type="checkbox"/> are of appropriate complexity and length with minimum verbiage and written plainly
	<input type="checkbox"/> avoid clueing correct answer

## LEAP Connect Universal Design for Assessment and Learning and Item Accessibility Checklist

Evaluate each item associated with a tier against the following Universal Design for Assessment and Learning and item accessibility criteria by indicating a checkmark (✓) or NA (not applicable). All items are edited for errors in grammar, punctuation, capitalization, and spelling to promote clarity.

### Criteria to Evaluate Universal Design for Assessment and Learning

Assessment Elements	Criteria	Tier 1	Tier 2	Tier 3	Tier 4
Universal Design for Assessment	<input type="checkbox"/> allow the widest possible range of students to demonstrate what they know and can do				
	<input type="checkbox"/> align to learning goals and the construct or focus is clear				
	<input type="checkbox"/> offer relevant, authentic opportunities for assessment; are personally relatable and culturally relevant				
	<input type="checkbox"/> consider supports that help a test taker persist through a challenge to engage with the assessment items				
	<input type="checkbox"/> reduce the barriers that do not tie to the learning goals that are measured				
	<input type="checkbox"/> minimize construct-irrelevant barriers for all test takers				
	<input type="checkbox"/> support learner variability through flexible assessments (e.g., accommodations, use of assistive technologies; support resources)				
Universal Design for Learning	<input type="checkbox"/> incorporate the three principles of Universal Design for Learning: <ol style="list-style-type: none"> <li>1. Action and Expression (the “how” of learning)</li> <li>2. Representation (the “what” of learning), and</li> <li>3. Engagement (the “why” of learning).</li> </ol>				

CAST (2020). *UDL Tips for Assessment*. Wakefield, MA: Author. Retrieved from <http://www.cast.org/publications/2020/udl-tips-assessments>

CAST (2018) *Universal Design for Learning Guidelines*. Retrieved from [http://udlguidelines.cast.org/?utm\\_medium=web&utm\\_campaign=launch&utm\\_source=cast-news&utm\\_content=body-text](http://udlguidelines.cast.org/?utm_medium=web&utm_campaign=launch&utm_source=cast-news&utm_content=body-text)

## Criteria to Evaluate Item Accessibility

Item Elements	Criteria	Tier 1	Tier 2	Tier 3	Tier 4
General Criteria	<input type="checkbox"/> provide equal opportunities for students to demonstrate their knowledge, skills, and abilities, without giving students an unfair advantage over other students or subvert or invalidate the purpose of the test				
	<input type="checkbox"/> are accessible for students of varying communication abilities and who utilize different modes of communication				
	<input type="checkbox"/> accessibility testing features are available and may be used by the test taker in the online testing platform or externally delivered by a test administrator including mark items, eliminate answer options (strikethrough), enlarge items / magnification, highlighter tool, and guide the reading of a text or an item line by line				
Item Stimulus	<input type="checkbox"/> contains only words that are essential for responding to the item				
	<input type="checkbox"/> includes text that is minimal in length and written as plainly as possible				
	<input type="checkbox"/> uses grade-appropriate vocabulary				
	<input type="checkbox"/> uses sentence structure (syntax) that supports meaning interpretation				
Item Stem	<input type="checkbox"/> includes text which is minimal in length and written as plainly as possible				
	<input type="checkbox"/> is simple, clear, and understandable language so that “test takers “can respond to a task in the manner that the test developer intended				
	<input type="checkbox"/> clearly indicates the target construct				
	<input type="checkbox"/> is positively worded				
	<input type="checkbox"/> uses active voice				
Visuals	<input type="checkbox"/> are necessary for responding to the item				
	<input type="checkbox"/> clearly depict the intended image(s) and are as simple as possible (no extraneous detail)				
	<input type="checkbox"/> described to promote access to students with visual impairments				
	<input type="checkbox"/> are unlikely to distract test-takers or cue test-takers to an incorrect response				
Response Options	<input type="checkbox"/> are minimal in length				
	<input type="checkbox"/> are written as plainly as possible				
	<input type="checkbox"/> are balanced with respect to length, order, and content				

# LEAP Connect Content and Bias Review Committee Meeting

## Review Process and Outcomes Summary Report

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Content and Bias/Sensitivity Review of English Language Arts, Mathematics, and  
Science Items Appearing on the Spring 2021 Operational Assessment

Prepared by edCount, LLC



## Table of Contents

Introduction .....	169
Purpose and Goals .....	169
Stakeholder Review Panel.....	169
LEAP Connect Content and Bias Review Evaluation Survey Results.....	170
Summary of Review Meetings .....	171
Appendix A. Content Bias Review Meeting Agendas.....	181
Grades 3-5 ELA.....	181
Grades 6-8 and High School ELA .....	182
Grades 3-5 Math & Grade 4 Science.....	183
Grades 6-8 Math & Grade 8 Science.....	184
High School Math & Science .....	185
Appendix B. Content Bias Review Training PowerPoints.....	186
Appendix C. Nondisclosure Agreement .....	206
Appendix D. Guidelines for Evaluating Bias, Sensitivity, and Accessibility .....	207
Bias and Sensitivity Checklist .....	207
Accessibility Criteria.....	207
Appendix E. Grade 3 ELA CBR Review.....	209
Appendix F. Grade 4 ELA CBR Review .....	210
Appendix G. Grade 5 ELA CBR Review .....	212
Appendix H. Grade 6 ELA CBR Review .....	214
Appendix I. Grade 7 ELA CBR Review.....	215
Appendix J. Grade 8 ELA CBR Review .....	217
Appendix K. High School ELA CBR Review .....	218
Appendix L. Grade 3 Mathematics CBR Review.....	219
Appendix M. Grade 4 Mathematics CBR Review .....	220
Appendix N. Grade 5 Mathematics CBR Review.....	221
Appendix O. Grade 6 Mathematics CBR Review.....	222
Appendix P. Grade 7 Mathematics CBR Review .....	223
Appendix Q. Grade 8 Mathematics CBR Review.....	224
Appendix R. High School Mathematics CBR Review .....	225
Appendix S. Grade 4 Science CBR Review.....	226
Appendix T. Grade 8 Science CBR Review.....	228
2020–2021 LEAP Connect Operational Technical Report .....	167

Appendix U. High School Science CBR Review .....	230
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**List of Exhibits**

Exhibit 38. Number of Years Teaching Experience .....	171
Exhibit 39. Areas of Experience (select all that apply).....	171
Exhibit 40. Grade 3 ELA Item Consensus .....	173
Exhibit 41. Grade 4 ELA Item Consensus .....	173
Exhibit 42. Grade 5 ELA Item Consensus .....	173
Exhibit 43. Grade 6 ELA Item Consensus .....	174
Exhibit 44. Grade 7 ELA Item Consensus .....	174
Exhibit 45. Grade 8 ELA Item Consensus .....	174
Exhibit 46. High School ELA Item Consensus .....	175
Exhibit 47. Grade 3 Mathematics Item Consensus .....	175
Exhibit 48. Grade 4 Mathematics Item Consensus .....	176
Exhibit 49. Grade 5 Mathematics Item Consensus .....	176
Exhibit 50. Grade 6 Mathematics Item Consensus .....	176
Exhibit 51. Grade 7 Mathematics Item Consensus .....	177
Exhibit 52. Grade 8 Mathematics Item Consensus .....	177
Exhibit 53. High School Mathematics Item Consensus .....	178
Exhibit 54. Grade 4 Science Item Consensus .....	178
Exhibit 55. Grade 8 Science Item Consensus .....	179
Exhibit 56. High School Science Item Consensus .....	179
Exhibit 57. Panelist Evaluation Results - Content .....	180
Exhibit 58. Panelist Evaluation Results - Bias.....	180

## Introduction

This document describes the process and outcomes of the Louisiana Department of Education (LDOE) stakeholder review for content and bias within the English language arts (ELA), mathematics, and science items eligible to appear on the spring 2021 operational assessment. The ELA stakeholder review meeting was conducted virtually on Adobe Connect on June 1-2, 2020. The math and science stakeholder review meeting was conducted virtually on Adobe Connect on June 29-July 1, 2020. This document includes a description of the review's purpose and goals, composition of review panels, the review process by panelists, the results of the reconciliation process by the LDOE personnel, and the evaluation results provided by panelists.

## Purpose and Goals

### Purpose

The purpose of the stakeholder review was to gather content alignment and bias/sensitivity feedback from Louisiana educators on the ELA, mathematics, and science items eligible to appear on the spring 2021 operational assessment (as operational or field test items). The meeting provided educators the opportunity to evaluate the items using an item review checklist and to recommend accepting the item as is, revising and accepting, and rejecting the item.

### Goals of Review Process

The goals of the review process included:

- Understand:
  - importance of test security
  - purpose and use of LEAP Connect Assessments
  - assessed content for ELA, math, and science and criteria for recommendations
  - alignment between the Louisiana Connector (LC) and Essential Understanding (EU) and the item
  - item complexity guidelines and item review criteria
  - bias and sensitivity guidelines
  - guidelines for achieving consensus
- Evaluate and provide recommendations on:
  - ELA, math, and science items for alignment, content, complexity, and bias issues

## Stakeholder Review Panel

edCount staff, Jesse Dvorchak and Jean Clayton, facilitated the stakeholder meetings. Ten Louisiana Department of Education (LDOE) staff participated in the review meetings including:

- Jan Sibley – Assessment Director
- Michelle McAdams – Assessment Development Supervisor
- Alice Garcia – LEAP Connect Assessment Coordinator



- Myra Bercy – LEAP Connect Assessment Coordinator
- Leah Boulton – Science Assessment Coordinator
- Danna Clinton – Science Assessment Coordinator
- Melissa McConnell – Diverse Learners Instruction Supervisor
- Kelly McClure – Diverse Learners Support

Measurement, Incorporated (MI) staff member Jami-Jon Pearson facilitated meeting logistics and Joe McClintock, Craig Deville, Melissa Scott, Jose Biggers, and Ryan Hutcherson attended to provide technical support.

The LDOE recruited 17 prospective panelists to serve on two ELA grade panels (3-5, 6-8 and high school) and 25 prospective panelists to serve on three math and science grade panels (3-5, 6-8, high school). The LDOE selected panelists based upon familiarity with students with significant cognitive disabilities, familiarity with the content across the grade spans, expertise with students with visual and hearing impairments, and demographic representation of the students in the state.

Upon finalization of the participant lists, LDOE provided MI with prospective panelists' names, contact information, and grade-level experience/expertise. MI sent an email to each panelist requesting confirmation of participation and return of a signed nondisclosure agreement. edCount sent an email to each participant that provided meeting logistics information.

Panelists completed a post-meeting demographic questionnaire and evaluation survey. The completed post-meeting evaluation surveys provided additional demographic information including grade-level experience, number of years teaching experience, and areas of teaching experience (e.g., special education, special education – students with significant cognitive disabilities, special education supervisor). Provided below is a summary of the demographic information received from each of the panelists.

## **LEAP Connect Content and Bias Review Evaluation Survey Results**

The summary that follows describes the evaluation results for the content and bias review that edCount facilitated for LDOE in June and July 2020. At the conclusion of the content and bias review, facilitators asked panelists to respond to an electronic version of the demographics and evaluation survey. All survey responses were collected anonymously.

A total of 38 (14 ELA panelists, 24 math and science panelists) panelists provided evaluation responses. The tables below summarize panelists' responses to the LEAP Connect Content and Bias Review Evaluation Survey (demographics portion).

The survey first collected basic information about the panelists who participated in the review (see Exhibit 39 and Exhibit 40). The responses indicate that the number of years teaching experience among respondents range from 1-15 or more years. Nineteen out of thirty-eight (50%) respondents have 15+ years of teaching experience. The majority of respondents (26, or 68%) are special education teachers. Nine (24%) respondents teach students with visual impairments or who are deaf. Four (11%) respondents teach students who are English Learners. Twenty-three (61%) respondents are general education teachers for ELA, math, or science.

**Exhibit 39. Number of Years Teaching Experience**

Response	n	%
1-5 years	5	13
6-10 years	8	21
11-15 years	6	16
15+ years	19	50

**Exhibit 40. Areas of Experience (select all that apply)**

Response	n	%
Special Education Teacher	26	68
Special Education Teacher (Students with Significant Cognitive Disabilities)	15	29
Special Education Supervisor	6	16
Teacher of students with visual impairments	9	24
Teacher of students with visual impairments or who are deaf	9	24
Teacher of students who are English Learners	4	11
General Education ELA Teacher	7	18
General Education Math Teacher	9	24
General Education Science Teacher	7	18
General Education ELA Content Supervisor	0	0
General Education Math Content Supervisor	1	3
General Education Science Content Supervisor	1	3

**Summary of Review Meetings****Review Process**

During each of the grade band panel meetings (see the Agendas for each grade-band panel meeting in Appendix A), the panelists received the same introductory training before addressing the grade- and content-specific review of the items for content alignment and bias and sensitivity issues. We present a summary of the training below (see Appendix B for the PowerPoint Trainings for each grade-band panel meeting).

### *Welcome and Introductions*

The facilitators welcomed the panelists, gave a high-level overview of the meeting agenda, and discussed the LDOE stipend and honorarium claim voucher. The facilitators introduced themselves, Measurement Incorporated, and LDOE personnel, then participants introduced themselves.

### *Meetings Goals and Test Security Reminder*

The facilitators provided an overview of the goals for the meeting and reminded panelists that they had signed a nondisclosure agreement and reviewed the virtual committee security protocol panelists must follow. The protocol emphasized the security of all testing materials being used by panelists and instructed panelists to delete computer browsing history after the meeting. The panelists were instructed to not take screen shots, print secure materials, take personal notes, and disclose item information. In addition, the agreement stressed that panelists must log on to the meeting in a private room, where no one else can view their screen (see Appendix C).

### *LEAP Connect Assessments Overview*

The panelists received a detailed history and description of the LEAP Connect English Language Arts (ELA), math, and science assessments. The overview covered the structure of each of the assessments, the content the items are aligned to, and how the items are developed. In addition, the overview described the development of the Louisiana Connectors and the prioritized content for ELA, math, and science. edCount facilitators described the relationship between items assessed and the approved prioritized content for each area. Panelists also received a brief overview of the item complexity for each of the content areas.

### *Review Process*

The facilitators described the process panelists would use to review and evaluate the items for each grade and content area for alignment, bias, and sensitivity issues (see Appendix D).

### **Outcomes of the Review Process**

Panelists reviewed field test items for ELA and mathematics and all test items for the science assessment using the criteria discussed within the training. During the evaluation process the panelists decided whether to “Accept,” “Revise,” or “Reject” the test items. Accepting the item meant no changes to the item were necessary. If panelists selected “Revise” they had to describe the changes requested within the item, whether that included graphic changes, content changes, or other changes within the item, a description was included during the review. Once panelists reviewed all items within a particular content area and grade, consensus was performed with the facilitator to come to agreement on how to proceed with all items. Below is a description of the results from the consensus discussion for each content area and grade.

### *ELA*

The panelists evaluated field test items for grades 3-8 and high school in ELA, including both the passage and the associated test items. Each grade consisted of two passages: one informational and one literature with the associated questions. All passages were at a Tier 1 level, the lowest level of complexity for passages and test items on the assessment.

### **Grade 3**

Panelists evaluated six items for grade 3 ELA, five aligned to the literature passage and one aligned to a language standard. Four of the items received an “Accept” and two items received a “Revise” (see

Exhibit 41). The recommendations focused on graphics changes in the two items needing revision (see Appendix E).

**Exhibit 41. Grade 3 ELA Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.RL.3.2a	2		
LC.RL.3.1a	1		
LC.RL.3.1b	1	1	
LC.L.3.4		1	

**Grade 4**

Panelists reviewed five items for grade 4 ELA, three aligned to the informational passage and two aligned to language standards. Four of the items received a “Revise” during consensus and one received an “Accept” (see Exhibit 42). The revisions included graphics changes in the answer options and updating captions (see Appendix F).

**Exhibit 42. Grade 4 ELA Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.L.4.2a		1	
LC.RI.4.7c	1	1	
LC.RI.4.7a		1	
LC.L.4.4a		1	

**Grade 5**

In grade 5, panelists evaluated six items, all aligned to the information passage. Two of the items received “Accept,” so no changes were required (see Exhibit 43). The remaining four items received “Revise” and required changes to answer options, graphics, and rewording of the stem in two items (see Appendix G).

**Exhibit 43. Grade 5 ELA Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.RI.5.2a	2		
LC.RI.5.8a		2	
LC.RI.5.5c		2	

## Grade 6

Panelists reviewed six items in grade 6 ELA. Five items associated with the literature passage and one associated with a language standard. Four items received an “Accept” and two of the items received “Revise” (see Exhibit 44). The revisions focused on minor word revisions in the answer options (see Appendix H).

### Exhibit 44. Grade 6 ELA Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.RL.6.1a	1		
LC.RL.6.2c	2	1	
LC.RL.6.1b		1	
LC.L.6.4a	1		

## Grade 7

For grade 7 ELA, panelists evaluated six items: five items associated with a literature passage and one item associated with a language standard. Two items received an “Accept” and four items received a “Revise” recommendation (see Exhibit 45). The revision suggestions included content changes to the item stems and answer options (see Appendix I).

### Exhibit 45. Grade 7 ELA Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.RL.7.2b		1	
LC.RL.7.1b	2	2	
LC.L.7.4a		1	

## Grade 8

Panelists reviewed six items for grade 8 ELA, five items associated with the literature passage and one item aligned to a language standard. Three items received “Accept” and the remaining three received “Revise” (see Exhibit 46). The revisions focused on content and stem changes (see Appendix J).

### Exhibit 46. Grade 8 ELA Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.RL.8.1b	2	2	
LC.RL.8.2b	1		
LC.L.8.4a		1	

## High School

Panelists reviewed six items for high school ELA, five items associated with the literature passage and one item associated with a language standard. Four items received “Accept” and the remaining two received “Revise” (see Exhibit 47). The revisions focused on content changes in the passage (see Appendix K).

### Exhibit 47. High School ELA Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.RI.11-12.1a	1	1	
LC.RI.11-12.2c	1		
LC.RI.11-12.6a	1	1	
LC.L.11-12.4a	1		

## Mathematics

The panelists evaluated field test items for grades 3-8 and high school in mathematics. The number of field test items depended on the grade as did the distribution of item complexity by tier and distribution of connectors.

### Grade 3

For grade 3 math, panelists reviewed five field test items across five LCs. Three items received “Accept” and two items required revisions (see Exhibit 48). The revisions consisted of updating the TA instructions (see Appendix L).

### Exhibit 48. Grade 3 Mathematics Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.3.G.A.2	1		
LC.3.MD.C.6	1		
LC.3.OA.D.8b	1		
LC.3.NF.A.1c		1	
LC.3.MD.B.3a		1	

### Grade 4

For Grade 4 math, panelists reviewed five field test items across five LCs. Of these items, four received “Accept” and required no changes (see Exhibit 49). One item required revisions including updating the TA instructions (see Appendix M).

**Exhibit 49. Grade 4 Mathematics Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.4.OA.A.2b	1		
LC.4.G.A.2a	1		
LC.4.NF.A.1	1		
LC.4.MD.A.3	1		
LC.4.NF.A.2b		1	

**Grade 5**

For grade 5 math, panelists reviewed five field test items across five LCs. Of these items, three received “Accept” and required no changes (see Exhibit 50). Two items required revisions including updating graphic descriptions and answer options (see Appendix N).

**Exhibit 50. Grade 5 Mathematics Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.5.NBT.A.3a	1		
LC.5.NF.A.2		1	
LC.5.NF.B.5	1		
LC.5.NBT.A.4a		1	
LC.5.MD.A.1d	1		

**Grade 6**

Panelists for grade 6 math reviewed five field test items across five LCs. Of these items, one was accepted as is without changes (see Exhibit 51). Four items required revisions including updating graphics, revising the introductory text, and revising the TA instructions (see Appendix O).

**Exhibit 51. Grade 6 Mathematics Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.6.RP.A.1c		1	
LC.6.RP.A.3e		1	
LC.6.EE.B.7a	1		
LC.6.RP.A.3d		1	
LC.6.NS.C.6d		1	

### Grade 7

For grade 7 math, panelists reviewed five field test items across four LCs. Of these items, four received “Accept” and required no changes (see Exhibit 52). One item required revisions including updating descriptions for students with visual impairment (see Appendix P).

#### Exhibit 52. Grade 7 Mathematics Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.7.NS.A.2a	1		
LC.7.NS.A.2b	1		
LC.7.RP.A.2b	1	1	
LC.7.SP.A.2b	1		

### Grade 8

Panelists for grade 8 math reviewed six field test items across five LCs. Panelists accepted three of these items as is without any changes (see Exhibit 53). Three items required revisions including updating graphics (see Appendix Q).

#### Exhibit 53. Grade 8 Mathematics Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.8.F.B.4	1	1	
LC.8.G.C.9	1		
LC.8.EE.B.5	1		
LC.8.G.A.2		1	
LC.8.G.A.4b		1	

### High School

For high school math, panelists reviewed 12 field test items across six LCs. Of these items, nine received “Accept” and required no changes (see Exhibit 54). Three items required revisions including revising graphics (see Appendix R).



**Exhibit 54. High School Mathematics Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC.A1: A-CED.A.1	1		
LC.A1: S-ID.C.7	1		
LC.A1: A-REI.D.10	2		
LC.A1: A-CED.A.4	1		
LC.GM: G-SRT.B.5a	2		
LC.A1: S-ID.C.7	2	3	

**Science**

The panelists evaluated all field-test items for grades 4, 8, and high school in science. The items reviewed by panelists measured four of the ten approved science LCs for each grade, as well as, covering a proportional distribution of item complexity.

**Grade 4**

For grade 4 science, panelists reviewed 12 field test items across four LCs. Of these items, five received “Accept” and required no changes. Seven items required revisions (see Exhibit 55). The revisions focused on graphic changes to clarify the purpose of the graphics within the items, as well as the answer options. In addition, the revisions focused on improving the content of the items (see Appendix S).

**Exhibit 55. Grade 4 Science Item Consensus**

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC-4-ESS1-1a		2	
LC-4-ESS2-1b		1	
LC-4-ESS2-2a		2	
LC-4-ESS3-3a	1	1	
LC-4-LS1-1a		1	
LC-4-LS1-2b	1		
LC-4-PS3-1b	2		
LC-4-PS3-3a	1		

**Grade 8**

For grade 8 science, panelists reviewed 12 field test items across ten LCs. Of the items reviewed six were accepted as is without changes. Six items required revisions (see Exhibit 56). The revisions focused on graphic changes to clarify the purpose of the graphics within the items and revising both VI and graphic descriptions (see Appendix T).

### Exhibit 56. Grade 8 Science Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC-8-ESS1-4a		2	
LC-8-ESS2-1a		1	
LC-8-ESS3-1a	1	1	
LC-8-LS1-5a	1		
LC-8-LS4-2a	1		
LC-8-PS1-3a	1	1	
LC-8-PS3-3a	2	1	

### High School

For high school science, panelists reviewed 13 field test items across eight LCs. Of the items reviewed nine were accepted as is without changes. Four items required revisions (see Exhibit 57). The revisions focused on graphic changes to clarify the purpose of the graphics within the items, clarifying graphic descriptions, and improving answer options (see Appendix U).

### Exhibit 57. High School Science Item Consensus

Louisiana Connector	# of Items:		
	Accept	Revise	Reject
LC-HS-LS1-3a	1	1	
LC-HS-LS1-8c	1		
LC-HS-LS1-8d	1	1	
LC-HS-LS2-6a	1		
LC-HS-LS2-7a	1	1	
LC-HS-LS3-3a	1	1	
LC-HS-LS4-2b	1		
LC-HS-LS4-5a	2		

### Evaluation of the Review Process

#### *Evaluation Survey*

Panelists gave their overall perceptions on the review including the training, the materials, the process for evaluating items, and the implementation of the content and bias criteria. Panelists were asked to rate their agreement – strongly agree (4), agree somewhat (3), disagree somewhat (2), strongly disagree (1) – with a series of statements about the workshop. The results of the survey show high levels of satisfaction with the process and outcomes of the study (see Exhibit 58 and Exhibit 59 below). The

average rating of all statements was at 3.85 to 4.00, reflecting panelists’ strong agreement with the statements.

**Exhibit 58. Panelist Evaluation Results - Content**

<b>Statements</b>	<b>Average Rating</b>
The review training materials were clear.	3.90
The provided materials were beneficial to support my participation in the content review (e.g., Louisiana Student Standards, Louisiana Connectors, and Content Review Checklist).	3.90
The process used during content review was appropriate to accomplish the stated goals of the review.	3.90
I found the directions for participating in today’s reviews easy to follow.	3.90
I was able to contribute to the content review.	3.90
I felt my comments regarding content review were considered.	3.98
I am satisfied with the group consensus on the alignment of items to the Louisiana Connectors.	3.85

**Exhibit 59. Panelist Evaluation Results - Bias**

<b>Statements</b>	<b>Average Rating</b>
The bias and sensitivity review training materials were clear.	4.00
The provided materials were beneficial to support my participation in the bias and sensitivity review (e.g., Guidelines for Evaluating Bias, Sensitivity, and Accessibility).	4.00
The process used bias and sensitivity review was appropriate to accomplish the stated goals of the review.	3.98
I was able to contribute to the bias and sensitivity review.	3.98
I felt my comments regarding bias and sensitivity issues were considered.	4.00
I am satisfied with the group consensus on bias and sensitivity issues.	3.95

## Appendix A. Content Bias Review Meeting Agendas

# LEAP Connect CBR Review Meeting Agenda

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June 1, 2020

7:30 a.m. – 12:35 p.m. CT

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### Grades 3-5 ELA

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7:30 a.m. – 8:00 a.m.	Participants logging in
8:00 a.m. – 8:15 a.m.	Welcome and Introductions
8:15 a.m. – 8:45 a.m.	Training and Materials Review
8:45 a.m. – 9:55 a.m.	Review and Reconcile Grade 3 Passage and Items
9:55 a.m. – 10:10 a.m.	Break
10:10 a.m. – 11:20 a.m.	Review and Reconcile Grade 4 Passage and Items
11:20 a.m. – 12:30 p.m.	Review and Reconcile Grade 5 Passage and Items
12:30 p.m. – 12:35 p.m.	Wrap-Up

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# LEAP Connect CBR Review Meeting Agenda

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June 2, 2020

7:30 a.m. – 2:30 p.m. CT

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## Grades 6-8 and High School ELA

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7:30 a.m. – 8:00 a.m.	Participants logging in
8:00 a.m. – 8:15 a.m.	Welcome and Introductions
8:15 a.m. – 8:45 a.m.	Training and Materials Review
8:45 a.m. – 9:55 a.m.	Review and Reconcile Grade 6 Passage and Items
9:55 a.m. – 10:10 a.m.	Break
10:10 a.m. – 11:20 a.m.	Review and Reconcile Grade 7 Passage and Items
11:20 a.m. – 12:30 p.m.	Review and Reconcile Grade 8 Passage and Items
12:30 p.m. – 1:15 p.m.	Lunch
1:15 p.m. – 2:25 p.m.	Review and Reconcile High School Passage and Items
2:25 p.m. – 2:30 p.m.	Wrap-Up

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# LEAP Connect CBR Review Meeting Agenda

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June 29, 2020

7:30 a.m. – 12:45 p.m. CT

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## Grades 3-5 Math & Grade 4 Science

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7:30 a.m. – 8:00 a.m.	Participants logging in
8:00 a.m. – 8:15 a.m.	Welcome and Introductions
8:15 a.m. – 8:45 a.m.	Training and Materials Review
8:45 a.m. – 9:30 a.m.	Review and Reconcile Grade 3-4 Math Items
9:30 a.m. – 9:45 a.m.	Break
9:45 a.m. – 10:15 a.m.	Review and Reconcile Grade 5 Math Items
10:15 a.m. – 11:30 a.m.	Review and Reconcile Grade 4 Science Items
11:30 a.m. – 12:30 p.m.	Review and Provide Feedback for End of Test Survey
12:30 p.m. – 12:45 p.m.	Wrap-Up

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# LEAP Connect CBR Review Meeting Agenda

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June 30, 2020

7:30 a.m. – 12:45 p.m. CT

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## Grades 6-8 Math & Grade 8 Science

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7:30 a.m. – 8:00 a.m.	Participants logging in
8:00 a.m. – 8:15 a.m.	Welcome and Introductions
8:15 a.m. – 8:45 a.m.	Training and Materials Review
8:45 a.m. – 9:30 a.m.	Review and Reconcile Grade 6-7 Math Items
9:30 a.m. – 9:45 a.m.	Break
9:45 a.m. – 10:15 a.m.	Review and Reconcile Grade 8 Math Items
10:15 a.m. – 11:30 a.m.	Review and Reconcile Grade 8 Science Items
11:30 a.m. – 12:30 p.m.	Review and Provide Feedback for End of Test Survey
12:30 p.m. – 12:45 p.m.	Wrap-Up

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# LEAP Connect CBR Review Meeting Agenda

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July 1, 2020

7:30 a.m. – 12:15 p.m. CT

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## High School Math & Science

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7:30 a.m. – 8:00 a.m.	Participants logging in
8:00 a.m. – 8:15 a.m.	Welcome and Introductions
8:15 a.m. – 8:45 a.m.	Training and Materials Review
8:45 a.m. – 9:45 a.m.	Review and Reconcile High School Math Items
9:45 a.m. – 10:00 a.m.	Break
10:00 a.m. – 11:00 a.m.	Review and Reconcile High School Science Items
11:00 a.m. – 12:00 p.m.	Review and Provide Feedback for End of Test Survey
12:00 p.m. – 12:15 p.m.	Wrap-Up

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# Appendix B. Content Bias Review Training PowerPoints

## ELA Grades 3-5

**Louisiana Believes**

LEAP Connect  
ELA Content Bias Review Training

June 1, 2020  
8:00-12:35 pm CT  
Grades 3-5

LEAP CONNECT edCount DEPARTMENT of EDUCATION

2

Welcome & Introductions

3

Introductions

**LA Department of Education**  
Jan Sibley – Assessment Director  
Michelle McAdams – Assessment Development Supervisor  
Myra Bercy – LEAP Connect Assessment Coordinator

**edCount, LLC**  
Liz Summers  
**edCount, LLC Facilitators**  
Jean Clayton  
Jesse Dvorchak

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4

LDOE Stipend and Honorarium Claim Voucher

Type of Meeting: Total Amount of Stipend per day: \$120.00

Name of Attendee:

Date(s) of Attendance: **Measurement Incorporated**

Signature of Attendee: **423 Morris Street**

Social Security Number: **Durham, NC 27701**

*\*We cannot issue payment without SSN.* **Attn: Antoinette Dechant**

Home Mailing Address:

City, State, and ZIP: **Please return to Measurement**

Home/Cell Phone: **Incorporated no later than**

Personal Email: **July 1, 2020.**

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5

ELA Reviews

- Content and Bias Review (CBR) Meeting Goals
- Security Reminder
- Grades 3-5 ELA Field Test Reviews
  - CBR Training
  - Ratings and recommendations for Grades 3-5
  - Wrap-Up and Sign-out

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Meeting Goals

## Meeting Goals

Gain an understanding of:

- importance of test security
- purpose and use of LEAP Connect Assessments
- assessed content for ELA reading assessments and alignment between the Louisiana Connectors (LCs) and the Essential Understandings (EUs) and the assessment items
- the use of passage and item complexity guidelines during development
- passage and item development
- guidelines for evaluating bias, sensitivity, and accessibility
- guidelines for achieving consensus

Evaluate and provide recommendations on:

- ELA items for alignment and bias issues

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## Test Security Reminder

Your signed nondisclosure agreement indicates your understanding that:

- The test passages and items for ELA are secure materials.
- You may not take pictures/screenshots, print, or save copies of the test items.
- You may not take any notes.

You are encouraged to share your experience and the general process with your colleagues, but do not share secure information.

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## LEAP Connect Assessments

## LEAP Connect Assessments

Alternate assessments were developed for students for whom there is evidence of a disability or multiple disabilities that significantly impact cognitive function and/or adaptive behavior (behaviors and skills essential for one to live independently and to function safely in daily life).

To be eligible to participate in the LEAP Connect assessments, an IEP team must verify that the student has a disability which significantly impacts cognitive functioning using multiple sources of information to guide decision-making for statewide assessment selection purposes and that the student meets Alternate Assessment Participation Criteria.

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## LEAP Connect Assessments

The LEAP Connect Assessments:

- are designed for Students with Significant Cognitive Disabilities;
- meet federal requirements for a summative assessment that measures student progress toward challenging academic content;
- focus on the “big ideas” found in the Louisiana Student Standards (LSS) for ELA, mathematics, and science; and
- measure student proficiency in the content and skills detailed by the Louisiana Connectors (LCs) for Students with Significant Disabilities in ELA, mathematics, and science.

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## LEAP Connect Assessments

The LEAP Connect Assessments:

- align to the knowledge and skills included in each grade- and content-specific LC;
- provide opportunities for students to independently show what they know at varying levels of understanding of the assessed content with the use of scaffolds and supports;
- required to be read aloud to the student by the Text-to-Speech accessibility feature or the Test Administrator; and
- are accessible for students of varying communication abilities and modes.

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## LEAP Connect Assessed Content

- The LCs provide fully-aligned pathways for students with significant cognitive disabilities to work towards Louisiana Student Standards (LSS).
- The LCs illustrate the necessary knowledge and skills students with significant cognitive disabilities need to acquire to reach the learning targets for ELA, mathematics, and science.
- The LCs serve as the basis for the distribution of skills and concepts represented on the LEAP Connect assessments.

## LEAP Connect Complexity Levels for Reading

- Tier 1 and Tier 2 questions reflect the higher level of support needed when students begin to learn a new skill or acquire new knowledge.
- Tier 3 questions reflect the lower level of support needed as students learn and develop mastery of that skill or knowledge.

Content Area	Tier 1	Tier 2	Tier 3
English Language Arts	<ul style="list-style-type: none"> <li>• short text with repeated ideas</li> <li>• simple vocabulary words</li> <li>• provides a specific "listen for" statement related to the item</li> </ul>	<ul style="list-style-type: none"> <li>• text with straightforward ideas</li> <li>• provides a brief description of the item topic and simple definitions of terms</li> <li>• provides a "listen for" statement related to the assessed skill</li> </ul>	<ul style="list-style-type: none"> <li>• text with clear ideas</li> <li>• provides some detail about the item topic and definitions of terms</li> <li>• provides statement reminding students what the item is about</li> </ul>

## Examples of LCs and corresponding EUs

Content Area	LC	EU
ELA	<b>LC.RL.3.1a</b> Answer questions related to the relationship between characters, setting, events, or conflicts (e.g., characters and events, characters and conflicts, setting and conflicts).	Identify a character, setting, event, or conflict.

## LEAP Connect Complexity Levels for Reading

- The assessments include passages and items with multiple levels of complexity and varying degrees of scaffolds and supports to provide opportunities for students to show what they know and can do.
- Each assessment includes a range of items categorized as Tier 1, 2, or 3.
- The tiers represents three levels of complexity.
- The tiers reflect increasing levels of complexity from Tier 1 to Tier 3 and include varying degrees of scaffolds and supports.
- Each passage and associated items are written at a single tier.

## LEAP Connect Complexity Levels for Reading

- Tiers 2 and 3 assess student mastery of a skill or concept associated with the LC.
- Tier 1 assesses student mastery of an "Essential Understanding" (EU).
  - An EU is a fundamental, basic concept, or skill related to the LC that is essential to gain an understanding of the content and the referents related to the grade-level learning of concepts and skills.
  - Acquisition of this basic skill is necessary for students to engage in and learn the concept or skill described or identified by the LC.

## ELA Reading Passage Development

1. The reading passage type (literature or informational) and tier (1, 2, or 3) is specified by the test blueprint for each grade.
2. Quantitative and qualitative guidelines specified for each tier are followed.
3. The passage topic is grade- and age-appropriate and based on possible topics provided by LDOE.
4. Each passage includes graphics. Most graphics are included for student engagement. A few, guided by the specified LCs, are included to provide students with additional information (e.g., timeline, chart, diagram).
5. Grade 5 includes an LC that assesses the ability to answer a comprehension question based on the presentation of two related passages (i.e., compare/contrast).

## ELA Item Development

All field test items:

- assess student mastery of a skill or concept associated with the LC;
- are related to a passage developed at the same tier; and
- provide the appropriate level of supports (e.g., listen for statements, simple definitions) based upon the tier and the assessed content.

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## LEAP Connect Item Review Criteria for ELA

- Item review criteria
  - Does this item measure the stated LC or EU?
  - Is this item free from bias and sensitivity issues?
- Upon applying the criteria to an item, an independent recommendation is made by each reviewer.
- For each item, record a recommendation for each item in the chat box. Record in the comments:
  - Accept, Accept with Revisions, or Reject
  - Provide reasons for your decision, especially if Accepting with Revisions or Rejecting.

Louisiana Believes

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## Guidelines for All Reviewers

- To achieve consensus on the recommendation for an item, reviewers are asked to:
  - seek clarification and ask questions;
  - listen to and collaborate with other panel members;
  - support high expectations for task quality and of student ability;
  - provide honest and constructive feedback; and
  - focus on issues with tasks with regard to alignment, complexity, clarity of language, student expectations, and fairness.

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## Questions and Thoughts



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## ELA Field Test Passage Sets

- Grade 3 – Tier 3 Literature
- Grade 4 – Tier 2 Informational Text
- Grade 5 – Tier 2 Informational Text (paired passage)

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## Bias, Sensitivity, and Accessibility Guidelines

- Review each item and associated passage or passage part to be sure it is free of bias, is sensitive, and accessible to ALL populations.
- While reviewing for bias, sensitivity, fairness, and accessibility, consider:
  - *Is the item and associated passage/passage part free of content or language that might...*
    - offend or typecast a gender or ethnic group?
    - unfairly advantage or disadvantage groups of students?
    - portray a group, gender or belief system in a negative or stereotypic manner?
    - degrade people based on physical appearance or of any physical, cognitive, or emotional challenge?
  - *Does the associated passage/passage part include the information needed for the student to answer each question without having prior knowledge of the content?*

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## Complete Short Evaluation

- Please complete the evaluation by going to the link in the Web Links pod.

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# ELA Grades 6-8 and High School

## Louisiana Believes

LEAP Connect  
ELA Content Bias Review Training

June 2, 2020  
8:00-2:30 pm CT  
Grades 6-8 and High School



## Welcome & Introductions

### Introductions

**LA Department of Education**  
Jan Sibley – Assessment Director  
Michelle McAdams – Assessment Development Supervisor  
Myra Bercy – LEAP Connect Assessment Coordinator

**edCount, LLC**  
Liz Summers

**edCount, LLC Facilitators**  
Jean Clayton  
Jesse Dvorchak

### LDOE Stipend and Honorarium Claim Voucher

Type of Meeting:	Total Amount of Stipend per day: \$120.00
Name of Attendee:	
Date(s) of Attendance:	
Signature of Attendee:	<b>Measurement Incorporated</b> <b>423 Morris Street</b> <b>Durham, NC 27701</b> <b>Attn: Antoinette Dechant</b>
Social Security Number: <i>*We cannot issue payment without SSN.</i>	
Home Mailing Address:	
City, State, and ZIP:	<b>Please return to Measurement Incorporated no later than July 1, 2020.</b>
Home/Cell Phone:	
Personal Email:	

### ELA Reviews

- Content and Bias Review (CBR) Meeting Goals
- Security Reminder
- Grades 6-8 and HS ELA Field Test Reviews
  - CBR Training
  - Ratings and recommendations for Grades 6-8 and HS
  - Wrap-Up and Sign-out

## Meeting Goals

## Meeting Goals

Gain an understanding of:

- importance of test security
- purpose and use of LEAP Connect Assessments
- assessed content for ELA reading assessments and alignment between the Louisiana Connectors (LCs) and the Essential Understandings (EUs) and the assessment items
- the use of passage and item complexity guidelines during development
- passage and item development
- guidelines for evaluating bias, sensitivity, and accessibility
- guidelines for achieving consensus

Evaluate and provide recommendations on:

- ELA items for alignment and bias issues

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## LEAP Connect Assessments

## LEAP Connect Assessments

The LEAP Connect Assessments:

- are designed for Students with Significant Cognitive Disabilities;
- meet federal requirements for a summative assessment that measures student progress toward challenging academic content;
- focus on the “big ideas” found in the Louisiana Student Standards (LSS) for ELA, mathematics, and science; and
- measure student proficiency in the content and skills detailed by the Louisiana Connectors (LCs) for Students with Significant Disabilities in ELA, mathematics, and science.

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## Test Security Reminder

Your signed nondisclosure agreement indicates your understanding that:

- The test passages and items for ELA are secure materials.
- You may not take pictures/screenshots, print, or save copies of the test items.
- You may not take any notes.

You are encouraged to share your experience and the general process with your colleagues, but do not share secure information.

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## LEAP Connect Assessments

Alternate assessments were developed for students for whom there is evidence of a disability or multiple disabilities that significantly impact cognitive function and/or adaptive behavior (behaviors and skills essential for one to live independently and to function safely in daily life).

To be eligible to participate in the LEAP Connect assessments, an IEP team must verify that the student has a disability which significantly impacts cognitive functioning using multiple sources of information to guide decision-making for statewide assessment selection purposes and that the student meets Alternate Assessment Participation Criteria.

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## LEAP Connect Assessments

The LEAP Connect Assessments:

- align to the knowledge and skills included in each grade- and content-specific LC;
- provide opportunities for students to independently show what they know at varying levels of understanding of the assessed content with the use of scaffolds and supports;
- required to be read aloud to the student by the Text-to-Speech accessibility feature or the Test Administrator; and
- are accessible for students of varying communication abilities and modes.

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## LEAP Connect Assessed Content

- The LCs provide fully-aligned pathways for students with significant cognitive disabilities to work towards Louisiana Student Standards (LSS).
- The LCs illustrate the necessary knowledge and skills students with significant cognitive disabilities need to acquire to reach the learning targets for ELA, mathematics, and science.
- The LCs serve as the basis for the distribution of skills and concepts represented on the LEAP Connect assessments.

## LEAP Connect Complexity Levels for Reading

- The assessments include passages and items with multiple levels of complexity and varying degrees of scaffolds and supports to provide opportunities for students to show what they know and can do.
- Each assessment includes a range of items categorized as Tier 1, 2, or 3.
- The tiers represents three levels of complexity.
- The tiers reflect increasing levels of complexity from Tier 1 to Tier 3 and include varying degrees of scaffolds and supports.
- Each passage and associated items are written at a single tier.

## LEAP Connect Complexity Levels for Reading

- Tier 1 and Tier 2 questions reflect the higher level of support needed when students begin to learn a new skill or acquire new knowledge.
- Tier 3 questions reflect the lower level of support needed as students learn and develop mastery of that skill or knowledge.

Content Area	Tier 1	Tier 2	Tier 3
English Language Arts	<ul style="list-style-type: none"> <li>• short text with repeated ideas</li> <li>• simple vocabulary words</li> <li>• provides a specific "listen for" statement related to the item</li> </ul>	<ul style="list-style-type: none"> <li>• text with straightforward ideas</li> <li>• provides a brief description of the item topic and simple definitions of terms</li> <li>• provides a "listen for" statement related to the assessed skill</li> </ul>	<ul style="list-style-type: none"> <li>• text with clear ideas</li> <li>• provides some detail about the item topic and definitions of terms</li> <li>• provides statement reminding students what the item is about</li> </ul>

## LEAP Connect Complexity Levels for Reading

- Tiers 2 and 3 assess student mastery of a skill or concept associated with the LC.
- Tier 1 assesses student mastery of an "Essential Understanding" (EU).
  - An EU is a fundamental, basic concept, or skill related to the LC that is essential to gain an understanding of the content and the referents related to the grade-level learning of concepts and skills.
  - Acquisition of this basic skill is necessary for students to engage in and learn the concept or skill described or identified by the LC.

## Examples of LCs and corresponding EUs

Content Area	LC	EU
ELA	<b>LC.RL.7.1b</b> Use two or more pieces of textual evidence to support conclusions, or summaries of text.	Make an inference from a literary text.

## ELA Reading Passage Development

1. The reading passage type (literature or informational) and tier (1, 2, or 3) is specified by the test blueprint for each grade.
2. Quantitative and qualitative guidelines specified for each tier are followed.
3. The passage topic is grade- and age-appropriate and based on possible topics provided by LDOE.
4. Each passage includes graphics. Most graphics are included for student engagement. A few, guided by the specified LCs, are included to provide students with additional information (e.g., timeline, chart, diagram).

## ELA Item Development

All field test items:

- assess student mastery of a skill or concept associated with the LC;
- are related to a passage developed at the same tier; and
- provide the appropriate level of supports (e.g., listen for statements, simple definitions) based upon the tier and the assessed content.

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## ELA Field Test Passage Sets

- Grade 6 – Tier 2 Literature
- Grade 7 – Tier 3 Literature
- Grade 8 – Tier 2 Literature
- High School – Tier 3 Informational Text

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## LEAP Connect Item Review Criteria for ELA

- Item review criteria
  - Does this item measure the stated LC or EU?
  - Is this item free from bias and sensitivity issues?
- Upon applying the criteria to an item, an independent recommendation is made by each reviewer.
- For each item, record a recommendation for each item in the chat box. Record in the comments:
  - Accept, Accept with Revisions, or Reject
  - Provide reasons for your decision, especially if Accepting with Revisions or Rejecting.

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## Bias, Sensitivity, and Accessibility Guidelines

- Review each item and associated passage or passage part to be sure it is free of bias, is sensitive, and accessible to ALL populations.
- While reviewing for bias, sensitivity, fairness, and accessibility, consider:
  - *Is the item and associated passage/passage part free of content or language that might...*
    - offend or typecast a gender or ethnic group?
    - unfairly advantage or disadvantage groups of students?
    - portray a group, gender or belief system in a negative or stereotypic manner?
    - degrade people based on physical appearance or of any physical, cognitive, or emotional challenge?
  - *Does the associated passage/passage part include the information needed for the student to answer each question without having prior knowledge of the content?*

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## Guidelines for All Reviewers

- To achieve consensus on the recommendation for an item, reviewers are asked to:
  - seek clarification and ask questions;
  - listen to and collaborate with other panel members;
  - support high expectations for task quality and of student ability;
  - provide honest and constructive feedback; and
  - focus on issues with tasks with regard to alignment, complexity, clarity of language, student expectations, and fairness.

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## Complete Short Evaluation

- Please complete the evaluation by going to the link in the Web Links pod.

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## Questions and Thoughts



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**Math and Science Grades 3-5**

**Louisiana Believes**

LEAP Connect Mathematics and Science  
Content Bias Review Training

June 29, 2020  
8:00 am-12:45 pm CT  
Grades 3-5

LEAP CONNECT edCount DEPARTMENT of EDUCATION

Welcome & Introductions

Introductions

**LA Department of Education**  
Jan Sibley – Assessment Director  
Michelle McAdams – Assessment Development Supervisor  
Myra Bercy – LEAP Connect Assessment Coordinator  
Kelly McClure – Diverse Learners Support

**edCount, LLC**  
Liz Summers

**edCount, LLC Facilitators**  
Jesse Dvorchak  
Bill Herrera

**Measurement Incorporated**  
Joe McClintock  
Jami-Jon Pearson

LDOE Stipend and Honorarium Claim Voucher

Type of Meeting:	Total Amount of Stipend per day: \$120.00
Name of Attendee:	
Date(s) of Attendance:	<b>Measurement Incorporated</b>
Signature of Attendee:	<b>423 Morris Street</b>
Social Security Number:	<b>Durham, NC 27701</b>
<small>*We cannot issue payment without SSN.</small>	<b>Attn: Antoinette Dechant</b>
Home Mailing Address:	
City, State, and ZIP:	<b>Please return to Measurement</b>
Home/Cell Phone:	<b>Incorporated no later than</b>
Personal Email:	<b>July 1, 2020.</b>

Mathematics and Science Review

- Content and Bias Review (CBR) Meeting Goals
- Security Reminder
- Grades 3-5 Mathematics and Grade 4 Science Reviews
  - CBR Training for Mathematics and Science
  - Ratings and recommendations for Grades 3-5 Mathematics
  - Ratings and recommendations for Grade 4 Science
  - Review of End of Test Survey
  - Wrap-Up and Sign-out

Meeting Goals

## Meeting Goals

### Understand:

- importance of test security
- purpose and use of LEAP Connect Assessments
- assessed content for math and science and criteria for recommendations
- alignment between the Louisiana (LC) and Essential Understanding (EU) and the item
- item complexity guidelines and item review criteria
- bias and sensitivity guidelines
- guidelines for achieving consensus

### Evaluate and provide recommendations on:

- Math and science items for alignment, content, complexity, and bias issues

## Test Security Reminder

Your signed nondisclosure agreement indicates your understanding that:

- The test passages and items for math and science are secure materials.
- You may not take pictures/screenshots, print, or save copies of the test items.
- You may not take any notes.

You are encouraged to share your experience and the general process with your colleagues, but do not share secure information.

## LEAP Connect Assessments

## LEAP Connect Assessments

Alternate assessments were developed for students for whom there is evidence of a disability or multiple disabilities that significantly impact cognitive function and/or adaptive behavior (behaviors and skills essential for one to live independently and to function safely in daily life).

To be eligible to participate in the LEAP Connect assessments, an IEP team must verify that the student has a disability which significantly impacts cognitive functioning using multiple sources of information to guide decision-making for statewide assessment selection purposes and that the student meets Alternate Assessment Participation Criteria.

## LEAP Connect Assessments

### The LEAP Connect Assessments:

- are designed for Students with Significant Cognitive Disabilities;
- meet federal requirements for a summative assessment that measures student progress toward challenging academic content;
- focus on the “big ideas” found in the Louisiana Student Standards (LSS) for ELA, mathematics, and science; and
- measure student proficiency in the content and skills detailed by the Louisiana Connectors (LCs) for Students with Significant Disabilities in ELA, mathematics, and science.

## LEAP Connect Assessments

### The LEAP Connect Assessments:

- align to the knowledge and skills included in each grade- and content-specific LC;
- provide opportunities for students to independently show what they know at varying levels of understanding of the assessed content with the use of scaffolds and supports;
- required to be read aloud to the student by the Text-to-Speech accessibility feature or the Test Administrator; and
- are accessible for students of varying communication abilities and modes.

## LEAP Connect Assessed Content

- The LCs provide fully-aligned pathways for students with significant cognitive disabilities to work towards Louisiana Student Standards (LSS).
- The LCs illustrate the necessary knowledge and skills students with significant cognitive disabilities need to acquire to reach the learning targets for ELA, mathematics, and science.
- The LCs serve as the basis for the distribution of skills and concepts represented on the LEAP Connect assessments.
- Each LC is “unpacked” into multiple components that are identified as Focal Knowledge Skills and Abilities (FKSAs).
- FKSAs:
  - Each FKSA aligns to an academic grade-level content target (LC).
  - Multiple FKSAs may be identified for a single LC.
  - Any single FKSA selected from each set may form the basis of an item.

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13



## LEAP Connect Complexity Levels

- The assessments include items with multiple levels of complexity and varying degrees of scaffolds and supports to provide opportunities for students to show what they know and can do.
- Each assessment includes a range of items categorized as Tier 1, 2, 3, or 4.
- The tiers represent four levels of complexity.
- The tiers reflect increasing levels of complexity from Tier 1 to Tier 4 and include varying degrees of scaffolds and supports.

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14



## LEAP Connect Complexity Levels

- The approach to item design ensures the availability of a range of supports for students across the items tiers (e.g., providing definitions, demonstrations or graphic organizers as applied in instructional materials).
- Tier 1 and Tier 2 questions reflect the higher level of support needed when students begin to learn a new skill or acquire new knowledge.
- Tier 3 and Tier 4 questions reflect the lower level of support needed as students learn and develop mastery of that skill or knowledge.

Content Area	Tier 1	Tier 2	Tier 3	Tier 4
Mathematics	<ul style="list-style-type: none"> <li>supports use of hands-on concrete materials</li> </ul>	<ul style="list-style-type: none"> <li>successive model that guides one step at a time</li> <li>simplified language and/or visual representations</li> <li>few data points</li> <li>increase magnitude of numbers</li> </ul>	<ul style="list-style-type: none"> <li>model that shows solution to a similar problem</li> <li>simplified language</li> <li>additional number of data points</li> <li>further increase in magnitude of numbers</li> </ul>	<ul style="list-style-type: none"> <li>statement reminding student what the item is about</li> </ul>

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## LEAP Connect Assessed Content

- Tiers 4, 3, and 2 assess student mastery of a skill or concept associated with the LC.
- Tier 1 assesses student mastery of an “Essential Understanding” (EU).
  - An EU is a fundamental, basic concept, or skill related to the LC that is essential to gain an understanding of the content and the referents related to the grade-level learning of concepts and skills.
  - Acquisition of this basic skill is necessary for students to engage in and learn the concept or skill described or identified by the LC.

Content Area	LC	EU
Mathematics	LC.5.NBT.A.4a Round decimals to the next whole number.	Identify place value to the ones, tens, hundreds, thousands.
Science	LC-4-PS3-1b Demonstrate that objects moving faster possess more energy than objects moving slower.	Identify factors that influence the motion of an object.

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16



## Bias, Sensitivity, and Accessibility Guidelines

- Review each item to be sure it is free of bias, is sensitive, and accessible to ALL populations.
- While reviewing for bias, sensitivity, fairness, and accessibility, consider:
  - Is the item free of content or language that might...
    - offend or typecast a gender or ethnic group?
    - unfairly advantage or disadvantage groups of students?
    - portray a group, gender or belief system in a negative or stereotypic manner?
    - degrade people based on physical appearance or of any physical, cognitive, or emotional challenge?

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17



## LEAP Connect Item Review Questions

- Item Review Questions:
  - Does this item measure the LC or EU?
  - Is this item appropriate for the grade level?
  - Are the item directives clearly written?
  - Is this item free from bias and sensitivity issues?
  - Does the language of the stimulus/context, the question, and graphics clearly communicate the task?
  - Are the graphics context accurate and sufficient for the item context?
  - Is the alternative text accurate and sufficient for the item context?
  - Are the responses options clearly written?
  - Does the item have a correct answer?
  - Is there a clear, single correct answer to the item?
  - Are all incorrect choices clearly incorrect?

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18



## LEAP Connect Item Review Criteria

- Item review criteria
  - Does this item measure the stated LC or EU?
  - Is this item free from bias and sensitivity issues?
- Upon applying the criteria to an item, an independent recommendation is made by each reviewer.
- For each item, record a recommendation for each item in the chat box. Record in the comments:
  - Accept, Accept with Revisions, or Reject.
  - Provide reasons for your decision, especially if Accepting with Revisions or Rejecting.

## Guidelines for All Reviewers

- To achieve consensus on the recommendation for an item, reviewers are asked to:
  - seek clarification and ask questions;
  - listen to and collaborate with other panel members;
  - support high expectations for task quality and of student ability;
  - provide honest and constructive feedback; and
  - focus on issues with tasks with regard to alignment, complexity, clarity of language, student expectations, and fairness.

## Questions and Thoughts



**Math and Science Grades 6-8**

**Louisiana Believes**

LEAP Connect Mathematics and Science  
Content Bias Review Training

June 30, 2020  
8:00 am-12:45 pm CT  
Grades 6-8

LEAP CONNECT edCount DEPARTMENT of EDUCATION

Welcome & Introductions

Introductions

**LA Department of Education**  
Jan Sibley – Assessment Director  
Michelle McAdams – Assessment Development Supervisor  
Myra Bercy – LEAP Connect Assessment Coordinator  
Kelly McClure – Diverse Learners Support

**edCount, LLC**  
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**edCount, LLC Facilitators**  
Jesse Dvorchak  
Bill Herrera

**Measurement Incorporated**  
Joe McClintock  
Jami-Jon Pearson

LDOE Stipend and Honorarium Claim Voucher

Type of Meeting:	Total Amount of Stipend per day: \$120.00
Name of Attendee:	
Date(s) of Attendance:	<b>Measurement Incorporated</b>
Signature of Attendee:	<b>423 Morris Street</b>
Social Security Number:	<b>Durham, NC 27701</b>
<small>*We cannot issue payment without SSN.</small>	<b>Attn: Antoinette Dechant</b>
Home Mailing Address:	
City, State, and ZIP:	<b>Please return to Measurement</b>
Home/Cell Phone:	<b>Incorporated no later than</b>
Personal Email:	<b>August 1, 2020.</b>

Mathematics and Science Review

- Content and Bias Review (CBR) Meeting Goals
- Security Reminder
- Grades 6-8 Mathematics and Grade 8 Science Reviews
  - CBR Training for Mathematics and Science
  - Ratings and recommendations for Grades 6-8 Mathematics
  - Ratings and recommendations for Grade 8 Science
  - Review of End of Test Survey
  - Wrap-Up and Sign-out

Meeting Goals

## Meeting Goals

### Understand:

- importance of test security
- purpose and use of LEAP Connect Assessments
- assessed content for math and science and criteria for recommendations
- alignment between the Louisiana (LC) and Essential Understanding (EU) and the item
- item complexity guidelines and item review criteria
- bias and sensitivity guidelines
- guidelines for achieving consensus

### Evaluate and provide recommendations on:

- Math and science items for alignment, content, complexity, and bias issues

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## LEAP Connect Assessments

### The LEAP Connect Assessments:

- are designed for Students with Significant Cognitive Disabilities;
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## LEAP Connect Assessments

### The LEAP Connect Assessments:

- align to the knowledge and skills included in each grade- and content-specific LC;
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- required to be read aloud to the student by the Text-to-Speech accessibility feature or the Test Administrator; and
- are accessible for students of varying communication abilities and modes.

## LEAP Connect Assessed Content

- The LCs provide fully-aligned pathways for students with significant cognitive disabilities to work towards Louisiana Student Standards (LSS).
- The LCs illustrate the necessary knowledge and skills students with significant cognitive disabilities need to acquire to reach the learning targets for ELA, mathematics, and science.
- The LCs serve as the basis for the distribution of skills and concepts represented on the LEAP Connect assessments.
- Each LC is “unpacked” into multiple components that are identified as Focal Knowledge Skills and Abilities (FKSAs).
- FKSAs:
  - Each FKSA aligns to an academic grade-level content target (LC).
  - Multiple FKSAs may be identified for a single LC.
  - Any single FKSA selected from each set may form the basis of an item.

## LEAP Connect Complexity Levels

- The assessments include items with multiple levels of complexity and varying degrees of scaffolds and supports to provide opportunities for students to show what they know and can do.
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- The tiers represents four levels of complexity.
- The tiers reflect increasing levels of complexity from Tier 1 to Tier 4 and include varying degrees of scaffolds and supports.

## LEAP Connect Complexity Levels

- The approach to item design ensures the availability of a range of supports for students across the items tiers (e.g., providing definitions, demonstrations or graphic organizers as applied in instructional materials).
- Tier 1 and Tier 2 questions reflect the higher level of support needed when students begin to learn a new skill or acquire new knowledge.
- Tier 3 and Tier 4 questions reflect the lower level of support needed as students learn and develop mastery of that skill or knowledge.

Content Area	Tier 1	Tier 2	Tier 3	Tier 4
Mathematics	<ul style="list-style-type: none"> <li>supports use of hands-on concrete materials</li> </ul>	<ul style="list-style-type: none"> <li>successive model that guides one step at a time</li> <li>simplified language and/or visual representations</li> <li>few data points</li> <li>increase magnitude of numbers</li> </ul>	<ul style="list-style-type: none"> <li>model that shows solution to a similar problem</li> <li>simplified language</li> <li>additional number of data points</li> <li>further increase in magnitude of numbers</li> </ul>	<ul style="list-style-type: none"> <li>statement reminding student what the item is about</li> </ul>

## LEAP Connect Assessed Content

- Tiers 4, 3, and 2 assess student mastery of a skill or concept associated with the LC.
- Tier 1 assesses student mastery of an “Essential Understanding” (EU).
  - An EU is a fundamental, basic concept, or skill related to the LC that is essential to gain an understanding of the content and the referents related to the grade-level learning of concepts and skills.
  - Acquisition of this basic skill is necessary for students to engage in and learn the concept or skill described or identified by the LC.

Content Area	LC	EU
Mathematics	<b>LC.6.NS.C.6d</b> Locate positive and negative numbers on a number line.	Recognize how values/numbers lie on either side of zero.
Science	<b>LC-8-MS-PS1-3a</b> Compare and contrast characteristics of natural and synthetic materials (e.g., fibers) from provided information (e.g., text, media, visual displays, data).	Classify material as a natural resource or as a synthetic material.

## Bias, Sensitivity, and Accessibility Guidelines

- Review each item to be sure it is free of bias, is sensitive, and accessible to ALL populations.
- While reviewing for bias, sensitivity, fairness, and accessibility, consider:
  - Is the item free of content or language that might...
    - offend or typecast a gender or ethnic group?
    - unfairly advantage or disadvantage groups of students?
    - portray a group, gender or belief system in a negative or stereotypic manner?
    - degrade people based on physical appearance or of any physical, cognitive, or emotional challenge?

## LEAP Connect Item Review Questions

- Item Review Questions:
  - Does this item measure the LC or EU?
  - Is this item appropriate for the grade level?
  - Are the item directives clearly written?
  - Is this item free from bias and sensitivity issues?
  - Does the language of the stimulus/context, the question, and graphics clearly communicate the task?
  - Are the graphics context accurate and sufficient for the item context?
  - Is the alternative text accurate and sufficient for the item context?
  - Are the responses options clearly written?
  - Does the item have a correct answer?
  - Is there a clear, single correct answer to the item?
  - Are all incorrect choices clearly incorrect?

## LEAP Connect Item Review Criteria

- Item review criteria
  - Does this item measure the stated LC or EU?
  - Is this item free from bias and sensitivity issues?
- Upon applying the criteria to an item, an independent recommendation is made by each reviewer.
- For each item, record a recommendation for each item in the chat box. Record in the comments:
  - Accept, Accept with Revisions, or Reject.
  - Provide reasons for your decision, especially if Accepting with Revisions or Rejecting.

## Guidelines for All Reviewers


- To achieve consensus on the recommendation for an item, reviewers are asked to:
  - seek clarification and ask questions;
  - listen to and collaborate with other panel members;
  - support high expectations for task quality and of student ability;
  - provide honest and constructive feedback; and
  - focus on issues with tasks with regard to alignment, complexity, clarity of language, student expectations, and fairness.

## Questions and Thoughts








## Math and Science High School



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LEAP Connect Mathematics and Science  
Content Bias Review Training

July 1, 2020  
8:00 am-12:15 pm CT  
High School



## Welcome & Introductions

### Introductions

**LA Department of Education**  
Jan Sibley – Assessment Director  
Michelle McAdams – Assessment Development Supervisor  
Myra Bercy – LEAP Connect Assessment Coordinator  
Kelly McClure – Diverse Learners Support


**edCount, LLC**  
Liz Summers

**edCount, LLC Facilitators**  
Jesse Dvorchak  
Bill Herrera

**Measurement Incorporated**  
Joe McClintock  
Jami-Jon Pearson

### LDOE Stipend and Honorarium Claim Voucher

Type of Meeting:	Total Amount of Stipend per day: \$120.00
Name of Attendee:	
Date(s) of Attendance:	<b>Measurement Incorporated</b>
Signature of Attendee:	<b>423 Morris Street</b>
Social Security Number: <small>*We cannot issue payment without SSN.</small>	<b>Durham, NC 27701</b>
Home Mailing Address:	<b>Attn: Antoinette Dechant</b>
City, State, and ZIP:	<b>Please return to Measurement</b>
Home/Cell Phone:	<b>Incorporated no later than</b>
Personal Email:	<b>August 1, 2020.</b>

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### Mathematics and Science Review

- Content and Bias Review (CBR) Meeting Goals
- Security Reminder
- High School Mathematics and Science Reviews
  - CBR Training for Mathematics and Science
  - Ratings and recommendations for High School Mathematics
  - Ratings and recommendations for High School Science
  - Review of End of Test Survey
  - Wrap-Up and Sign-out

## Meeting Goals

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## Meeting Goals

### Understand:

- importance of test security
- purpose and use of LEAP Connect Assessments
- assessed content for math and science and criteria for recommendations
- alignment between the Louisiana (LC) and Essential Understanding (EU) and the item
- item complexity guidelines and item review criteria
- bias and sensitivity guidelines
- guidelines for achieving consensus

### Evaluate and provide recommendations on:

- Math and science items for alignment, content, complexity, and bias issues

## Test Security Reminder

Your signed nondisclosure agreement indicates your understanding that:

- The test passages and items for math and science are secure materials.
- You may not take pictures/screenshots, print, or save copies of the test items.
- You may not take any notes.

You are encouraged to share your experience and the general process with your colleagues, but do not share secure information.

## LEAP Connect Assessments

## LEAP Connect Assessments

Alternate assessments were developed for students for whom there is evidence of a disability or multiple disabilities that significantly impact cognitive function and/or adaptive behavior (behaviors and skills essential for one to live independently and to function safely in daily life).

To be eligible to participate in the LEAP Connect assessments, an IEP team must verify that the student has a disability which significantly impacts cognitive functioning using multiple sources of information to guide decision-making for statewide assessment selection purposes and that the student meets Alternate Assessment Participation Criteria.

## LEAP Connect Assessments

### The LEAP Connect Assessments:

- are designed for Students with Significant Cognitive Disabilities;
- meet federal requirements for a summative assessment that measures student progress toward challenging academic content;
- focus on the “big ideas” found in the Louisiana Student Standards (LSS) for ELA, mathematics, and science; and
- measure student proficiency in the content and skills detailed by the Louisiana Connectors (LCs) for Students with Significant Disabilities in ELA, mathematics, and science.

## LEAP Connect Assessments

### The LEAP Connect Assessments:

- align to the knowledge and skills included in each grade- and content-specific LC;
- provide opportunities for students to independently show what they know at varying levels of understanding of the assessed content with the use of scaffolds and supports;
- required to be read aloud to the student by the Text-to-Speech accessibility feature or the Test Administrator; and
- are accessible for students of varying communication abilities and modes.

## LEAP Connect Assessed Content

- The LCs provide fully-aligned pathways for students with significant cognitive disabilities to work towards Louisiana Student Standards (LSS).
- The LCs illustrate the necessary knowledge and skills students with significant cognitive disabilities need to acquire to reach the learning targets for ELA, mathematics, and science.
- The LCs serve as the basis for the distribution of skills and concepts represented on the LEAP Connect assessments.
- Each LC is “unpacked” into multiple components that are identified as Focal Knowledge Skills and Abilities (FKSAs).
- FKSAs:
  - Each FKSA aligns to an academic grade-level content target (LC).
  - Multiple FKSAs may be identified for a single LC.
  - Any single FKSA selected from each set may form the basis of an item.

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13

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## LEAP Connect Complexity Levels

- The assessments include items with multiple levels of complexity and varying degrees of scaffolds and supports to provide opportunities for students to show what they know and can do.
- Each assessment includes a range of items categorized as Tier 1, 2, 3, or 4.
- The tiers represents four levels of complexity.
- The tiers reflect increasing levels of complexity from Tier 1 to Tier 4 and include varying degrees of scaffolds and supports.

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14

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## LEAP Connect Complexity Levels

- The approach to item design ensures the availability of a range of supports for students across the items tiers (e.g., providing definitions, demonstrations or graphic organizers as applied in instructional materials).
- Tier 1 and Tier 2 questions reflect the higher level of support needed when students begin to learn a new skill or acquire new knowledge.
- Tier 3 and Tier 4 questions reflect the lower level of support needed as students learn and develop mastery of that skill or knowledge.

Content Area	Tier 1	Tier 2	Tier 3	Tier 4
Mathematics	<ul style="list-style-type: none"> <li>• supports use of hands-on concrete materials</li> </ul>	<ul style="list-style-type: none"> <li>• successive model that guides one step at a time</li> <li>• simplified language and/or visual representations</li> <li>• few data points</li> <li>• increase magnitude of numbers</li> </ul>	<ul style="list-style-type: none"> <li>• model that shows solution to a similar problem</li> <li>• simplified language</li> <li>• additional number of data points</li> <li>• further increase in magnitude of numbers</li> </ul>	<ul style="list-style-type: none"> <li>• statement reminding student what the item is about</li> </ul>

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15

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## LEAP Connect Assessed Content

- Tiers 4, 3, and 2 assess student mastery of a skill or concept associated with the LC.
- Tier 1 assesses student mastery of an “Essential Understanding” (EU).
  - An EU is a fundamental, basic concept, or skill related to the LC that is essential to gain an understanding of the content and the referents related to the grade-level learning of concepts and skills.
  - Acquisition of this basic skill is necessary for students to engage in and learn the concept or skill described or identified by the LC.

Content Area	LC	EU
Mathematics	<b>LC-A1: A-CED.A.4</b> Solve multi-variable formulas or literal equations, for a specific variable.	Identify the unknown quantity when given an equation and labeled figure.
Biology	<b>LC-H5-L51-8c</b> Identify ways to protect against infectious diseases to maintain a body's health (e.g., eat nutritious food, washing hands, rest, exercise, etc.).	Identify various causes of infectious human diseases.

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16

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## Bias, Sensitivity, and Accessibility Guidelines

- Review each item to be sure it is free of bias, is sensitive, and accessible to ALL populations.
- While reviewing for bias, sensitivity, fairness, and accessibility, consider:
  - *Is the item free of content or language that might...*
    - offend or typecast a gender or ethnic group?
    - unfairly advantage or disadvantage groups of students?
    - portray a group, gender or belief system in a negative or stereotypic manner?
    - degrade people based on physical appearance or of any physical, cognitive, or emotional challenge?

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17

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## LEAP Connect Item Review Questions

- Item Review Questions:
  - Does this item measure the LC or EU?
  - Is this item appropriate for the grade level?
  - Are the item directives clearly written?
  - Is this item free from bias and sensitivity issues?
  - Does the language of the stimulus/context, the question, and graphics clearly communicate the task?
  - Are the graphics context accurate and sufficient for the item context?
  - Is the alternative text accurate and sufficient for the item context?
  - Are the responses options clearly written?
  - Does the item have a correct answer?
  - Is there a clear, single correct answer to the item?
  - Are all incorrect choices clearly incorrect?

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18

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## LEAP Connect Item Review Criteria

- Item review criteria
  - Does this item measure the stated LC or EU?
  - Is this item free from bias and sensitivity issues?
- Upon applying the criteria to an item, an independent recommendation is made by each reviewer.
- For each item, record a recommendation for each item in the chat box. Record in the comments:
  - Accept, Accept with Revisions, or Reject.
  - Provide reasons for your decision, especially if Accepting with Revisions or Rejecting.

## Guidelines for All Reviewers

- To achieve consensus on the recommendation for an item, reviewers are asked to:
  - seek clarification and ask questions;
  - listen to and collaborate with other panel members;
  - support high expectations for task quality and of student ability;
  - provide honest and constructive feedback; and
  - focus on issues with tasks with regard to alignment, complexity, clarity of language, student expectations, and fairness.

## Questions and Thoughts





# LOUISIANA DEPARTMENT OF EDUCATION

## Appendix C. Nondisclosure Agreement

### Office of Academic Policy and Analytics Assessments Nondisclosure Agreement for Virtual Committees

The design of the Louisiana Department of Education's assessment program requires that test information remain secure. With the exception of materials and announcements released by the Department for informational purposes, all test materials and planning discussions must be regarded as secure. As a result, such materials and information may not be reproduced, shared, or in any way released or distributed to unauthorized persons.

When reviewing materials and participating in a virtual assessment meeting, you must be in a private room where no one else can view your screen, and you must adhere to the following rules:

- Do NOT take screenshots
- Do NOT print any secure materials
- Do NOT take personal notes regarding items, passages, and/or sources
- Do NOT disclose item information in any way
- Delete the computer browser history after the meeting

Violations of the above acts, and any test security violation as defined by Bulletin 118, can result in the revocation of a Teaching, Administrator, or Ancillary Certificate as defined in Bulletin 746.

The undersigned is a committee participant authorized to view secure selected state assessment materials and participate in a committee review meeting. The undersigned hereby agrees to be bound to the terms of this agreement restricting the disclosure of said materials and information.

Printed Name:

Signature:

Date:

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## Appendix D. Guidelines for Evaluating Bias, Sensitivity, and Accessibility

# Guidelines for Evaluating Bias, Sensitivity, and Accessibility

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Fairness in educational assessment includes three categories: cultural sensitivity, bias, and accessibility to special populations. The LEAP Connect mathematics and science assessments provide ways for students with significant cognitive disabilities to demonstrate what they know and can do at varying levels of understanding. Evaluating the fairness of each item and the associated passage(s) or passage part requires a review that addresses bias, sensitivity, and accessibility.

### Bias and Sensitivity Checklist

Please use the following checklist to help determine if an item demonstrates bias, lack of sensitivity, or does not adhere to fairness for all test takers. The following list contains recommendations and is not exhaustive. While reviewing items, be sure to keep in mind the range of Louisiana students with significant cognitive disabilities participating in the LEAP Connect assessments.

Consider the following guidelines when reviewing both math and science items:

- ✓ Use appropriate vocabulary, phrases, and/or sentence structure for the assessed grade level and tier level;
- ✓ Avoid content and language that may be considered offensive based on:
  - race
  - gender
  - sexual orientation
  - age
  - religion
  - ethnicity
  - socioeconomic status
  - regional location
- ✓ Avoid stereotyping any group;
- ✓ Include content that is sensitive to students who are not native English speakers;
- ✓ Do not use vocabulary that may be considerably more familiar to some groups than others; and
- ✓ Do not include content that portrays any group of people in a negative or stereotypical manner.

### Accessibility Criteria

Accessibility in educational assessment refers to the tools, devices, and accommodations that are allowed so that all students have an equivalent assessment experience. Accessibility features are

available for all students participating in the LEAP Connect math and science assessments to independently show what they know and can do at varying levels of understanding with use of structured scaffolds and supports, accommodations (as document in the IEP), and online testing platform.

The accessibility testing features available for use by the test taker in the online testing platform or externally delivered by a test administrator include:

- Highlighter tool
- Cross-Off tool
- Sticky Note tool
- Magnifying tool
- Line Guide
- Help tool

Consider the following guidelines when reviewing the accessibility of both the math and science items:

- ✓ Accessible to students from Louisiana and will NOT interfere with the student's ability to demonstrate knowledge or understanding;
- ✓ Provide equal opportunities for students to demonstrate their knowledge, skills, and abilities, without giving students an unfair advantage over other students or subvert or invalidate the purpose of the test;
- ✓ Include the information needed for students to answer each question in the passage and does not require the student to have prior knowledge of the content; and
- ✓ Are accessible for students of varying communication abilities and who utilize different modes of communication.

## Appendix E. Grade 3 ELA CBR Review

LEAP Connect Grade 3 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendations	CBR Committee Suggestions
6653	MC	B	3	<b>LC.RL.3.2a</b>	Accept	
6654	MC	A	3	<b>LC.RL.3.2a</b>	Accept	
6655	MC	A	3	<b>LC.RL.3.1a</b>	Accept	
6656	MC	C	3	<b>LC.RL.3.1b</b>	Accept	
6659	MC	B	3	<b>LC.RL.3.1b</b>	Revise and Accept	Revise answer option B (correct answer) to show girl eating grapes. Maintain boy as is.
6660	MC	C	3	<b>LC.L.3.4a</b>	Revise and Accept	For option A, revise bowl graphic to a basket or plate to remove confusion with information presented within the passage.



## Appendix F. Grade 4 ELA CBR Review

LEAP Connect Grade 4 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendation	CBR Committee Suggestions
Context						Change man-made bee hive to a hollow tree with bees flying around it.
6621	MC	B	2	<b>LC.RI.4.2a</b>	Revise and Accept	<p>*Revise answer option b, need to focus on honey bee body parts. The answer option would focus on the legs and wings of the bee. For example, take the current option c image, without labels, and make answer option. Be sure that the stinger is visible.</p> <p>*Develop a replacement image for option c. Potentially use a flower for option c, since the current image will be moved to option b. Change the wording of option c to support the image of a flower.</p>
6620	MC	C	2	<b>LC.RI.4.7c</b>	Accept	
6622	MC	A	2	<b>LC.RI.4.7c</b>	Revise and Accept	<p>*Change option a to just a flower,</p> <p>*option b to a honey bee just landing with its front legs on a flower (front legs standing on petal), and</p> <p>*option c the lines showing movement go around the flower in place of zig-zagging.</p>
6623	MC	C	2	<b>LC.RI.4.7a</b>	Revise and Accept	Revise option c so that it is similar to the daisy presented in the passage (reference other flowers in previous options), but not exact. Remove stalk-like presentation and shape of flower that resembles corn.

**LEAP Connect Grade 4 ELA CBR Review**

IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendation	CBR Committee Suggestions
6630	MC	B	2	LC.L.4.4a	Revise and Accept	<p>Add graphics to all three answer options.</p> <p>*Answer option a, image of a field. (Answer option b, two points with dotted lines between, a distance scale for a map, arrows pointing both directions with two points or images at the ends, or a line/arrow that goes between two things (hive and flowers), two people with a line between with one person up close and the other person faded towards the back.</p> <p>*Answer option c, kitchen stove with top, oven, and drawer that opens at the bottom (consider having a pot on the stove). Passage graphic for context (3347): change to a hollowed tree with bees buzzing around</p>

## Appendix G. Grade 5 ELA CBR Review

LEAP Connect Grade 5 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendations	CBR Committee Suggestions
6632	MC	A	2	LC.RI.5.5c	Revise and Accept	<p>*Adding a short paragraph to context (3339) about levees (description of what the purpose of the levee).</p> <p>*Consider adding information about the Mississippi River to Passage 1 (3339),</p> <p>*possibly move the map in passage 2 to passage 1 with the associated graphic description.</p> <p>*Replace the map graphic in Passage 2 with a map graphic that focuses more on LA, Texas and the Gulf of Mexico with the Mississippi River flowing down.</p> <p>*Consider re-wording the stem, "Which sentence shows how the information is presented the same in both texts?"</p>
6633	MC	C	2	LC.RI.5.5c	Revise and Accept	Depending on the changes to the context 3339, the answer options in the current item may need to be changed. There needs to be a clear difference between the contexts and that is carried into the answer options.
6634	MC	B	2	LC.RI.5.2a	Accept	
6635	MC	C	2	LC.RI.5.2a	Accept	
6636	MC	A	2	LC.RI.5.8a	Revise and Accept	Consider revisions to the stem. Reduce the wordiness and possibly replace the word "depend." Consider the use of the word "need." Potential revision for the stem: "Which detail supports the author's point that levees keep rivers from flooding?"

LEAP Connect Grade 5 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendations	CBR Committee Suggestions
6637	MC	B	2	LC.RI.5.8a	Revise and Accept	<p>*Consider revising stem to remove the "perfect." For instance, "Which detail supports the author's point that levees do not always work?"</p> <p>*Remove one of the images from Option b.</p>

## Appendix H. Grade 6 ELA CBR Review

LEAP Connect Grade 6 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendations	CBR Committee Suggestions
6626	MC	B	2	<b>LC.RL.6.2c</b>	Accept	
6627	MC	A	2	<b>LC.RL.6.2c</b>	Accept	
6628	MC	C	2	<b>LC.RL.6.2c</b>	Revise and Accept	For option 2, change the word "soup" to "gumbo" to make the vocabulary more consistent with the passage.
6624	MC	C	2	<b>LC.RL.6.1a</b>	Accept	
6625	MC	A	2	<b>LC.RL.6.1b</b>	Revise and Accept	For option 1, make revision to statement to include gumbo at the end for clarification. "He eats all of the gumbo in the bowl."
6629	MC	C	2	<b>LC.L.6.4a</b>	Accept	

## Appendix I. Grade 7 ELA CBR Review

LEAP Connect Grade 7 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendations	CBR Committee Suggestions
6665	MC	B	3	<b>LC.RL.7.2b</b>	Revise and Accept	Context 3351: Revise the name "Opa" because the name can mean "grandpa."
6666	MC	C	3	<b>LC.RL.7.1b</b>	Accept	
6667	MC	A	3	<b>LC.RL.7.1b</b>	Revise and Accept	Revise Option 1: Opa sees it "takes" hours.
6668	MC	B	3	<b>LC.RL.7.1b</b>	Revise and Accept	<p>*Consider changing stem to: "Which sentence shows how Opa learns..." The stem is confusing because unclear if referencing the passage or the answer options.</p> <p>*Consider adding "below" for clarification on which group of sentences is being referred to in the item.</p> <p>*Consider changing the wording of Option 2 to mirror text, "very old craft" instead of "craft."</p> <p>*Consider changing the wording of Option 2 to also be, Her mother "tells" her that learning to weave can keep the "very old craft" going. (This combines both committee recommendations.)</p> <p>*Also consider replacing "Her" in each of the answer options with the new name chosen for the character.</p>
6669	MC	C	3	<b>LC.RL.7.1b</b>	Accept	

LEAP Connect Grade 7 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendations	CBR Committee Suggestions
6670	MC	A	3	LC.L.7.4a	Revise and Accept	*Consider the following revisions: change "information" to "skills" and "handing" to "passing down." *Consider revisions to context 3367: review the passage part and remove "and in turn" from the context.

## Appendix J. Grade 8 ELA CBR Review

LEAP Connect Grade 8 ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Recommendations	CBR Suggestions
6638		C	2	LC.RL.8.2b	Accept	
6639		C	2	LC.RL.8.1b	Accept	
6640		A	2	LC.RL.8.1b	Revise and Accept	Context 3352 changes "Stella places a sweet smelling cotton ball in James' hand."
6641		B	2	LC.RL.8.1b	Revise and Accept	Consider revision to stem for clarification: "Which of the following sentence or sentences..." Make this change for clarification to any items that follow this structure.
6642		A	2	LC.RL.8.1b	Accept	
6644		B	2	LC.L.8.4a	Revise and Accept	*Consider revising option 2 to "unexpected interaction or event or participation." Review context appropriate synonyms for the word "experience" and replace the word "opportunity" within the answer option. Individual committee member: Remove references to "encounter" within the item due to negative connotations associated with the word, including "violent police encounter" cross-culturally. <b>Consider changing the vocabulary word and subsequently the associated answer options.</b>



## Appendix K. High School ELA CBR Review

LEAP Connect High School ELA CBR Review						
IMSLA Item ID	Item Type	Key	Tier	LC	CBR Committee Recommendation	CBR Committee Suggestion
6645	MC	C	3	LC.RI.11-12.2c	Revise and Accept	*Context 3341: remove reference to his size and how he received his name due to his size. *Option 2: revise option to use a different detail that does not support the central idea.
6646	MC	A	3	LC.RI.11-12.1a	Accept	
6647	MC	A	3	LC.RI.11-12.1a	Revise and Accept	Consider revisions to option 3: remove reference to "Fats" and his large size. Replace with other plausible distractor.
6649	MC	C	3	LC.RI.11-12.2c	Accept	
6651	MC	B	3	LC.RI.11-12.6a	Accept	
6652	MC	A	3	LC.L.11-12.4a	Accept	

## Appendix L. Grade 3 Mathematics CBR Review

IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendation	CBR Feedback Notes
4878	MC	B	3	LC.3.G.A.2	Accept	David from LDOE asked if the stem should state "four equal parts."
4898	MC	C	4	LC.3.MD.C.6	Accept	
4979	MC	B	2	LC.3.OA.D.8b	Accept	
4933	MC	C	2	LC.3.NF.A.1c	Revise and Accept	Following the graphic of the circle with three shaded parts state, "This circle has 3 shaded parts."
6738	CR	A	3	LC.3.MD.B.3a	Revise and Accept	Add a statement, "Below is a graph showing:" Move the graphics side by side, if possible. Give TAs the option of re-reading the graphic descriptions, if needed. For clarification, move soccer balls under statement "Move 1 soccer ball..." and the baseballs were placed under the statement "Using these tiles..."

## Appendix M. Grade 4 Mathematics CBR Review

IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendation	CBR Feedback
5049	MC	A	1	LC.4.OA.A.2b	Accept	
5075	CR	A	3	LC.4.G.A.2a	Accept	
6739	MC	B	3	LC.4.NF.A.1	Accept	
5083	MC	C	2	LC.4.MD.A.3	Accept	
5124	MC	C	3	LC.4.NF.A.2b	Revise and Accept	Consider adding graphics to the answer options that are follow the exemplar graphics within the item (this may lower the tier). Also consider adding TA instruction, "Point to each fraction circle as the TTS or TA reads the description."

## Appendix N. Grade 5 Mathematics CBR Review

LEAP Connect Grade 5 Mathematics CBR Review						
IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendations	CBR Feedback
5332	MC	C	2	LC.5.NBT.A.3a	Accept	
5235	MC	A	2	LC.5.NF.A.2	Revise and Accept	Update the item to use gallons throughout. The graphics should have gallons instead of distance. Move the graphics to be side-by-side, if possible, with size restrictions. Be sure to line the number lines up for comparison of fractions.
5340	MC	B	1	LC.5.NF.B.5	Accept	
5287	MC	B	3	LC.5.NBT.A.4a	Revise and Accept	Change answer options to 2, 4, and 5. Standard states rounding to the nearest whole number.
5262	MC	B	3	LC.5.MD.A.1d	Accept	

## Appendix O. Grade 6 Mathematics CBR Review

LEAP Connect Grade 6 Mathematics CBR Review						
IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendation	CBR Feedback
5512	MC	C	3	LC.6.RP.A.1c	Revise and Accept	Adjust the initial graphic. Add the bracelet onto a wrist to clarify that it is a bracelet.
5468	MC	C	2	LC.6.RP.A.3e	Revise and Accept	Recommend changing from "This is another problem." to "In the problem below..." Update TA instruction "Point to grid" to include pointing to shaded area, as well.
5486	MC	B	3	LC.6.EE.B.7a	Accept	
5436	MC	A	1	LC.6.RP.A.3d	Revise and Accept	Adjust graphic of birds in the cage by reducing the number of lines to 5-6, for instance. Reducing will make tactile enhancement easier.
5438	MC	A	2	LC.6.NS.C.6d	Revise and Accept	Change the letter above the point in Option 1 to be something other than (A, B, or C) to prevent confusion with answer options.

## Appendix P. Grade 7 Mathematics CBR Review

LEAP Connect Grade 7 Mathematics CBR Review						
IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendation	CBR Feedback
5543	MC	A	3	LC.7.NS.A.2a	Accept	
5658	MC	C	2	LC.7.NS.A.2b	Accept	
5612	MC	A	1	LC.7.RP.A.2b	Accept	
5546	MC	B	3	LC.7.SP.A.2b	Accept	The Key for braille will need to go to previous facing page. The two bars filled will need two completely differentiated fills such as a solid for one and a bumpy for the other, with these noted in the key.
5617	MC	B	4	LC.7.RP.A.2b	Revise and Accept	For VI students consider adding directions, "The first column reads, 'Student,' the second column reads..."

## Appendix Q. Grade 8 Mathematics CBR Review

LEAP Connect Grade 8 Mathematics CBR Review						
IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendation	CBR Feedback
5852	MC	C	3	LC.8.F.B.4	Revise and Accept	Change delta symbol to "change in y" and "change in x."
5855	MC	A	3	LC.8.F.B.4	Accept	
5754	MC	B	2	LC.8.G.C.9	Accept	
5818	MC	B	1	LC.8.EE.B.5	Accept	
6754		A	1	LC.8.G.A.2	Revise and Accept	Adjust item so all graphics use the same metric of cm or in. Graphic descriptions and instructions will need to be updated, as well.
6755		B	2	LC.8.G.A.4b	Revise and Accept	Adjust the wording within the item. Replace the use of dilation, reflection, and translation with the following words: flip, enlarge, reflect, and slide.

## Appendix R. High School Mathematics CBR Review

IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Committee Decision (Accept/Revise and Accept/Reject)	CBR Committee Feedback
6698	MC	A	2	LC.A1: A-CED.A.1	Accept	N/A
6699	MC	B	3	LC.A1: S-ID.C.7	Accept	N/A
6700	MC	B	1	LC.A1: A-REI.D.10	Accept	N/A
6701	MC	A	2	LC.A1: A-CED.A.4	Accept	N/A
6702	MC	C	3	LC.A1: A-REI.D.10	Accept	N/A
6705	MC	C	4	LC.GM: G-SRT.B.5a	Accept	N/A
6707	MC	B	1	LC.GM: G-SRT.B.5a	Accept	N/A
6709	MC	A	1	LC.A1: S-ID.C.7	Revise and accept	numbers on the x and y-axis are not the same size
6725	MC	A	4	LC.A1: S-ID.C.7	Accept	N/A
6741	MC	B	4	LC.A1: S-ID.C.7	Revise and accept	numbers on the x and y-axis are not the same size
6742	MC	A	2	LC.A1: S-ID.C.7	Accept	N/A
6743	MC	C	2		Revise and accept	issues with the spacing on the x-axis of the graph (this is the only graph greater than 10 intervals where the numbers are the same size)



## Appendix S. Grade 4 Science CBR Review

IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendations	CBR Feedback
6703	MC	A	2	LC-4-PS3-1b	Accept	
6711	MC	B	3	LC-4-PS3-1b	Accept	
6714	MC	B	1	LC-4-LS1-1a	Revise and Accept	Update the description of the first option to be "sharp claws on its toes" to match the graphic description. Also update the stem to, "What does the woodpecker use to remove the insects from the tree to eat?"
6717	MC	C	2	LC-4-ESS2-2a	Revise and Accept	Remove "It covers a lot of Earth's surface" Change the direction of the arrow in the graphic. The arrow should be pointing directly up toward Cancun and Havana. Add the word "southern" to the graphic description: "it shows the 'southern' coast" Add "a" to each of the answer options.
6718	MC	C	4	LC-4-ESS2-2a	Revise and Accept	Update graphic descriptions and answer options to use coasts. Graphic description should read: "The map shows where volcanoes are found on the Pacific coast of North and South America." For instance Option 3 should read, "Along the pacific coasts of North and South America." Consider adjusting Option 2 to "in between North and South America."
6745	MC	A	1	LC-4-ESS3-2a	Accept	

IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendations	CBR Feedback
6721	MC	C	2	LC-4-ESS3-2a	Revise and Accept	Add a title to the graphic "Storm Tracking Map." Be sure title matches symbols. Revise stem to: "Scientists share this map with people on Wednesday before the storm is supposed to reach land by Monday. How does the satellite help people prepare for the storm?" Answer options: "The satellite shows when the storm will reach land." Answer option: "The satellite shows when the storm will turnaround." Answer option: "The satellite shows when the storm will lose strength."
6722	MC	B	4	LC-4-ESS1-1a	Revise and Accept	Consider revising the stem, "What does this amphibian fossil tell us about the Earth's surface?"
6723	MC	B	1	LC-4-LS1-2b	Accept	
6724	MC	C	3	LC-4-PS3-3a	Accept	
6753	MC	A	4	LC.4.ESS2.1b	Revise and Accept	Remove instructions referencing multi-part item.
6746	MC	A	2	LC.4.ESS1.1a	Revise and Accept	Add an arrow to the crack in the rock, make the crack closer to the rain, and add lines that demonstrate wind blowing. Also update graphic description, "Label B shows the pieces of the rock that broke down into pebbles (A) at the base of the rock from the rain hitting it." With the revision to the graphic and graphic description, Option 3 the magnification of the crack would need to be removed.

## Appendix T. Grade 8 Science CBR Review

IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendation	CBR Feedback
6704	MC		1	LC-8-PS3-3a	Accept	
6706	MC		4	LC-8-PS3-3a	Revise and Accept	Change the names of the materials to X, Y, and Z.
6708	MC		2	LC-8-LS1-5a	Accept	
6710	MC		3	LC-8-PS1-3a	Accept	Committee accepted item, but mentioned the use of polyester, gasoline, steel, Teflon, and plastic as additional synthetic materials.
6715	MC	A	2	LC-8-LS4-2a	Accept	
6716	MC	A	4	LC-8-ESS1-4a	Revise and Accept	Add VI description to initial graphic diagram that includes all layers and animals. Committee member concern with timeline on second graphic. Review for clarity.
6712	MC		1	LC-8-ESS1-4a	Revise and Accept	Add VI description of graphic that describes all of the layers A-D including the animal present.
6713	MC		2	LC-8-ESS3-1a	Revise and Accept	Title of map needs to be corrected in the graphic description. Tactile graphic issue: what is seen as oil crossing over the tactile lines needs a different texture and the outline of lines to be raised higher than 'oil.' The image with a mass that spreads cannot be differentiated without variance in textures presented.
6747	MC		3	LC.8.PS1.3a	Revise and Accept	Update Option to include "from a tree" to align with the other answer options.
6748	MC		3	LC.8.PS3.3a	Accept	
6749	MC		4	LC.8.ESS3.1a	Accept	

<b>IMSLA Item ID</b>	<b>Item Type</b>	<b>Key (MC Items)</b>	<b>Tier</b>	<b>LC</b>	<b>CBR Recommendation</b>	<b>CBR Feedback</b>
6750	MC		3	LC.8.ESS2.1a	Revise and Accept	Enlarge graphic diagram. Consider enlarging white arrows and bolding the outline to improve clarity.

## Appendix U. High School Science CBR Review

IMSLA Item ID	Item Type	Key (MC Items)	Tier	LC	CBR Recommendation	CBR Feedback
6734	MC	A	3	LC-HS-LS2-7a	Accept	
6730	MC	A	4	LC.HS.LS2.7a	Revise and Accept	Graphic description needs to be updated to match all answer options. Adjust third item card to state: "recycle plastic, paper, and glass"
6731	MC	B	2	LC.HS.LS1.3a	Accept	
6735	MC	B	3	LC-HS-LS1-3a	Revise and Accept	For Option 1, add bolding to the word "one" to maintain parallelism with the other two answer options.
6732	MC	B	2	LC.HS.LS4.5a	Accept	
6733	MC	C	3	LC-HS-LS4-2b	Accept	
6726	MC	A	1	LC-HS-LS1-8d	Revise and Accept	Revise the graphic to say "healthy person" instead of exposed person to maintain continuity.
6728	MC	A	4	LC-HS-LS1-8d	Accept	
6727	MC	C	3	LC-HS-LS1-8c	Accept	
6751	MC	C	2	LC.HS.LS3.3a	Revise and Accept	Add an example within the introductory text, like a sample that describes brown fur. Add to the text that heterozygous creates Black.
6752	MC	A	3	LC.HS.LS3.3a	Accept	
6736	MC	C	3	LC-HS-LS2-6a	Accept	
6737	MC	A	3	LC-HS-LS4-5a	Accept	

## Appendix G. Scale Score and Achievement Level by Population Categories<sup>8</sup>

### G.1 ELA Grade 3

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥500	31	21	38	11	1239.14	17.05
Gender	Male	≥350	34	20	37	8	1237.42	16.44
	Female	≥150	22	22	40	16	1243.06	17.80
Ethnicity	Hispanic/Latino	≥40	34	29	34	2	1236.29	11.91
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥280	29	17	41	13	1240.89	17.92
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥150	32	24	34	11	1237.45	16.85
	Two or more races	≥10	35	35	29	0	1234.53	12.81
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥500	31	21	38	11	1239.14	17.05
	Not Economically Disadvantaged	≥60	28	30	39	3	1235.75	15.06
	Economically Disadvantaged	≥420	31	20	37	12	1239.81	17.18
EL Status	Economic Information-Blank	≥10	50	0	42	8	1234.67	21.34
	Not EL	≥490	30	21	38	11	1239.24	17.11
	EL	<10	NR	NR	NR	NR	NR	NR

<sup>8</sup> Note: The sum of percentages by achievement levels may not equal to 100 due to rounding.

**G.2 ELA Grade 4**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥520	28	20	30	23	1240.13	16.23
Gender	Male	≥330	30	21	28	20	1238.86	16.26
	Female	≥180	23	17	32	27	1242.43	15.96
Ethnicity	Hispanic/Latino	≥20	34	14	31	21	1236.69	18.41
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥310	29	17	30	24	1240.46	15.91
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥160	24	26	27	23	1240.07	16.90
	Two or more races	≥10	20	10	40	30	1243.80	12.71
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥520	28	20	30	23	1240.13	16.24
	Not Economically Disadvantaged	≥80	24	24	33	19	1239.22	16.17
	Economically Disadvantaged	≥430	28	19	29	24	1240.37	16.26
EL Status	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
	Not EL	≥510	28	20	30	23	1240.12	16.25
	EL	<10	NR	NR	NR	NR	NR	NR

### G.3 ELA Grade 5

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥570	15	26	39	20	1243.16	13.00
Gender	Male	≥380	16	28	35	22	1242.83	13.28
	Female	≥180	14	21	47	18	1243.85	12.41
Ethnicity	Hispanic/Latino	≥40	9	28	43	20	1244.57	12.07
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥310	14	27	37	21	1243.18	13.20
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥190	18	23	39	20	1242.90	13.03
	Two or more races	≥10	10	20	60	10	1244.50	9.13
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥570	15	26	39	21	1243.16	13.00
	Not Economically Disadvantaged	≥80	11	26	41	21	1242.99	12.27
	Economically Disadvantaged	≥480	16	25	38	20	1243.15	13.13
EL Status	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
	Not EL	≥560	15	26	39	21	1243.21	13.01
	EL	<10	NR	NR	NR	NR	NR	NR



**G.4 ELA Grade 6**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥800	23	24	34	19	1240.04	12.56
Gender	Male	≥520	22	24	34	20	1240.11	12.32
	Female	≥280	24	23	34	19	1239.91	13.02
Ethnicity	Hispanic/Latino	≥40	29	20	31	20	1241.37	14.28
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	≥10	38	38	8	15	1236.54	9.58
	Black or African American	≥470	19	27	36	19	1240.35	11.99
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥250	27	19	33	22	1239.59	13.52
	Two or more races	≥10	31	23	38	8	1237.00	9.06
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥800	23	24	34	19	1240.04	12.56
	Not Economically Disadvantaged	≥100	31	26	31	13	1237.30	11.12
	Economically Disadvantaged	≥690	21	23	34	21	1240.51	12.79
EL Status	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
	Not EL	≥790	22	24	34	19	1239.96	12.31
	EL	≥10	44	6	25	25	1244.06	21.76

**G.5 ELA Grade 7**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥860	21	18	25	36	1242.85	15.14
Gender	Male	≥560	22	19	25	34	1242.36	15.42
	Female	≥290	18	17	25	40	1243.79	14.56
Ethnicity	Hispanic/Latino	≥30	24	21	21	34	1242.16	15.02
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥450	21	19	26	34	1242.35	14.76
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥330	20	17	24	39	1243.85	15.91
	Two or more races	≥20	26	9	39	26	1241.30	11.81
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥860	21	18	25	36	1242.85	15.14
	Not Economically Disadvantaged	≥120	23	20	30	26	1241.47	15.16
	Economically Disadvantaged	≥730	20	18	24	38	1243.12	15.12
EL Status	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
	Not EL	≥850	21	18	25	36	1242.90	15.12
	EL	<10	NR	NR	NR	NR	NR	NR

## G.6 ELA Grade 8

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥930	12	30	18	39	1240.79	9.28
Gender	Male	≥620	11	32	17	40	1240.96	9.02
	Female	≥300	15	27	19	38	1240.43	9.81
Ethnicity	Hispanic/Latino	≥50	12	35	23	31	1240.42	9.79
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥510	11	31	19	39	1240.95	8.20
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥330	14	29	16	41	1240.76	10.64
	Two or more races	≥20	14	23	23	41	1239.00	10.72
Migrant Status	Migrant	<10	NR	NR	NR	NR	NR	NR
	Non-migrant	≥920	12	30	18	39	1240.80	9.29
Economic Status	Not Economically Disadvantaged	≥140	16	30	21	34	1239.31	9.52
	Economically Disadvantaged	≥770	11	31	18	41	1241.21	9.03
	Economic Information-Blank	≥10	38	23	15	23	1231.38	14.65
EL Status	Not EL	≥910	12	30	18	39	1240.79	9.31
	EL	≥10	0	42	25	33	1240.67	7.19

**G.7 ELA HS**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥850	13	14	55	19	1247.42	14.38
Gender	Male	≥570	14	15	55	17	1246.86	14.23
	Female	≥270	11	11	56	22	1248.57	14.65
Ethnicity	Hispanic/Latino	≥20	24	14	45	17	1242.66	17.01
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	≥10	21	36	43	0	1247.50	9.94
	Black or African American	≥470	12	13	59	16	1246.96	13.73
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥320	12	14	50	24	1248.71	15.07
	Two or more races	≥10	18	9	45	27	1250.27	17.01
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥850	13	14	55	19	1247.42	14.38
	Not Economically Disadvantaged	≥110	12	17	50	21	1247.57	14.39
	Economically Disadvantaged	≥670	12	13	57	18	1247.92	13.91
EL Status	Economic Information-Blank	≥60	25	15	45	15	1242.03	17.88
	Not EL	≥840	13	14	55	19	1247.43	14.35
	EL	<10	NR	NR	NR	NR	NR	NR

### G.8 Math Grade 3

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥500	36	10	37	18	1244.11	28.64
Gender	Male	≥350	38	10	36	16	1242.26	28.74
	Female	≥150	29	10	40	21	1248.27	28.06
Ethnicity	Hispanic/Latino	≥40	45	12	29	14	1240.86	27.93
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥280	32	10	38	20	1246.58	28.65
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥150	38	8	39	15	1241.82	29.01
	Two or more races	≥10	41	18	29	12	1237.35	24.47
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥500	36	10	37	18	1244.11	28.64
	Not Economically Disadvantaged	≥70	45	7	39	8	1237.61	26.12
	Economically Disadvantaged	≥420	33	11	37	19	1245.37	28.79
EL Status	Economic Information-Blank	≥10	58	0	17	25	1238.08	33.86
	Not EL	≥490	35	9	37	18	1244.27	28.70
	EL	≥10	40	30	20	10	1236.20	25.40

**G.9 Math Grade 4**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥510	26	20	26	28	1242.41	17.74
Gender	Male	≥320	26	22	25	27	1242.02	17.39
	Female	≥180	27	16	28	28	1243.09	18.38
Ethnicity	Hispanic/Latino	≥20	37	19	19	26	1241.19	20.02
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥300	26	18	27	29	1242.67	17.44
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥160	25	24	25	25	1242.02	18.12
	Two or more races	≥10	27	9	27	36	1240.91	20.31
Migrant Status	Migrant	<10	NR	NR	NR	NR	NR	NR
	Non-migrant	≥510	26	20	26	28	1242.43	17.75
Economic Status	Not Economically Disadvantaged	≥70	19	23	26	32	1244.77	16.97
	Economically Disadvantaged	≥430	28	19	27	27	1242.06	17.81
	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
EL Status	Not EL	≥500	26	20	26	28	1242.45	17.77
	EL	<10	NR	NR	NR	NR	NR	NR

**G.10 Math Grade 5**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥570	21	22	34	22	1244.29	16.96
Gender	Male	≥380	22	23	34	21	1243.89	17.36
	Female	≥180	20	21	35	24	1245.12	16.10
Ethnicity	Hispanic/Latino	≥40	24	15	43	17	1242.54	16.74
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥310	21	23	36	20	1244.00	16.79
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥190	23	21	31	26	1245.02	17.38
	Two or more races	≥10	10	30	30	30	1250.30	19.69
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥570	21	22	34	22	1244.29	16.96
	Not Economically Disadvantaged	≥80	24	19	35	22	1243.71	17.48
	Economically Disadvantaged	≥480	21	23	34	22	1244.29	16.86
	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
EL Status	Not EL	≥560	21	22	34	22	1244.31	17.00
	EL	<10	NR	NR	NR	NR	NR	NR

**G.11 Math Grade 6**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥800	24	25	18	34	1242.85	15.13
Gender	Male	≥520	22	25	18	35	1243.11	15.02
	Female	≥280	27	24	18	31	1242.37	15.36
Ethnicity	Hispanic/Latino	≥40	27	22	20	31	1242.24	14.75
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	≥10	38	23	15	23	1240.08	15.43
	Black or African American	≥470	22	28	18	33	1242.94	14.21
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥250	26	19	17	38	1243.25	17.02
	Two or more races	≥10	23	31	23	23	1238.92	8.60
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥800	24	25	18	34	1242.85	15.13
	Not Economically Disadvantaged	≥100	33	20	19	29	1240.75	15.10
	Economically Disadvantaged	≥690	22	25	18	35	1243.29	15.18
	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
EL Status	Not EL	≥790	24	25	18	34	1242.82	15.04
	EL	≥10	25	31	13	31	1244.50	19.73



**G.12 Math Grade 7**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥850	12	18	38	33	1250.79	18.50
Gender	Male	≥560	11	18	39	32	1250.40	18.57
	Female	≥290	13	16	36	34	1251.54	18.37
Ethnicity	Hispanic/Latino	≥30	18	13	24	45	1253.50	21.30
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥450	11	20	39	30	1250.39	18.23
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥320	11	16	37	36	1251.52	18.82
	Two or more races	≥20	22	4	52	22	1246.26	14.93
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥850	12	18	38	33	1250.79	18.50
	Not Economically Disadvantaged	≥120	17	18	37	29	1247.94	18.11
	Economically Disadvantaged	≥720	11	18	38	33	1251.28	18.51
	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
EL Status	Not EL	≥840	12	18	38	33	1250.79	18.55
	EL	<10	NR	NR	NR	NR	NR	NR

### G.13 Math Grade 8

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥920	21	18	21	40	1250.97	23.65
Gender	Male	≥620	20	18	22	41	1251.52	23.47
	Female	≥290	23	19	20	39	1249.81	24.03
Ethnicity	Hispanic/Latino	≥50	19	15	27	38	1252.69	23.30
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥510	23	18	19	39	1250.27	23.97
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥320	19	18	23	40	1251.36	23.24
	Two or more races	≥20	10	14	19	57	1257.57	23.35
Migrant Status	Migrant	<10	NR	NR	NR	NR	NR	NR
	Non-migrant	≥910	21	18	21	40	1251.01	23.68
Economic Status	Not Economically Disadvantaged	≥130	21	22	17	40	1250.69	23.88
	Economically Disadvantaged	≥770	21	17	22	40	1251.23	23.59
	Economic Information-Blank	≥10	45	18	27	9	1236.09	22.09
EL Status	Not EL	≥910	21	18	21	40	1250.97	23.64
	EL	≥10	17	17	25	42	1251.08	25.60

### G.14 Math HS

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥840	26	23	20	31	1242.51	17.21
Gender	Male	≥570	27	24	19	30	1242.35	17.62
	Female	≥270	24	20	24	32	1242.84	16.34
Ethnicity	Hispanic/Latino	≥20	29	32	18	21	1239.93	18.83
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	≥10	31	8	38	23	1241.38	21.72
	Black or African American	≥460	26	25	20	29	1241.77	15.88
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥320	26	19	21	34	1243.76	18.68
	Two or more races	≥10	36	0	9	55	1245.73	20.56
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥840	26	23	20	31	1242.51	17.21
	Not Economically Disadvantaged	≥110	24	20	19	37	1243.90	18.08
	Economically Disadvantaged	≥670	25	23	21	30	1242.45	16.98
EL Status	Economic Information-Blank	≥60	35	25	12	28	1240.52	18.12
	Not EL	≥830	26	23	20	31	1242.49	17.22
	EL	<10	NR	NR	NR	NR	NR	NR

**G.15 Science Grade 4**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥500	18	39	13	30	1239.97	11.20
Gender	Male	≥320	19	38	12	32	1240.02	11.39
	Female	≥180	18	40	14	28	1239.89	10.88
Ethnicity	Hispanic/Latino	≥20	23	42	8	27	1240.15	10.46
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥300	19	38	12	31	1240.29	11.55
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥150	17	40	12	31	1239.56	10.48
	Two or more races	≥10	18	18	27	36	1239.64	16.27
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥500	18	38	13	30	1239.98	11.21
	Not Economically Disadvantaged	≥70	17	35	15	33	1240.58	10.87
	Economically Disadvantaged	≥420	18	39	12	30	1239.96	11.20
	Economic Information-Blank	<10	NR	NR	NR	NR	NR	NR
EL Status	Not EL	≥490	18	39	13	30	1240.00	11.23
	EL	<10	NR	NR	NR	NR	NR	NR

**G.16 Science Grade 8**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥910	13	23	13	51	1244.64	12.60
Gender	Male	≥620	11	23	15	52	1245.26	12.13
	Female	≥290	18	22	11	49	1243.35	13.47
Ethnicity	Hispanic/Latino	≥50	19	29	6	46	1242.54	12.50
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR
	Black or African American	≥500	12	24	13	51	1244.77	12.15
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥320	14	20	16	50	1244.51	13.25
	Two or more races	≥20	5	19	5	71	1248.38	12.94
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥910	13	23	13	51	1244.65	12.62
	Not Economically Disadvantaged	≥130	14	24	14	47	1243.53	11.86
	Economically Disadvantaged	≥760	13	22	13	52	1244.92	12.67
EL Status	Economic Information-Blank	≥10	17	33	8	42	1239.83	15.97
	Not EL	≥900	13	22	13	51	1244.63	12.49
	EL	≥10	8	33	8	50	1245.42	20.18

**G.17 Science HS**

Category	Group	N	Percent by Achievement Level				Scale Score	
			Below Goal	Near Goal	At Goal	Above Goal	Mean	SD
Overall	-	≥850	18	19	21	43	1242.54	13.63
Gender	Male	≥570	19	18	21	42	1242.29	14.21
	Female	≥270	16	19	20	45	1243.05	12.32
Ethnicity	Hispanic/Latino	≥20	14	36	25	25	1238.39	13.89
	American Indian or Alaska Native	<10	NR	NR	NR	NR	NR	NR
	Asian	≥10	31	15	31	23	1237.23	14.04
	Black or African American	≥470	17	19	24	40	1241.68	12.03
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR
	White	≥320	18	16	16	50	1244.28	15.40
	Two or more races	≥10	18	27	18	36	1244.00	18.85
	Migrant Status	Migrant	<10	NR	NR	NR	NR	NR
Economic Status	Non-migrant	≥850	18	19	21	43	1242.54	13.63
	Not Economically Disadvantaged	≥110	20	19	18	43	1242.53	15.27
	Economically Disadvantaged	≥660	17	19	21	43	1242.72	13.04
EL Status	Economic Information-Blank	≥60	23	14	24	39	1240.65	16.2
	Not EL	≥840	18	19	21	43	1242.46	13.60
	EL	≥10	10	10	30	50	1249.10	14.93

## Appendix H. Classical Item Analysis Results – Field Test Items

Content Area	Grade	Form	N	Min Pvalue	Max Pvalue	Min Pb	Max Pb	Min Omit	Max Omit	Item Flagged
ELA	3	3	≥290	0.33	0.77	0.16	0.48	0.01	0.01	1
		3NV	≥200	0.30	0.58	0.14	0.56	0.09	0.12	1
	4	3	≥360	0.53	0.74	0.31	0.39	0.00	0.01	
		3NV	≥150	0.35	0.56	0.29	0.53	0.09	0.10	
	5	3	≥570	0.22	0.63	0.03	0.42	0.02	0.02	1
	6	3	≥800	0.59	0.77	0.33	0.56	0.02	0.02	
	7	3	≥860	0.47	0.62	0.23	0.41	0.01	0.02	
	8	3	≥930	0.42	0.69	0.22	0.47	0.01	0.02	
HS	3	≥850	0.35	0.59	0.16	0.43	0.03	0.03		
Math	3	3	≥500	0.44	0.58	0.33	0.54	0.05	0.06	1
	4	3	≥510	0.34	0.64	0.15	0.45	0.02	0.04	
	5	3	≥570	0.31	0.69	0.20	0.41	0.01	0.01	1
	6	3	≥800	0.37	0.69	0.31	0.54	0.02	0.03	1
	7	3	≥850	0.29	0.82	0.02	0.46	0.01	0.01	1
	8	3	≥920	0.30	0.65	0.06	0.43	0.02	0.02	1
	HS	3VA	≥420	0.26	0.56	0.04	0.39	0.01	0.04	2
3VB		≥420	0.28	0.64	0.12	0.38	0.02	0.03	1	
Science	4	3VA	≥250	0.22	0.77	0.21	0.39	0.01	0.02	1
		3VB	≥250	0.24	0.84	0.14	0.40	0.02	0.02	1
	8	3VA	≥450	0.38	0.67	0.12	0.38	0.00	0.01	
		3VB	≥460	0.31	0.89	-0.01	0.46	0.01	0.03	1
	HS	3VA	≥400	0.38	0.85	-0.03	0.51	0.01	0.03	1
		3VB	≥440	0.27	0.62	0.15	0.48	0.02	0.03	1

**Appendix I. LEAP Connect Standard Setting Report**

**LEAP Connect**

**Standards Validation  
and  
Standard Setting  
Final Report**

**Measurement Incorporated  
August 26, 2021**



## Contents

Executive Summary.....	254
Pre-Standard Setting Policy Meeting.....	254
Standards Validation.....	255
Standard Setting .....	255
Vertical Articulation and Follow-up .....	256
Policy Implications .....	260
Evaluations.....	260
Conclusions and Recommendations.....	260
Chapter 1: Introduction .....	263
Background .....	263
Chapter 2: Pre-Standard Setting Policy Meeting .....	266
Chapter 3: Standards Validation .....	272
Overview .....	272
Methodology.....	272
Panelists .....	272
Calibration and equating .....	273
Ordered item booklets.....	274
OPLS software .....	275
Agenda and Activities .....	276
General orientation webinar: Whole-group training .....	278
ALD development.....	278
Introduction to the bookmark procedure and OPLS software.....	278
Practice round.....	279
Review of Test 1.....	279
Review of Test 2.....	280
Results.....	280
Cut score changes .....	280
Evaluations.....	282
Chapter 4: Standard Setting.....	285
Overview .....	285

Methodology.....	285
Panelists .....	285
Instructional materials.....	286
Achievement level descriptors (ALDs) .....	286
Ordered item booklets.....	287
OPLS Software.....	287
Agenda and Activities .....	287
General orientation.....	288
Results.....	294
Chapter 5: Vertical Articulation and Follow-Up.....	297
Preparations.....	297
Facilitators and Panelists .....	297
Orientation.....	297
VAC Actions.....	299
Results.....	300
Evaluations.....	304
References .....	307
Appendix A. Facilitators and Panelists.....	308
Appendix B. Training Materials and Work Products.....	311
Math Grade 3 Threshold ALDs .....	349
Appendix C. Evaluations.....	364

## List of Tables

Table ES-1 Final Results for LEAP Connect English Language Arts Tests .....	9
Table ES-2 Final Results for LEAP Connect Mathematics Tests .....	9
Table ES-3 Final Results for LEAP Connect Science Tests .....	10
Table ES-4 Percentages of Students Scoring At or Above Goal .....	12
Table ES-5 Summary of Evaluations of All Activities.....	12
Table ES-6 Recommended Scale Score Ranges for LEAP Connect ELA, Math, and Science.....	13
Table 2.1 Pre-Policy Meeting Participants.....	18
Table 2.2 Consensus Ranges of Percentages of Students	

Expected to Score At or Above Goal.....	22
Table 2.3 Summary of Evaluations of the Pre-Policy Meeting .....	22
Table 3.1 LA LEAP Connect Standards Validation Participants Standards Validation Panels.....	25
Table 3.2 2015 NCSC Standard Setting: Final Theta Cut Points— ELA and Mathematics .....	26
Table 3.3 Standards Validation Agenda .....	29
Table 3.4 Results of Standards Validation for LEAP Connect English Language Arts Tests: Grades 3-8 and High School.....	33
Table 3.5 Results of Standards Validation for LEAP Connect Mathematics Tests: Grades 3-8 ....	34
Table 3.6 Summary of Evaluations of Standards Validation.....	34
Table 4.1 Standard Setting Panels .....	36
Table 4.2 Standard Setting Agenda.....	39
Table 4.3 Results of Round 1 of Standard Setting for LEAP Connect Science and Mathematics Tests.....	46
Table 4.4 Results of Round 2 of Standard Setting for LEAP Connect Science and Mathematics Tests.....	46
Table 4.5 Summary of Evaluations of Standard Setting .....	47
Table 5.1 VAC Composition.....	49
Table 5.2 Results of Vertical Articulation for LEAP Connect English Language Arts Tests .....	53
Table 5.3 Results of Vertical Articulation for LEAP Connect Mathematics Tests .....	53
Table 5.4 Results of Vertical Articulation for LEAP Connect Science Tests .....	54
Table 5.5 Summary of Vertical Articulation Evaluations .....	56
Table 5.6 Recommended Scale Score Ranges for LEAP Connect ELA, Math, and Science .....	57

## List of Figures

Figure ES-1. Impact for LEAP Connect English language arts tests.....	10
Figure ES-2. Impact for LEAP Connect mathematics tests.....	11
Figure ES-3. Impact for LEAP Connect science tests.....	11
Figure 2.1. Sample Context Information.....	20
Figure 2.2. Sample Option Graphic.....	21
Figure 3.1. Item Map Showing Two Cut Points.....	28
Figure 3.2. OIB Item Page Showing Metadata, Navigation Icons, and Portion of Test Item.....	28
Figure 3.3. Set a Bookmark.....	29
Figure 4.1. Round 1 Graphical Feedback.....	42
Figure 4.2. Round 1 Tabular Feedback.....	42
Figure 5.1a. Generally Reasonable Expectations.....	50
Figure 5.1b. Generally Unreasonable Expectations.....	50
Figure 5.2. Sample VAC Graphic.....	51
Figure 5.3. Impact for LEAP Connect English Language Arts Tests.....	54
Figure 5.4. Impact for LEAP Connect Mathematics Tests.....	55
Figure 5.5. Impact for LEAP Connect Science Tests.....	55

## Executive Summary

On June 21-24, 2021, the Louisiana Department of Education (LDOE), through a contract with Measurement Incorporated (MI) and edCount, conducted standards validation, standard setting, and vertical articulation for all LEAP Connect tests. Cut scores for all English language arts (ELA) tests and mathematics tests for grades 3-8 underwent standards validation on June 21. Standard setting was conducted for all science tests and the high school mathematics test on June 22-24. Finally, cut scores for all tests were reviewed in a vertical articulation activity the afternoon of June 24 and submitted to LDOE for final review on June 25.

### Pre-Standard Setting Policy Meeting

The standards validation and standard setting meetings were preceded by a pre-standard setting policy meeting on May 12, in which one Board of Elementary and Secondary Education (BESE) member, other state- and local-level administrators, and LDOE staff met to recommend impact ranges for the science tests and the high school mathematics test. Members of that committee reviewed LEAP Connect Policy Level Definitions, test materials, historical trends in percentages of students at or above Goal, and additional information about performance on similar tests in other states. The Policy Level Definitions (PLDs) describe the expectations for student performance at each of Louisiana's four achievement levels.

The achievement levels are part of Louisiana's cohesive assessment system and indicate a student's ability to demonstrate proficiency on the Louisiana Connectors for Students with Significant Cognitive Disabilities. The following list identifies the PLDs for the LEAP Connect assessment program.

- **Below Goal:** A student who performs at **below goal** level demonstrates a **minimal** understanding of key academic knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **low complexity texts or tasks** and **will need substantial academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.
- **Near Goal:** A student who performs at **near goal** level demonstrates a **partial** understanding of key academic knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **low and moderate complexity texts or tasks** and **will need moderate academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.
- **At Goal:** A student who performs **at goal** level demonstrates a **satisfactory** understanding of key knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **moderate and high complexity texts or tasks** and **may need minimal academic scaffolds and supports** as the student transitions to the next

grade/course and progresses toward inclusive college, career, and community opportunities.

- **Above Goal:** A student who performs at **above goal** level demonstrates a **thorough** understanding of key knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **high complexity texts or tasks** and **will need few academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.

It should be noted that at the outset, the committee set expectations based on 2020 data, the last confirmed set of scores known to be free of COVID effects. The committee made the following recommendations regarding the percentages of students expected to score At or Above Goal:

- Science Grade 4: 42-61%
- Science Grade 8: 46-71%
- High School Science: 46-71%
- High School Mathematics: 50-64%

### **Standards Validation**

Standards validation was conducted on June 21, 2021. Panels of Louisiana educators reviewed LEAP Connect Policy Level Definitions and the existing range achievement level descriptors (ALDs) to create threshold ALDs. Range ALDs are grade- and subject-specific descriptions of what students in the different achievement levels know and can do. Threshold ALDs describe what students know and can do if their ability is right at the cut point. Panelists then used those threshold ALDs as they reviewed test items for ELA grades 3-8 and high school and for mathematics grades 3-8.

The existing cut scores were identified in item maps in ordered item booklets (i.e., test booklets rearranged in order of item difficulty) with bookmarks placed on pages associated with each cut score. After receiving instruction in the goals of the review and the procedure by which they would make their recommendations, panelists examined the key items associated with each cut score (Near Goal, At Goal, and Above Goal), relative to the threshold ALD for each level, and confirmed or moved each bookmark. These bookmarks were then translated into ability scores, and associated percentages of students at or above each ability score.

### **Standard Setting**

Measurement Incorporated employed a bookmark procedure in two rounds to set cut scores on all three science tests and the high school mathematics test. Panels of Louisiana educators first reviewed LEAP Connect Policy Level Definitions and existing range achievement level descriptors (ALDs) and modified them to create threshold ALDs. They then received instruction

in the bookmark procedure and an orientation to MI's proprietary OPLS software which they used to conduct standard setting in two rounds. Each panel reviewed two tests: Panel 1 reviewed tests for science grades 4 and 8, while Panel 2 reviewed the high school science and mathematics tests. Each panel had an opportunity to review the results of the first round of standard setting as well as impact data and policy committee recommendations prior to conducting the second round.

### **Vertical Articulation and Follow-up**

MI conducted vertical articulation for all three subjects, the purpose of which was to review all cut scores across all grades for a single subject and recommend changes in one or more cut scores to bring the full set into cross-grade alignment. After an introduction to the purpose and procedure of vertical articulation, MI and edCount staff led three committees – one each for English language arts, mathematics, and science – through a review of all cut scores and impact for a given subject. LDOE staff reviewed the results and made one recommendation: For grade 3 ELA, At Goal level, round down (to page 16) instead of up (to page 17). When finding a median with an even number of members, it is possible that the median will lie between two pages. In this instance, rounding down to page 16 rather than up to page 17 seemed more reasonable, particularly since three panelists had recommended setting the cut on page 15. Final results are shown in Tables ES-1, ES-2, and ES-3 and illustrated in Figures ES-1, ES-2, and ES-3.

**Table ES-1**

**Final Results for LEAP Connect English Language Arts Tests**

	<b>% At or Above Cut Score</b>		
<b>Grade</b>	<b>Near Goal</b>	<b>At Goal</b>	<b>Above Goal</b>
3	68.3	50.3	12.9
4	68.3	51.0	22.2
5	81.9	59.9	18.2
6	72.5	51.0	23.5
7	73.3	59.8	41.0
8	85.5	56.9	34.5
HS	80.7	66.9	25.4

**Table ES-2**

**Final Results for LEAP Connect Mathematics Tests**

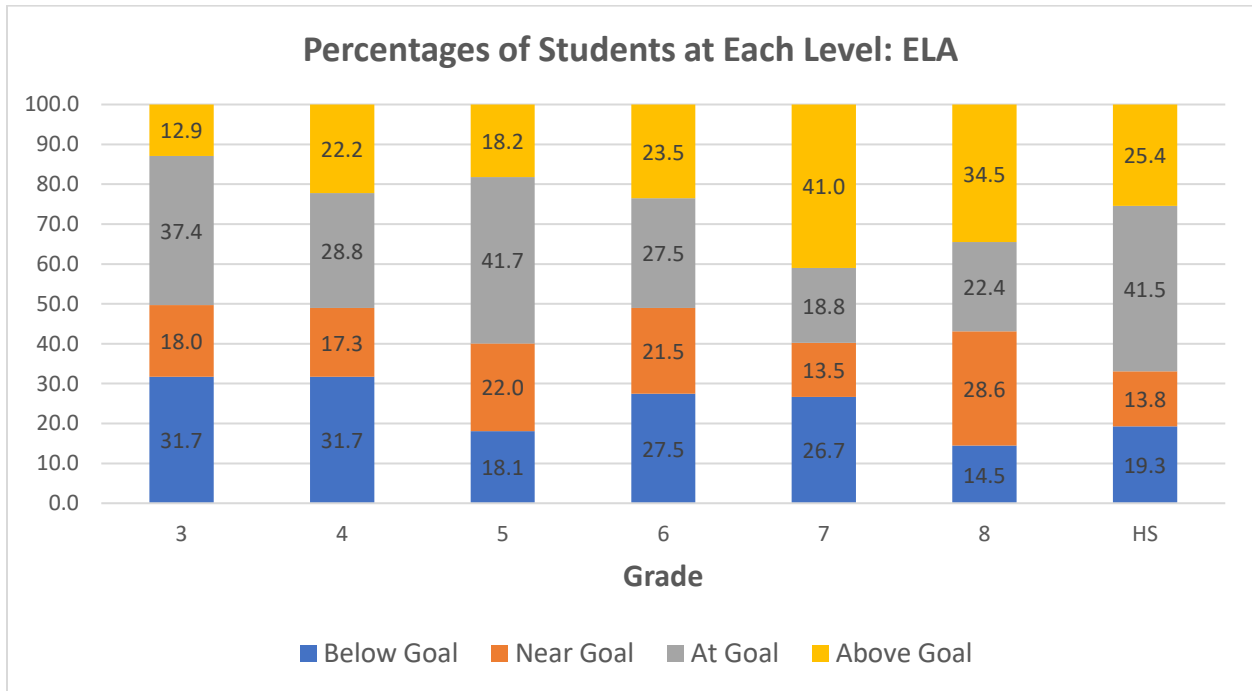
	<b>% At or Above Cut Score</b>		
<b>Grade</b>	<b>Near Goal</b>	<b>At Goal</b>	<b>Above Goal</b>
3	64.5	53.5	19.8
4	72.8	60.4	28.7
5	75.2	52.1	20.7
6	80.6	54.5	32.8
7	87.8	63.9	37.1
8	80.1	63.5	38.5
HS	76.5	52.2	31.2



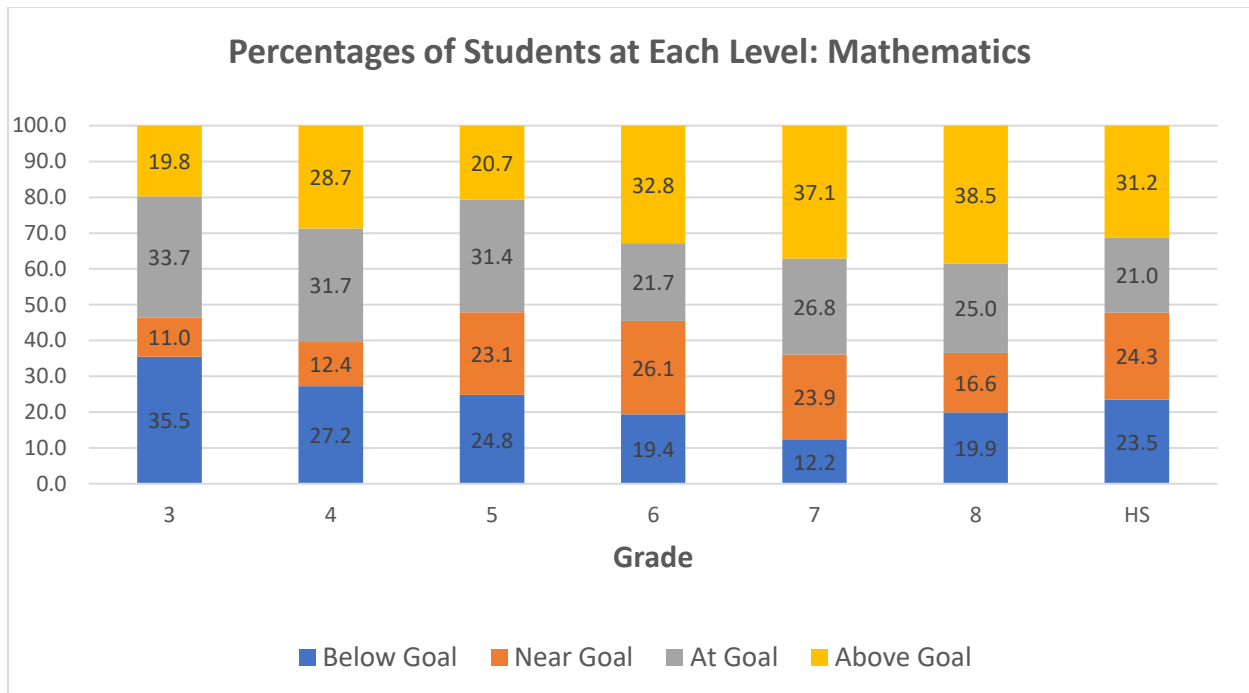
**Table ES-3**

**Final Results for LEAP Connect Science Tests**

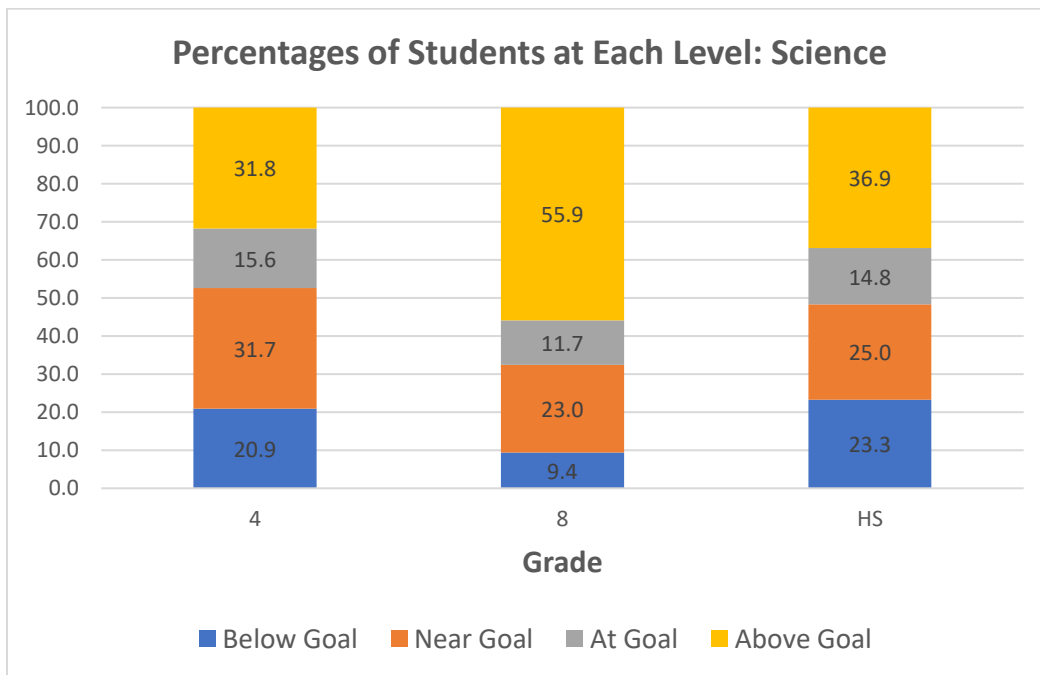
Grade	% At or Above Cut Score		
	Near Goal	At Goal	Above Goal
4	79.1	47.4	31.8
8	90.6	67.6	55.9
HS	76.7	51.7	36.9



**Figure ES-1. Impact for LEAP Connect English language arts tests**



**Figure ES-2. Impact for LEAP Connect mathematics tests**



**Figure ES-3. Impact for LEAP Connect science tests**

## Policy Implications

In May, policymakers and other stakeholders recommended ranges of percentages of students scoring At or Above Goal on the three science tests and the high school mathematics test. At the end of all standard setting and vertical articulation activities, the cut scores recommended by panelists matched the expectations of that policy committee, as shown in Table ES-4.

**Table ES-4**

### Percentages of Students Scoring At or Above Goal

<b>Test</b>	<b>Policy Expectation</b>	<b>Final Result</b>
Grade 4 Science	42-61%	47.4%
Grade 8 Science	46-71%	67.6%
High School Science	46-71%	51.7%
High School Math	50-64%	52.2%

## Evaluations

At the end of each session, MI staff collected evaluations from participants. These evaluations covered not only the process of training and presentation of information but of outcomes as well. The full report contains tables summarizing the evaluation of each activity, and overall evaluations are summarized in Table ES-5. From start to finish, participants were enthusiastic about the process and confident in the recommendations being forwarded to LDOE and ultimately to the BESE.

**Table ES-5**

### Summary of Evaluations of All Activities

<b>Activity</b>	<b>Number of Responses</b>	<b>% Agree or Strongly Agree</b>
Pre-Policy Meeting	7	97
Standards Validation	44	97
Standard Setting	12	100
Vertical Articulation	23	100

## Conclusions and Recommendations

The standards validation, standard setting, and vertical articulation activities were carried out in strict compliance with the plan Measurement Incorporated submitted to and approved by the Louisiana Department of Education and its Technical Advisory Committee. The impact ranges

recommended by the policy committee in May matched the final cut scores and impacts established by the policy advisory committee. The panelists were strongly supportive of the process by which they arrived at their cut score recommendations in standards validation, standard setting, and vertical articulation.

The cut scores recommended were presented to LDOE for review, and LDOE decided to establish a new scale system (1200-1290) using a two-point method (Near Goal cut of 1232 and At Goal cut of 1240). MI therefore recommends that the cut scores on the new score scale system in Table ES-6 be adopted for the 2020-21 school year and beyond.

**Table ES-6**

**Recommended Scale Score Ranges for LEAP Connect ELA, Math, and Science**

<b>Subject</b>	<b>Grade</b>	<b>Below Goal</b>	<b>Near Goal</b>	<b>At Goal</b>	<b>Above Goal</b>
<b>ELA</b>	<b>3</b>	1200 - 1231	1232 - 1239	1240 - 1257	1258 - 1290
	<b>4</b>	1200 - 1231	1232 - 1239	1240 - 1252	1253 - 1290
	<b>5</b>	1200 - 1231	1232 - 1239	1240 - 1252	1253 - 1290
	<b>6</b>	1200 - 1231	1232 - 1239	1240 - 1249	1250 - 1290
	<b>7</b>	1200 - 1231	1232 - 1239	1240 - 1247	1248 - 1290
	<b>8</b>	1200 - 1231	1232 - 1239	1240 - 1243	1244 - 1290
	<b>HS</b>	1200 - 1231	1232 - 1239	1240 - 1258	1259 - 1290
<b>Math</b>	<b>3</b>	1200 - 1231	1232 - 1239	1240 - 1275	1276 - 1290
	<b>4</b>	1200 - 1231	1232 - 1239	1240 - 1251	1252 - 1290
	<b>5</b>	1200 - 1231	1232 - 1239	1240 - 1256	1257 - 1290
	<b>6</b>	1200 - 1231	1232 - 1239	1240 - 1247	1248 - 1290
	<b>7</b>	1200 - 1231	1232 - 1239	1240 - 1256	1257 - 1290
	<b>8</b>	1200 - 1231	1232 - 1239	1240 - 1254	1255 - 1290
	<b>HS</b>	1200 - 1231	1232 - 1239	1240 - 1248	1249 - 1290

<b>Subject</b>	<b>Grade</b>	<b>Below Goal</b>	<b>Near Goal</b>	<b>At Goal</b>	<b>Above Goal</b>
<b>Science</b>	<b>4</b>	1200 - 1231	1232 - 1239	1240 - 1243	1244 - 1290
	<b>8</b>	1200 - 1231	1232 - 1239	1240 - 1243	1244 - 1290
	<b>HS</b>	1200 - 1231	1232 - 1239	1240 - 1244	1245 - 1290

## Chapter 1: Introduction

On June 21-24, 2021, The Louisiana Department of Education (LDOE), through a contract with Measurement Incorporated (MI) and edCount, conducted standards validation, standard setting, and vertical articulation for all LEAP Connect tests. Cut scores for all English language arts (ELA) tests and mathematics tests for grades 3-8 underwent standards validation on June 21. Standard setting was conducted for all science tests and the high school mathematics test on June 22-24. Cut scores and impact data for all tests were reviewed in a vertical articulation activity the afternoon of June 24. This report describes the processes by which those activities were conducted, and the outcomes associated with each.

### Background

Prior to 2018, the Louisiana Department of Education (LDOE) administered the LEAP Alternate Assessment Level 1 (LAA1). In 2018, the LDOE adopted the ELA and mathematics alternate assessments created by the National Center and State Collaborative (NCSC) to serve as the foundation for the development of the LEAP Connect assessments. Cut scores for the NCSC tests were set in 2015 (National Center and State Collaborative, 2016). In 2018, LDOE contracted with MI to develop and manage the LEAP Connect assessments in ELA (grades 3-8 and high school or HS hereafter), mathematics (grades 3-8 and HS) and science (grades 4, 8, and HS). LEAP Connect assessments are aligned to the K-12 Louisiana Connectors (LCs), standards for students with significant cognitive disabilities. These LCs are fully aligned to the Louisiana Student Standards.

In addition, LDOE contracted with edCount to review the NCSC ELA and math blueprints along with these LCs to customize them to Louisiana specifications. As the science LCs and blueprints were newly created, science items in grades 4, 8, and HS were field tested in both the spring 2019 and 2020 administrations.

For all LA LEAP Connect assessments, the LDOE recognizes four achievement levels:

- Level 1 - Low Text/Task Complexity (Below Goal)
- Level 2 - Low Text/Task Complexity (Near Goal)
- Level 3 - Moderate Text/Task Complexity (At Goal)
- Level 4 - High Text/Task Complexity (Above Goal)

Since adoption of NCSC-based assessments, the LDOE made changes to the tests, some major and some minor:

1. Extensive modifications were made to the high school mathematics assessment with changes to over 50% of the LCs.
2. Science is a new assessment with no established achievement levels.
3. Addition of the ELA writing task to score which was not part of previous NCSC standard setting.

In our technical proposal, dated May 25, 2018, we proposed the following for standards validation:

- Select 6–8 Louisiana educators familiar with the LEAP Connect standards for the particular grade. From this group, we would select panelists to participate in vertical articulation.
- Create an ordered item booklet (OIB) for each test under review. Items in each OIB will be arranged in difficulty order, one item per page, from easiest to hardest and will contain the response probability (RP) at the top of the page, along with other pertinent item metadata.
- Provide an orientation to the cut score validation process.
- Examine items in the OIB at or near the previously defined cut scores to determine whether the item matching (or coming closest to) the previously established cut score truly defines the threshold for that achievement level or not. If not, then the panel reviews items just before and just after the initial threshold item and identifies a more appropriate item. The RP value of that item then becomes the new cut score.

Subsequent discussions and negotiations between MI and the LDOE led to the inclusion of standard setting for high school mathematics and science grades 4, 8, and high school, vertical articulation for all cut scores for all tests, and a pre-standard setting policy meeting. MI staff submitted plans for the policy meeting and assisted LDOE staff in conducting that meeting on May 12, 2021. In addition to those tasks listed above, MI staff were also to prepare OIBs and training materials for all meetings. OIBs and training materials were submitted to LDOE for approval prior to the workshops.

With regard to panelist selection, the criteria for standard setting were the same as those for standards validation. In both instances, every effort was made to match the composition of the panels to the overall composition of the educator population in Louisiana. LDOE chose each panelist, and then after they received approval from the potential participant's district, LDOE submitted the names to MI. LDOE began submitting names to MI beginning June 2, 2021, on a rolling basis. MI then began reaching out to participants to secure their participation to the standards setting or validation as LDOE had assigned them. The target number of participants for each panel (seven standards validation groups and two standard setting groups) was 6-8 participants. LDOE purposely oversampled and submitted over 80 potential participants to MI to be invited to either one or both of the meetings. A total of 60 participants declined either

one or both of the meetings. Ultimately, the final count of participants was 44 in standards validation and 12 in Standard Setting. Some participants were in both meetings if their qualifications matched the needs of the event. Panelist qualifications are summarized in Appendix A.



## Chapter 2: Pre-Standard Setting Policy Meeting

It is often advisable to convene a policy committee prior to standard setting to set some boundaries on cut scores and impact. MI staff worked with LDOE staff to conduct such a meeting (virtually) on May 12, 2021, for the four tests (all three grades of science plus high school mathematics). In preparation for this meeting, LDOE staff assembled the relevant policymakers and stakeholders, and MI staff assembled relevant impact data for LEAP Connect as well as NCSC impact data. We also prepared summaries of the differences in content between the NCSC mathematics tests administered in 2015 in multiple states and the LEAP Connect tests administered in Louisiana in 2018, 2019, and 2020. We focused specifically on the cut scores for Level 3 and the associated impact data. In preparation for the meeting, LDOE staff assembled nine policymakers and stakeholders, listed in Table 2.1.

**Table 2.1**

### Pre-Policy Meeting Participants

<b>Name</b>	<b>Role</b>
Dr. Belinda Davis	Board Member, Louisiana Board of Elementary and Secondary Education
Kathy Noel	Deputy Assistant Superintendent, LDOE Division of Assessments, Accountability, and Analytics
Darwan Lazard	Superintendent, Evangeline Parish School System
Cherilyn Andrews	Teacher, IDEA Public Schools, Standards Setting Committee Member
Gary Brown	Educational Diagnostician, Rapides Parish School System
Linda Fonger	Supervisor of Special Services, Jeff Davis Parish School System
Melanie Brenckle	Principal, LA School for the Visually Impaired, Special School District
Serena White	Supervisor of Curriculum and Instruction, Monroe City Schools, Accountability Commission Member
Dr. Shelia Lockett	Executive Director for the Department of Exceptional Children, Caddo Parish School System, SPED Fellowship Academy Mentor

Mr. Lazard was called away at the last minute but arranged for a replacement, Mr. Michael Lumbas, a deputy superintendent from Evangeline Parish. Mr. Brown was unable to participate, and there was no replacement for him. The original plan called for 6-8 policymakers and stakeholders, so the goal for participation was met.

MI staff assembled relevant impact data for the LEAP Connect assessments as well as the National Center and State Collaborative (NCSC) tests, along with summaries of the differences in content between the NCSC mathematics tests administered in 2015 in multiple states and the LEAP Connect tests administered in Louisiana in 2018, 2019, and 2020. Data were also pulled from the previous generation of tests (the LEAP Alternate Assessment Level 1 (LAA 1)). They focused specifically on the cut scores for Level 3 (At Goal) and the associated impact data. Datasets included the following:

- 2017 LAA 1 Science Meets % At or Above
- 2018 LEAP Connect ELA and Math % At Level 2 (Near Goal) or Above
- 2018 LEAP Connect ELA and Math % At Level 3 (At Goal) or Above
- 2018 LEAP Connect ELA and Math % At Level 4 (Above Goal)
- 2015 NCSC Math Level 3 % At or Above
- 2019 LEAP Connect Math % At Level 2 (Near Goal) or Above
- 2019 LEAP Connect Math % At Level 3 (At Goal) or Above
- 2019 LEAP Connect Math % At Level 4 (Above Goal)
- 2020 LEAP Connect Math % At Level 3 (At Goal)

MI hosted a two-hour Teams meeting in which Dr. Michael Bunch presented impact data for LAA 1 and LEAP Connect tests, noting the differences in percentages of students scoring at or above Proficient, as defined for federal reporting purposes. It should be noted at the outset that the committee set expectations based on 2020 data, the last confirmed set of scores known to be free of COVID effects.

Dr. Bunch also presented a detailed review of the differences in achievement level descriptors (ALDs), test blueprints, and sample test items for LAA 1 and corresponding LEAP Connect assessments. Mr. David Hopkins of the LDOE then presented recommendations to the group and invited them to consider the following questions for each test:

- What percentage of students would you expect to be at Level 3 (At Goal) or above?
- What is the minimum percentage of students you would expect to be at Level 3 (At Goal) or above?
- What is the maximum percentage of students you would expect to be at Level 3 (At Goal) or above?

Examples of the types of information Dr. Bunch and Mr. Hopkins presented are shown in Figures 2.1 and 2.2.

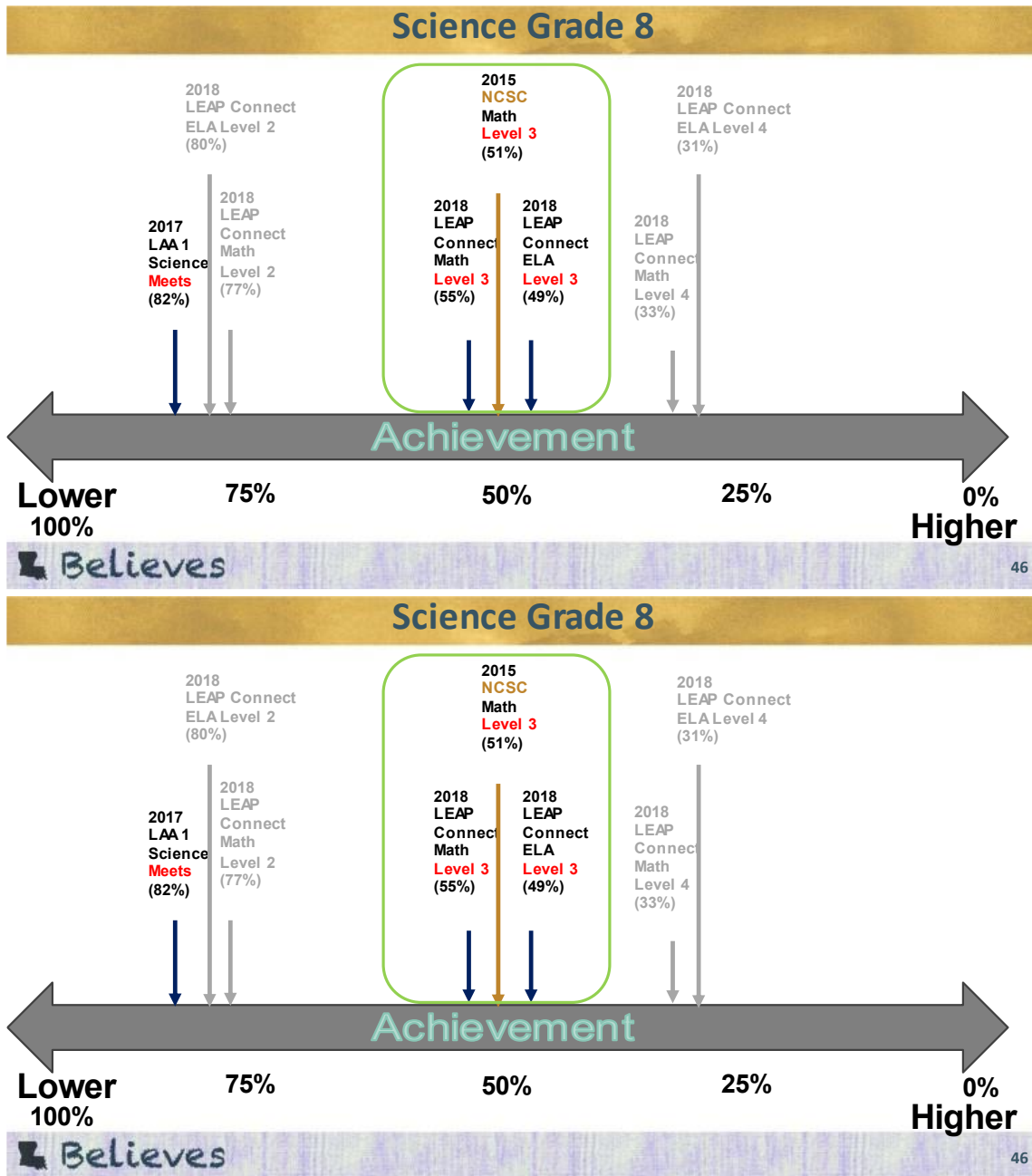
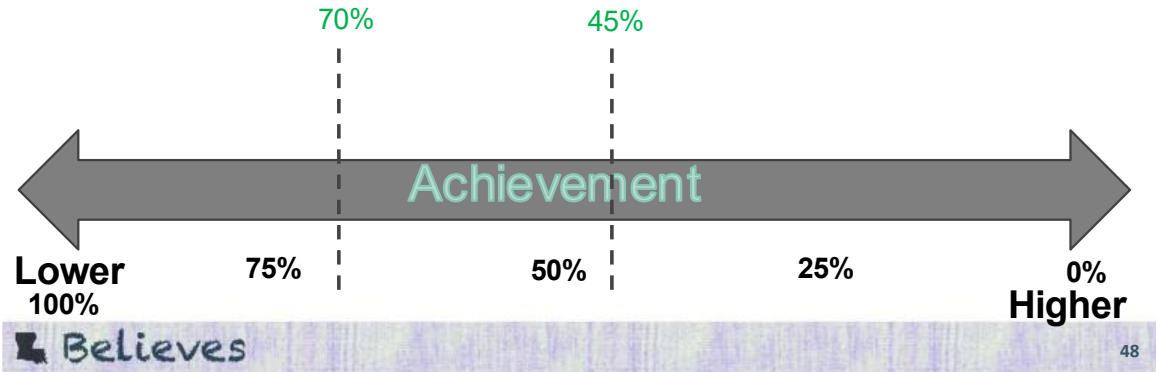


Figure 2.1. Sample Context Information

**Policy Meeting Recommended Range for  
Grade 8 Science Level 3  
(Option 2)**



**Policy Meeting Recommended Range for  
Grade 8 Science Level 3  
(Option 2)**

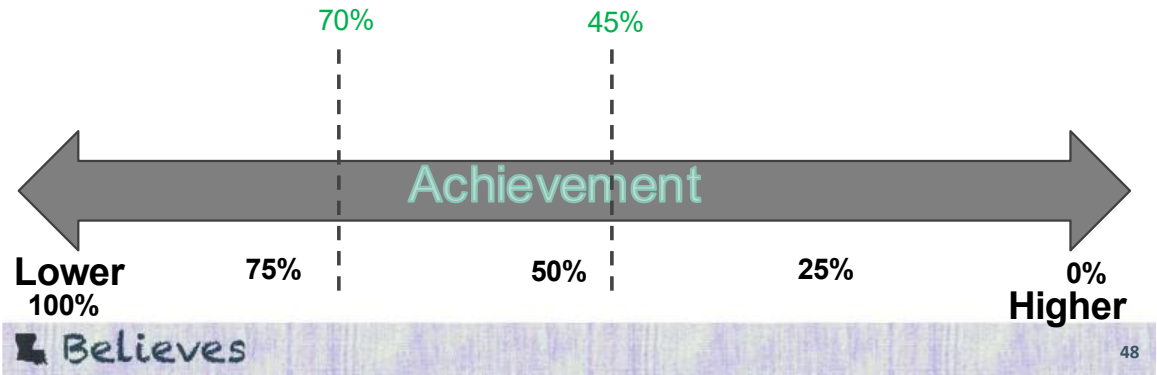


Figure 2.2. Sample Option Graphic

After they had reviewed the context information and options, Mr. Hopkins polled the group, and MI staff recorded individual responses to determine a mean response to each of the last two questions for each test. These means were then recorded and taken as the upper and lower boundaries guiding the establishment of cut scores on the four tests. Dr. Bunch then presented the consensus ranges for the participants to review and discuss. In each instance, the ranges were accepted without objection. These ranges are presented in Table 2.2.

**Table 2.2**  
**Consensus Ranges of Percentages of Students Expected to Score At or Above Goal**

<b>Test</b>	<b>Expected % At or Above Goal</b>	
	<b>Minimum Estimate</b>	<b>Maximum Estimate</b>
Science Grade 4	42%	61%
Science Grade 8	46%	71%
Science High School	46%	71%
Mathematics High School	50%	64%

Following the meeting, LDOE staff sent an evaluation form to each participant. Responses to that evaluation are summarized in Table 2.3.

**Table 2.3**  
**Summary of Evaluations of the Pre-Policy Meeting**

<b>Statement</b>	<b>SA</b>	<b>A</b>	<b>?</b>	<b>D</b>	<b>SD</b>	<b>% A or SA</b>
The purpose of my participation was clearly explained to me.	7	0	0	0	0	100
My task was clearly explained to me.	7	0	0	0	0	100
The information presented was sufficient for me to complete my task.	6	1	0	0	0	100
The pace of the presentation was appropriate.	7	0	0	0	0	100
The decision-making process was reasonable.	6	1	0	0	0	100
I felt free to express my opinion and be heard.	7	0	0	0	0	100
I am confident that the recommendations I made were sound.	6	0	1	0	0	86
I believe the consensus decision was a reasonable one.	6	0	1	0	0	86

Key: SA = Strongly Agree; A = Agree; ? = Undecided; D = Disagree; SD = Strongly Disagree

From the responses of the seven (out of eight) participants who completed the form, it is clear that the meeting went well, and that the consensus ranges faithfully represent the informed consent of the participants. These ranges will be presented to standard setting panelists in June after their first round of cut score recommendations.

## Chapter 3: Standards Validation

### Overview

Mattar, Hambleton, Copella, and Finger (2012) have identified conditions that might indicate a need to revisit cut scores after a period of time, particularly if there are changes in test content. It had been six years since cut scores were established for the NCSC assessments, and there have been some content changes as well. Furthermore, while NCSC used a 2-parameter logistic (2PL) model to calibrate tests, the LDOE adopted a Rasch model because the 2PL model requires more students per test than Louisiana has, and the Rasch model is able to accommodate those smaller numbers. Although model change, *per se*, does not necessitate a validation or resetting of cut scores, it could create doubt in the minds of some stakeholders. LDOE therefore considered it prudent to examine the current cut score locations to determine if they are still appropriate for use in Louisiana.

MI conducted an online standards validation for all tested ELA grades and grades 3-8 of mathematics on June 21, 2021. LDOE recruited Louisiana educators who reviewed the cut points for ELA in grades 3-8 and HS and for mathematics grades 3–8 set in 2015 by the National Center and State Collaborative (2016). Using the standard setting software OPLS (Online Performance Level Setting) we have used successfully for several standard setting activities since 2014, we constructed ordered item booklets (OIBs) with current cut points indicated on item maps. LDOE staff recruited panelists, whom MI trained. Panelists reviewed items from the 2021 tests, arranged in OIBs with existing scale score cut points indicated, and noted whether each existing cut point was appropriate, too high, or too low, using threshold ALDs they had created that morning by marking up range ALDs. Panelists had pre-COVID impact data (from spring 2020) and other pertinent information available to them as they made their judgments.

### Methodology

#### Panelists.

LDOE recruited panelists and submitted names to MI. MI maintained contact with panelists and prepared training materials, along with evaluation forms. Additionally, MI provided training on the Microsoft® Teams software for panelists prior to the standards-validation meeting. In order to participate, all panelists were required to submit a nondisclosure agreement (NDA) to MI prior to participating in the standards-validation process.

MI and LDOE staff worked together to assemble the panels, train them in the use of the meeting software and OPLS standard-setting software, and make sure they were prepared and available for the duration of the workshop. Backup panelists were also identified and were

called in to replace panelists who for various reasons had to drop out. Since the backup panelists had the same qualifications as the original panelists, MI and LDOE managers concluded that the final composition of the two panels met the original specifications outlined in the plan:

- 1 content expert with grade-band teaching experience
- 4-5 special education experts with K-12 teaching experience
- 1 English language learner expert with K-12 teaching experience
- 1 Administrator

Table 3.1 shows the names of the seven facilitators and numbers of panelists for each panel. Although all panels began with at least six members, one member of the ELA 7-8 panel had to leave after the initial training, and it was not possible to move a panelist from one of the two math panels with seven members. Names and qualifications of panelists are included in Appendix A.

**Table 3.1**  
**LA LEAP Connect Standards Validation Participants**  
**Standards Validation Panels**

<b>Panel</b>	<b>MI/edCount Facilitator</b>	<b># of Panelists</b>
ELA 3-4	Melissa Fincher	6
ELA 5-6	Jean Clayton	6
ELA 7-8	Heather Peltier	5
ELA HS	Antoinette Melvin	6
Math 3-4	Patricia Richard	6
Math 5-6	Winnie Reid	7
Math 7-8	Tracy Fazio	7

**Calibration and equating.**

The original NCSC assessments, based on data from a consortium of states, were calibrated using a two-parameter logistic (2PL) model. In the 2PL model both item difficulty and the item discrimination parameters are estimated, thus requiring a larger sample to yield stable estimates. Given the smaller number of students who take the LEAP Connect assessments (approximately 600—1,000 per grade/content area), the Rasch model was used, commencing with the spring 2021 administration. The Rasch model only estimates the item difficulty parameter and works best with a smaller sample size (~500) to yield stable parameter estimates.



To minimize the impact of COVID-19 on item statistics, MI recommended using the pre-equated item parameter estimates from the 2019 and 2020 administrations when the items were initially field tested, whenever possible. Additionally, impact data were derived from the 2020 administration of the LEAP Connect assessments to further reduce the COVID-19 influence on the resulting standards.

**Ordered item booklets.**

MI staff created ordered item booklets using the items of the 2021 tests. These OIBs contained an item map showing the location of the three initial cut scores, as well as content standard, cognitive level, and other pertinent metadata. Each page of the OIBs contained a single item, along with links to achievement level descriptors (ALDs), passages and other reference materials, and the test administration manual. Every OIB was loaded into MI’s OPLS standard setting software, which included a host of navigation tools and links.

English language arts OIBs contained both multiple-choice (MC) and constructed-response (CR) items. One item set was actually a cluster of items that yielded a score of 1 for 1 or 2 correct responses, a score of 2 for 3-4 correct response, and a score of 3 for more correct responses. There was also a writing task that was scored on three dimensions, with each dimension scored on a 1-3 scale. Thus, responses to those items appeared on multiple pages in the OIB, one page to indicate each score point.

MI staff reviewed each item map to make sure there were no large theta gaps, particularly in the areas of the cut scores. Psychometricians and content specialists worked together to insert additional items where necessary. We forwarded the updated OIBs to LDOE for review and approval.

Panelists reviewed items from the online versions of the mathematics tests within MI’s Online Performance Level Setting (OPLS) software (see **OPLS description** below). The items were presented to the panelists exactly as they were presented to the students. Each panelist reviewed the LDOE range ALDs and the NCSC-established cut points shown in Table 3.2.

**Table 3.2**  
**2015 NCSC Standard Setting: Final Theta Cut Points— ELA and Mathematics**

Content Area	Grade	Near Goal	At Goal	Above Goal
English Language Arts	3	-0.70	-0.18	0.72
	4	-0.53	-0.01	1.43
	5	-0.84	-0.13	1.16

Content Area	Grade	Near Goal	At Goal	Above Goal
	6	-0.63	0.18	1.19
	7	-0.59	-0.20	0.95
	8	-0.75	0.04	0.78
	HS	-0.77	-0.37	0.90
Mathematics	3	-0.65	-0.28	0.77
	4	-0.55	0.01	0.82
	5	-0.84	-0.11	0.99
	6	-0.61	-0.10	0.53
	7	-0.91	-0.25	0.77
	8	-0.66	-0.18	0.44

As the NCSC difficulty estimates were based on the 2PL model, a conversion/recalibration was necessary to ensure that the NCSC estimates were equivalent to the Rasch model estimates. This recalibration was conducted prior to selecting item sets.

### OPLS software.

In 2013-14, MI created the Online Performance Level Setting (OPLS) software package, based on a concept developed by Dr. Michael Bunch (2013). Key features of the software are described briefly below. Figures 3.1-3.3 show key features of the software used by panelists.

Page 1	947196	1227	
Page 2	947213	1227	
Page 3	947242	1229	
Page 4	947063	1231	
Page 5	947121	1232	
Page 6	947179	1232	
Page 7	947220	1234	
Page 8	947137	1235	
Page 9	947062	1235	
Page 10	947212	1237	Level 2
Page 11	947227	1237	
Page 12	947101	1238	
Page 13	947072	1239	
Page 14	947095	1239	
Page 15	947100	1240	Level 3
Page 16	947210	1241	
Page 17	947145	1241	

**Figure 3.1. Item Map Showing Two Cut Points**

Form List / Math 6 - Standards Validation / Item 984985 **LEVEL 2** ITEM MAP < PREVIOUS NEXT >

Enter note ...

Item Id	Form Session Name	Item Sequence	Key (MC Items)	Max Score Points	StandardFormat (LC-1)	Reporting Category (LC-1)	Standard Description (LC-1)	Cognitive Complexity	Item Type	Item Difficulty	Item Discrimination	Rate
984985	Session 1	2	B	1	LC.A1.S-ID.A.2a	Statistics	Use descriptive stats; range, median, mode, mean, outliers/gaps to describe the data set.	1	MC			

DTA ALD ITEM

Calculator may be used on this item.

This item is about a number line.

This is a number line.

**Number of Pets**

The least value is farthest to the left on the number line.

**Figure 3.2. OIB Item Page Showing Metadata, Navigation Icons, and Portion of Test Item**

Form List / Math 3 Standards Validation / Page 10 **LEVEL 2** ITEM MAP

Enter note ...

Page ID	Item Code	Scale Score	Cut	Key (MC Items)	Standard Format	Reporting
10	947212	1237	Level 2	A	LC.3.OA.D.9c	Operations ar

DTA ITEM ALD

[Open In A New Window](#)

947212

Calculator may be used on this item.

Provide student with Pattern 1 showing sets of squares from the Grade 3 Mathematics Reference Materials.

**Item 3**

This item is about patterns.

This is a pattern.

**Preview Mode**  
Changes will not be saved

**Figure 3.3. Set a Bookmark**

**Agenda and Activities.**

Panelists first reviewed existing range ALDs to create threshold ALDs. Then, using these threshold ALDs, they reviewed ordered item booklets with item maps showing the current scale score for each item. The items with scale scores equivalent to or closest to the 2015 cut scores were marked, as shown in Figure 3.1. Ultimately, panelists were asked to articulate rationales for either retaining or adjusting the cut scores, grounded in the threshold ALDs and item content.

The agenda for the one-day session is shown in Table 3.3, followed by a detailed summary of the actual standards-validation activities. The meeting included both whole-group and small-group activities. The whole-group activities included only those topics relevant to everyone, such as general ground rules, and orientation to the standards validation procedure. We took this approach to make sure all panelists heard and saw the same thing. All other grade-content specific training and work was done in small groups. Times for each activity were intentionally flexible to allow for the varying paces of the seven groups and the complexity of the tasks they were to perform; therefore, the times shown in Table 3.3 are approximate.

**Table 3.3**

**Standards Validation Agenda**

<b>Session</b>	<b>Activities</b>
A.M. General Orientation 1 (8:00 a.m.)	Overview of 2015 standard setting Changes to tests ALDs
Breakout 1: ALD Development (8:45 a.m.)	Review of Test 1 range ALDs Markup of range ALDs Creation of Test 1 threshold ALDs
A.M. General Orientation 2 (10:15 a.m.)	Introduction to standards validation Introduction to OPLS Q&A
Breakout 2: Test 1 (10:45 a.m.)	Practice round Validation/Modification of Test 1 cut scores
Lunch (11:30 a.m.)	
Breakout 2: Test 2 (12:00 Noon)	Continuation of validation/modification of Test 1 cut scores as necessary Creation and review of Test 2 ALDs Validation/Modification of Test 2 cut scores Wrap-Up/Evaluation
Adjourn (4:30 p.m.)	

### **General orientation webinar: Whole-group training.**

All panelists logged on to a webinar in Microsoft® Teams by 7:45 a.m. (CDT) on Monday, June 21, 2021. Dr. Jami-Jon Pearson, LEAP Connect Project Director at MI, opened the webinar and introduced the speakers. Mr. David Hopkins, LDOE Research Analyst Manager, welcomed the participants on behalf of the LDOE. Dr. Michael Bunch, MI Senior Advisor, introduced the standards-validation process, provided an overview of the ALDs and their role in the process, and outlined the events of the day-long meeting. There was also a demonstration of the OPLS software. This whole-group session was broken into two activities – one focused on the development of threshold ALDs and one focused on the application of those ALDs to the review of ordered item booklets – with the review of range ALDs to create threshold ALDs in between. After a general discussion of ALDs, panelists were dismissed to their respective small-group meetings to create threshold ALDs from existing range ALDs.

### **ALD development.**

Using the range ALDs posted on the LDOE website, each panel marked up the range ALD for one test (ELA grade 3, 5, 7, or HS, or Math grade 3, 5, or 7). Led by the facilitator, panelists noted aspects of the Level 3 (At Goal) range ALD that might require modification in order to apply to a student just at the threshold of that level. They then marked up Level 4 (Above Goal) and then Level 2 (Near Goal). The marked-up threshold ALDs are included in Appendix B of this report. Following completion of this activity, all panelists returned to the main meeting for instruction in the standards validation procedure and orientation to OPLS. Panelists then returned to the main meeting for an introduction to the bookmark procedure and OPLS software.

### **Introduction to the bookmark procedure and OPLS software.**

Dr. Bunch provided a PowerPoint presentation on the fundamentals of the method, with particular emphasis on the tasks the panelists would be performing. He presented these questions and explained how they would be the primary focus of their task:

- What knowledge, skills, and abilities are required to get this item correct (or score at this level on the 9-point CR item)?
- Why is this item more difficult than the preceding item(s)?
- Does the item on this page accurately reflect the threshold of Level \_\_\_?
  - **Yes** – Place a bookmark here [Check backward and forward to make sure]
  - **No – Too difficult** [Go to the previous page]
  - **No – Too easy** [Go to the next page]

Dr. Bunch then demonstrated the features of OPLS – login, item map, navigation buttons, item pages, metadata, and resources. He showed how to move from item map to item page, how to move from page to page, and how to set cut scores. Following a brief question-and-answer

session on the bookmark procedure and OPLS, panelists exited to their respective small-group meetings, where they spent the rest of the day.

### **Practice round.**

After an introduction to the standards validation procedure and orientation to OPLS, panelists returned to their small groups for the rest of the day. After logging in to OPLS, panelists opened a Practice Round test, a very short (6-8 items) OIB and turned to the page identified as the Level 3 (At Goal) threshold. They then discussed whether the item on that page adequately represented the threshold or if it was too easy or too difficult. After a group discussion, each panelist independently verified or moved the bookmark for Level 3 (At Goal) in the practice booklet. Afterward, they discussed the process, asked questions, and completed the readiness form indicating readiness to begin their review of the actual version of that test.

### **Review of Test 1.**

Facilitators opened the portal to Test 1 – the lower grade test for that panel – and directed panelists to open that OIB in their OPLS software. This OIB contained the same features as the practice booklet, so there was no need to go back over those features. The facilitator directed panelists' attention to the item map and asked them to find the item page associated with the Level 3 (At Goal) threshold. Panelists turned to that page in the OIB, reviewed it in relation to the previous discussion of the Level 3 (At Goal) threshold, and discussed whether that item appropriately represented the threshold or whether it was too easy or too difficult. After this discussion, panelists were asked to verify or modify that cut independently by placing a bookmark on that page or a different page in the OIB. There were no practical limits on the number of pages forward or backward panelists could move the bookmark for the threshold. The facilitator also pointed out that the scale scores<sup>9</sup> associated with each page provided a clue as to how much change actually occurs from one page to the next. For example, if two pages have the same scale score, placing a bookmark on either page would result in the same cut score. The facilitator also monitored bookmark placement on their own facilitator view of the OPLS software.

Once all panelists had entered their Level 3 (At Goal) bookmark, the facilitator conducted a brief discussion to make sure everyone clearly understood the process. She then directed everyone's attention to the item map and asked them to find the OIB page associated with Level 4 (Above Goal) and continue on their own. Panelists then repeated the process they

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<sup>9</sup> It should be noted that the scale scores used during the standard validation/standard setting and vertical articulation are temporary values, which are different from the final scale scores. They are used only for display purposes in standard validation/standard setting.

followed for verifying or modifying the Level 3 (At Goal) cut to determine the Level 4 (Above Goal) cut and then the Level 2 (Near Goal) cut score. Each panel had the rest of the morning to examine the cut scores for the lower-grade test.

### **Review of Test 2.**

After a lunch break, panelists returned to their small-group meetings to review the higher-grade range ALDs and create threshold ALDs. They then used these threshold ALDs to place three bookmarks in the second test in the same manner as the first, except that there was not a second Practice Round test. Note that for Panel #4 (high school ELA), there was no Test 2. That panel continued working on their one test into the afternoon. Panels completed their task at different rates, but all panels completed all tasks by 4:30 p.m. (CDT), the posted finish time.

As panelists worked through their assignments, MI and edCount facilitators monitored their progress using the facilitator version of OPLS software. In their version of the software, facilitators could see in real time who had started, who had finished, and how much progress each panelist was making. OPLS recorded each panelist's three cut scores and calculated the median cut score for each achievement level for each test based on the panelists' input. The results and their impact for the lower-grade test were shared with panelists as they began their review of the upper grade test. Results and impact for the upper-grade test were shared with panelists at the end of the day, prior to their completion of the evaluation form.

## **Results**

### **Cut score changes.**

Results of standards validation are summarized in Tables 3.4 and 3.5. "Old" represents cut score and % at or above that cut score before standards validation, while "New" represents the same after standards validation. Shifts in impact of 5.0 to 9.9 percent are highlighted in yellow and shifts of 10 percent or more are highlighted in blue. It is worth noting that in some cases cut score shifts of one or two scale score points can result in fairly large shifts in impact, as illustrated in the cut scores and impacts for grade 3 for English language arts. It should also be noted that the scaled cut scores in these tables represent intermediate values; final, approved cut scores were rescaled so that all "At Goal" cut scores would be 1240, with all other scale scores adjusted accordingly.

**Table 3.4**  
**Results of Standards Validation for LEAP Connect English Language Arts Tests:**  
**Grades 3-8 and High School**

Grade	Scaled Cut Score						% At or Above Cut Score					
	Near Goal		At Goal		Above Goal		Near Goal		At Goal		Above Goal	
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
<b>3</b>	1234	<b>1235</b>	1240	<b>1242</b>	1253	<b>1254</b>	74.1	<b>68.3</b>	53.9	<b>44.8</b>	13.9	<b>12.9</b>
<b>4</b>	1234	<b>1233</b>	1240	<b>1239</b>	1258	<b>1250</b>	58.9	<b>68.3</b>	51.0	<b>51.0</b>	12.9	<b>22.2</b>
<b>5</b>	1232	<b>1233</b>	1240	<b>1240</b>	1256	<b>1255</b>	81.9	<b>81.9</b>	59.9	<b>59.9</b>	18.2	<b>18.2</b>
<b>6</b>	1231	<b>1231</b>	1240	<b>1240</b>	1253	<b>1255</b>	72.5	<b>72.5</b>	51.0	<b>51.0</b>	23.5	<b>23.5</b>
<b>7</b>	1236	<b>1236</b>	1240	<b>1242</b>	1255	<b>1250</b>	73.3	<b>73.3</b>	59.8	<b>59.8</b>	27.4	<b>41.0</b>
<b>8</b>	1230	<b>1230</b>	1240	<b>1241</b>	1250	<b>1246</b>	85.5	<b>85.5</b>	56.9	<b>56.9</b>	26.3	<b>42.7</b>
<b>HS</b>	1236	<b>1237</b>	1240	<b>1240</b>	1255	<b>1255</b>	80.7	<b>70.9</b>	62.2	<b>62.2</b>	25.4	<b>25.4</b>



**Table 3.5**  
**Results of Standards Validation for LEAP Connect Mathematics Tests: Grades 3-8**

Grade	Scaled Cut Scores						% At or Above Cut Score					
	Near Goal		At Goal		Above Goal		Near Goal		At Goal		Above Goal	
	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
<b>3</b>	1236	<b>1237</b>	1240	<b>1240</b>	1254	<b>1255</b>	64.5	<b>64.5</b>	53.5	<b>53.5</b>	19.8	<b>19.8</b>
<b>4</b>	1233	<b>1234</b>	1240	<b>1241</b>	1251	<b>1251</b>	72.8	<b>72.8</b>	60.4	<b>60.4</b>	28.7	<b>28.7</b>
<b>5</b>	1231	<b>1234</b>	1240	<b>1240</b>	1255	<b>1255</b>	75.2	<b>75.2</b>	52.1	<b>52.1</b>	20.7	<b>20.7</b>
<b>6</b>	1234	<b>1234</b>	1240	<b>1241</b>	1249	<b>1250</b>	80.6	<b>80.6</b>	59.6	<b>54.5</b>	32.8	<b>32.8</b>
<b>7</b>	1232	<b>1234</b>	1240	<b>1241</b>	1254	<b>1254</b>	87.8	<b>87.8</b>	63.9	<b>63.9</b>	37.1	<b>37.1</b>
<b>8</b>	1234	<b>1234</b>	1240	<b>1240</b>	1249	<b>1249</b>	80.1	<b>80.1</b>	63.5	<b>63.5</b>	38.5	<b>38.5</b>

**Evaluations**

Panelists were pleased with the organization and management of the meetings and were quite confident in the recommendations they made regarding movement or retention of cut scores. Results of the evaluations completed at the end of the day are summarized in Table 3.6. Breakdowns by subject and panel are included in C, along with comments.

**Table 3.6  
Summary of Evaluations of Standards Validation**

Prompt	SD	D	?	A	SA	% SA+A
The purpose and goals of the standards-validation process were articulated clearly.	0	0	1	12	31	98%
The bookmark procedure and its use were presented and explained clearly.	0	0	1	12	31	98%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	15	29	100%

Prompt	SD	D	?	A	SA	% SA+A
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	8	36	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	6	38	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	1	11	32	98%
I had the opportunity to ask questions about the test content.	0	0	1	9	34	98%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	1	11	32	98%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	11	33	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	1	6	37	98%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	8	36	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	1	1	6	36	95%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	8	36	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	7	37	100%
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	2	9	33	95%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	1	4	9	30	89%
The standards-validation process was fair.	0	1	4	7	32	89%

Prompt	SD	D	?	A	SA	% SA+A
The standards-validation process was orderly.	0	0	1	11	32	98%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	18	26	100%
I have confidence in my group’s final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	5	10	29	89%
Total Responses	0	3	23	194	660	854
% of Total	0%	0%	3%	22%	75%	<b>97%</b>

**Key:** SD = Strongly Disagree; D = Disagree; ? = Undecided; A = Agree; SA = Strongly Agree

## Chapter 4: Standard Setting

### Overview

MI conducted a virtual standard-setting meeting June 22-24, 2021, for all three science tests and the high school mathematics test. MI and edCount staff trained and supervised panelists through two rounds of bookmark standard setting, using MI’s OPLS software.

### Methodology

#### Panelists.

LDOE staff identified and recruited Louisiana educators and administrators who have experience with the population of students for whom these tests are intended. MI staff followed up with each panelist to make sure they would be well prepared for the workshop. The approved plan called for 6-8 members per panel:

- 1 content expert with grade-band teaching experience
- 4-5 special education experts with K-12 teaching experience
- 1 English language learner expert with K-12 teaching experience
- 1 Administrator

MI and LDOE staff worked together to assemble the panels, train them in the use of the meeting software and OPLS standard-setting software, and make sure they were prepared and available for the duration of the workshop. Backup panelists were also identified, and approximately 60 were called in to replace panelists who for various reasons had to drop out. Since the backup panelists had the same qualifications as the original panelists, MI and LDOE managers concluded that the final composition of the two panels met the original specifications

outlined in the plan. Table 4.1 summarizes the composition of the two panels. Names and qualifications of panelists and facilitators are included in Appendix A.

**Table 4.1**

**Standard Setting Panels**

<b>Panel</b>	<b>Facilitator</b>	<b># of Panelists</b>
Science 4, 8	Jean Clayton	6
Science HS, Math HS	Tracy Fazio	6

**Instructional materials.**

MI prepared all training materials and provided advanced training on Microsoft® Teams to panelists. Specifically, Dr. Jami-Jon Pearson met online with panelists prior to standard setting to make sure all could access and use Microsoft® Teams and OPLS. MI staff prepared readiness and evaluation forms for panelists to complete within OPLS, a PowerPoint presentation, and facilitator scripts to be used for the training webinar as well as for the inter-round group webinars scheduled over the course of the meeting. We submitted drafts of these PowerPoint presentations, scripts, and forms to LDOE for review, revised them in accordance with recommendations from LDOE, and then submitted final forms for review and approval. The final, approved forms were uploaded into OPLS; the final, approved versions of the presentations and scripts were used for the webinars and are included in Appendix B.

**Achievement level descriptors (ALDs).**

In 2018, LDOE contracted with edCount to create policy and range achievement level descriptors (ALDs) for LEAP Connect ELA, mathematics, and science. When NCSC conducted standard setting in 2015, panelists used range performance level descriptors (PLDs) to create threshold PLDs during the first day of the workshop. According to the external evaluator for that activity, the procedure helped panelists clarify the definition of “student at the threshold,” and guided their efforts well through three rounds of OIB review.<sup>10</sup> We followed a similar procedure. Specifically, panelists reviewed the LDOE range ALDs for Levels 2, 3, and 4 and noted tasks or activities that would not necessarily apply to students at the threshold of those ranges and then added text that they considered more indicative of what threshold students know and can do. The marked-up threshold ALDs are included in Appendix B.

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<sup>10</sup> Personal communication with Barbara Plake, February 19, 2021.

**Ordered item booklets.**

MI and edCount staff constructed ordered item booklets consisting of items from the 2021 operational test booklets. As was the case in 2015, we used RP50 for the high school mathematics booklet. Per agreement with the LDOE and the advice of the TAC, we also used RP50 for the science booklets.

**OPLS Software.**

As noted previously, MI created the OPLS software package, based on a concept introduced by Dr. Bunch (2013). Features of the software specific to the bookmark procedure were described in the standards validation section of this report.

**Agenda and Activities**

The meeting included both whole-group and small-group activities. The whole-group activities included only those topics relevant to everyone, such as general ground rules, and orientation to the standards validation procedure. We took this approach to make sure all panelists heard and saw the same thing. All other grade-content specific training and work was done in small groups. Times for each activity were intentionally flexible to allow for the varying paces of the groups and the complexity of the tasks they were to perform; therefore, the times shown in Table 4.2 are approximate.

**Table 4.2**

**Standard Setting Agenda**

<i><b>Date</b></i>	<i><b>Session</b></i>	<i><b>Activities</b></i>
<i>June 22</i>	General Orientation 1 (8:00 a.m.)	Introductions Overview of activities Overview of the tests and range ALDs
	Small-Group Activities 1 (8:45 a.m.)	Review Test 1 and range ALDs Create Test 1 threshold ALDs
	General Orientation 2 (10:30 a.m.)	Introduction to the bookmark procedure Introduction to OPLS Practice Round
	Lunch (11:30 a.m.)	
	Small-Group Activities 2 (12:00 Noon)	Complete Readiness Form Complete Test 1 Bookmark Round 1
<i>June 23</i>	Small-Group Activities (8:00 a.m.)	Review results of Test 1 Round 1 Complete Readiness Form Complete Test 1 Bookmark Round 2
	Lunch (11:30 a.m.)	
	Small-Group Activities (12:00 Noon – 4:00 p.m.)	Review Test 2 and ALDs Create Test 2 threshold ALDs Complete Test 2 Bookmark Round 1
<i>June 24</i>	Small-Group Activities (8:00 a.m.)	Review results of Test 2 Round 1 Complete Readiness Form Complete Test 2 Bookmark Round 2 Wrap-Up and Evaluate Process
	Adjourn (11:30 a.m.)	

**General orientation.**

All panelists logged on to a webinar in Microsoft® Teams by 8:20 a.m. (Central Daylight Time [CDT]) on Tuesday, June 22, 2021. Dr. Jami-Jon Pearson, LA LEAP Connect Project Director at MI, opened the webinar and introduced the speakers. Mr. Hopkins welcomed the participants on behalf of the LDOE. Dr. Bunch introduced the objectives of the workshop as well as the tasks panelists would be expected to perform to set cut scores. He provided a short overview of the

tests and range ALDs and explained the bookmark procedure. At the end of the session, Dr. Bunch demonstrated the OPLS software.

The activities mentioned in the previous paragraph involved switching “rooms” twice:

- Opening webinar – welcome, overview of goals and tasks; dismiss to breakout rooms
- Break into two groups (Science 4/8 and Math/Science HS) to review tests and ALDs, complete an item map, and finalize threshold ALDs; return to main room
- Orientation to the bookmark procedure and OPLS

During the first breakout session the morning of June 22, facilitators introduced the panelists to one test (science grade 4 or math HS, depending on the panel). They focused on the knowledge, skills, and abilities required to answer each item. Facilitators then turned their attention to the range ALDs, oriented panelists to the notion of threshold (“just barely at Level X”), and guided them through constructing threshold ALDs from the range ALDs and support documentation from LDOE and edCount. Panelists then used these marked-up threshold ALDs for their review of the tests.

Dr. Bunch provided an orientation to the bookmark procedure (cf. Cizek & Bunch, 2007, Ch. 10) using a PowerPoint presentation reviewed and approved by LDOE staff and members of the TAC. The presentation focused specifically on the tasks that panelists needed to complete and how to complete them. Dr. Bunch also explained the purpose of organizing the work in a particular manner and reinforced the concept of threshold introduced by the facilitators during the morning breakouts.

In his presentation, Dr. Bunch focused on key questions panelists would ask themselves as they reviewed OIBs and applied the threshold ALDs:

- What knowledge, skills, and abilities are required to get this item correct?
- Why is this item more difficult than the preceding item(s)?
- Would about half of the students at the threshold of Level \_\_\_ be able to answer this item correctly?

Dr. Bunch then demonstrated OPLS, pointing out its navigation features and logic. This presentation focused on the item map and its many uses, features of the item page, how to access support documents (ALDs, the test administration manual (DTA), and reference materials), and how to set a bookmark. He also showed the type of inter-round information facilitators would share with panelists and the different information that would be available in the item map during Round 2.

Once panelists completed training on the bookmark procedure and OPLS, they returned to their breakout rooms for the remainder of standard setting.



## Day 1, Afternoon

edCount staff facilitated two separate webinars, one for each of the two panels. Facilitators helped panelists log on to and navigate within OPLS. Facilitators then opened the Practice Round test (for science grade 4 or HS math, depending on the panel), a brief (6-8 items) ordered booklet with items grouped around a scale score that might be considered appropriate for a Level 3 cut. Panelists opened their Practice Round OIBs and examined the items in relation to the Level 3 threshold ALD. Once each panelist had a chance to review all items, the facilitators asked them to mark their OIBs to indicate where the Level 3 cut should be. On their facilitator view of OPLS, facilitators were able to see how the bookmarks were distributed and knew when all panelists had entered one bookmark.

Once panelists completed that task, the facilitator displayed the distribution of bookmarks. The purpose of this exercise was two-fold: to give panelists practical experience in setting a bookmark and to allow them to see that even in a small group of 6-8 panelists, there can be differences of opinion. The facilitators asked some panelists to explain their bookmark placements and continued the discussion until it was apparent that all panelists understood not only how to place a bookmark but the criteria by which the bookmarks should be placed; i.e., the relationship between the item content and the threshold ALD.

At the end of the practice round, panelists completed the Test 1 Round 1 portion of the readiness form in OPLS. After submitting the readiness form, facilitators opened the round, and panelists began reviewing the items, threshold ALDs, and the item map for the test. Starting on page 1 of the OIB, panelists looked for a page on which they would place the Level 3 bookmark, keeping in mind the three standard-setting questions introduced during general orientation. Once they had placed the Level 3 bookmark, they continued through the OIB, looking for the page on which to place the Level 4 bookmark. After placing the Level 4 bookmark, they returned to the beginning of the OIB to look for the page on which to place the Level 2 bookmark. Once they had placed three bookmarks, panelists had an opportunity to review their work prior to pressing *Submit*. Once they pressed *Submit*, the round was over for them.

Throughout this process, facilitators reminded panelists to ground all decisions about items in the threshold ALDs. In particular, if panelists found an item that appeared to be a good candidate for a bookmark, they were advised to look at the next two or three pages to make sure the items on those pages do not seem easier than the page they were about to bookmark. If the items seemed to get easier, panelists were encouraged to keep going until they got to a series of pages that appeared to be too difficult for the student at the threshold and then place their bookmark on the first page in this series, not the item two or three pages further back in the OIB.

## Inter-round activities.

Once panelists pressed *Submit*, they were dismissed. MI and edCount staff remained online until the last panelist finished and logged out and were available for help throughout the process. Once the last panelist submitted Test 1 Round 1 bookmarks and the facilitators had closed the session, OPLS calculated cut scores and produced output to be presented at the beginning of Round 2. A sample graph and table are shown in Figures 4.1 and 4.2.

		Level 2	Level 3	Level 4	Notes	
Item 985116	1200					
Item 984985	1200					
Item 1045227	1200					
Item 985128	1204					
Item 1045200	1206					
Item 985004	1209					
Item 985119	1210					
Item 985049	1214					
Item 985072	1216					
Item 1045195	1220					
Item 1045213	1222					
Item 1045228	1224					
Item 1045221	1227		2			
Item 985059	1229		1			
Item 1045196	1230		2			
Item 985100	1234		1			
Item 1045208	1235					
Item 985046	1236			1		
Item 1045218	1237			3		
Item 1045216	1238		1		1	
Item 1045235	1239					
Item 985484	1240					
Item 985083	1242			1		1

Figure 4.1. Round 1 Graphical Feedback

Performance Level	Count	Minimum	Maximum	Median Cut	Percent At Or Above
Level 2	7	1227.0	1238.0	1230.0	80%
Level 3	7	1236.0	1252.0	1237.0	53%
Level 4	7	1242.0	1290.0	1248.0	25%

Figure 4.2. Round 1 Tabular Feedback

## Day 2, - Morning

Panelists logged back on at 8:00 a.m. and went directly to their assigned breakout rooms. Facilitators welcomed them back and began a discussion about panelists' experiences in

completing Round 1, problems they had encountered, how they used the ALDs, and whether there were any navigation or internet connection issues.

Facilitators then presented the summary results of Round 1 and led panelists in a discussion. Panelists were able to see where they placed their bookmarks, in relation to the placements made by other panelists. Facilitators reviewed the range of bookmarks for each cut score, starting with Level 3, and asked panelists to explain their placements, always with respect to the threshold ALDs. This process gave other panelists an opportunity to hear different points of view and begin to form a cohesive view of the three thresholds.

Facilitators then presented the aggregate cut score and its range. Finally, panelists examined impact data, indicating what percentage of students would be in each of the four achievement levels based on the Round 1 cut scores. We used 2020 data for impact, rather than 2021 data. Facilitators led a discussion about the impact data and made sure each panelist had an opportunity to express an opinion regarding the reasonableness of the Round 1 results. Panelists also presented the recommendations of the pre-standard setting policy group, indicating the minimum and maximum percentages of students expected to score at or above Level 3.

At the end of these discussions, facilitators directed panelists to open their OPLS software and complete the Test 1 Round 2 portion of the readiness form. Once they had completed this form, panelists were allowed to start Round 2 for Test 1. They followed the same procedures as Round 1. However, during Round 2, the pages corresponding to the policy committee's recommendations were marked. Facilitators monitored panelists' progress and provided assistance as needed. Panelists had the rest of the morning to complete Round 2 and submit their bookmarks. They were then dismissed for lunch with a reminder to log back in at the specified time for the afternoon session.

## **Day 2 – Afternoon**

After the lunch break on June 23, panelists logged back into their separate Teams webinars and OPLS software. Having completed two rounds of bookmarking for Test 1, they were ready to begin Round 1 for Test 2. However, they still needed to review the range ALDs for Test 2 and construct threshold ALDs. Facilitators marked up their own ALDs as the panelists dictated and shared them on their screens during the review of the Test 2 OIBs.

Prior to beginning Round 1 of Test 2, panelists completed the Test 2 Round 1 portion of the readiness form and began the round. They proceeded exactly as they had done in Rounds 1 and 2 of Test 1, locating and entering a bookmark for Level 3, then Level 4, and then Level 2. Throughout this activity, they had access to the ALDs via screenshare.

Facilitators monitored panelist progress throughout the round and helped as needed. Once panelists had entered three bookmarks and pressed *Submit*, they were dismissed for the day. Facilitators remained online and available for help until the last panelist had submitted their bookmarks.

### **Inter-round activities.**

As was the case for Test 1, OPLS produced tables and graphs based on Round 1 bookmark placements to present at the beginning of Round 2, like those shown in Figures 4.1 and 4.2.

### **Day 3 - Morning**

Panelists logged back on at 8:00 a.m. and went directly to their assigned breakout rooms. Facilitators presented the summary results of Test 2 Round 1 and led panelists in a discussion, as they did after Test 1 Round 1. Panelists were able to see where they placed their bookmarks, in relation to the placements made by other panelists. Facilitators reviewed the range of bookmarks for each cut score, starting with Level 3, and asked panelists to explain their placements, always with respect to the threshold ALDs.

Facilitators then presented each aggregate cut score and its range. Finally, panelists examined impact data, indicating how many students would be in each of the four achievement levels based on the Round 1 cut scores. Facilitators led a discussion about the impact data and made sure each panelist had an opportunity to express an opinion regarding the reasonableness of the Round 1 results. Included in this discussion was a presentation of the expectations expressed by the pre-standard setting policy group, indicating the minimum and maximum percentages of students expected to score at or above Level 3 (At Goal).

At the end of these discussions, facilitators directed panelists to open their OPLS software and complete the Test 2 Round 2 portion of the readiness form. Once they had completed this form, panelists were allowed to start Round 2 for Test 1. Panelists followed the same procedures they followed in completing Round 1. As with Test 1, the recommendations of the policy committee were included on the item maps. Facilitators monitored panelists' progress and helped as needed. Panelists had the rest of the morning to complete Round 2 and submit their bookmarks. They were then dismissed after completing an evaluation form. Panelists who had been selected to participate in vertical articulation were reminded to log back in at the appointed time after the lunch break.

## Results

Results of Rounds 1 and 2 are presented in Tables 4.3 and 4.4. Impact for Level 3 cut scores is highlighted in green if those scores fell within the ranges recommended by the policy committee.

**Table 4.3**

### Results of Round 1 of Standard Setting for LEAP Connect Science and Mathematics Tests

Test	Scaled Cut Scores			% At or Above Cut Score		
	Near Goal	At Goal	Above Goal	Near Goal	At Goal	Above Goal
Science 4	990	1029	1074	79.1	57.2	31.8
Science 8	996	1026	1047	90.6	67.6	55.9
Science HS	994	1028	1069	76.7	58.5	30.3
Math HS	973.5	1023	1064	82.1	52.2	31.2

**Table 4.4**

### Results of Round 2 of Standard Setting for LEAP Connect Science and Mathematics Tests

Test	Scaled Cut Scores			% At or Above Cut Score		
	Near Goal	At Goal	Above Goal	Near Goal	At Goal	Above Goal
Science 4	990	1044	1074	79.1	47.4	31.8
Science 8	996	1028	1048	90.6	67.6	55.9
Science HS	994	1031.5	1072	76.7	51.7	30.3
Math HS	980.5	1025	1067	76.5	52.2	31.2

From Round 1 to Round 2, the largest shifts were at Level 3 (At Goal) in science grade 4 and high school. In grade 4, the percent of students scoring at or above Level 3 (At Goal) fell from 57.2 to 47.4, both figures within the range established by the policy committee. For the high school science test, the percent of students scoring at or above Level 3 (At Goal) fell from 58.5 to 51.7, again with both figures falling within the range established by the policy committee. The only other change of note was an increase of the cut score for Level 2 (Near Goal) of high school math from 973.5 to 980.5, resulting in 5.6% fewer students scoring at or above Level 2 (Near Goal).

From Round 1 to Round 2, ranges of cut scores were considerably reduced, as a result of inter-round discussions. Out of 12 cut scores set, only two cut scores saw larger interquartile ranges (IQRs) in Round 2: fourth grade science Above Goal (up by 7 points) and high school math, Near Goal (up by 9 points). The rest decreased in Round 2, some by 20-30 scale score points. These IQRs are included in the round-by-round presentations in Appendix B.

Results of the evaluation of standard setting are presented in Table 4.5. As can be readily seen, 100% of panelists were favorably impressed by the process and were quite confident that the cut scores they had set were appropriate.

**Table 4.5**  
**Summary of Evaluations of Standard Setting**

Prompt	SD	D	?	A	SA	% A+SA
The purpose and goals of the standard-setting process were articulated clearly.	0	0	0	1	11	100
The bookmark procedure and its use were presented and explained clearly.	0	0	0	1	11	100
The specific tasks I was expected to fulfill as a standard-setting panelist were delineated clearly.	0	0	0	2	10	100
I received training on how to navigate the standard-setting software (OPLS).	0	0	0	1	11	100
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	2	10	100
I received training as part of the standard-setting meeting that familiarized me with the content of the test(s).	0	0	0	1	11	100
I had the opportunity to ask questions about the test content.	0	0	0	1	11	100
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	2	10	100
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	1	11	100
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	1	11	100
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	1	11	100

Prompt	SD	D	?	A	SA	% A+SA
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	2	10	100
My facilitator was available and able to adequately answer my questions throughout the standard-setting meeting.	0	0	0	0	12	100
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	0	12	100
After Round 1 I had the opportunity to ask questions and participate in a discussion about the results.	0	0	0	1	11	100
The discussion after Round 1 was useful in preparing me for Round 2.	0	0	0	1	11	100
After Round 2 I had the opportunity to ask questions and participate in a discussion about the results.	0	0	0	2	10	100
The discussion after Round 2 was useful in solidifying my confidence in the process and our collective recommendations.	0	0	0	2	10	100
The standard-setting process was fair.	0	0	0	1	11	100
The standard-setting process was orderly.	0	0	0	1	11	100
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	2	10	100
I have confidence in my group's final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	0	4	8	100

**Key:** SD = Strongly Disagree; D = Disagree; ? = Undecided; A = Agree; SA = Strongly Agree

## Chapter 5: Vertical Articulation and Follow-Up

There were three separate vertical articulation committees (VACs), one each for English language arts, mathematics, and science. We used cut scores and impact from standards validation and standard setting. In accordance with recommendations by the LDOE and the TAC, we employed 2020 impact data projected from Rasch scaling of the items in the OIBs.

### Preparations

After panelists completed marking up range ALDs to create threshold ALDs, MI staff uploaded the marked-up threshold ALDs into the OPLS software. Thus, during vertical articulation, all threshold ALDs were available to all panelists and facilitators so that it would no longer be necessary for facilitators to share their threshold ALDs with panelists, thereby reducing the number of screens that would need to be open during the event.

### Facilitators and Panelists

On the afternoon of June 24, members of the vertical articulation committees logged in. As noted in the previous sections, the VACs consisted of panelists drawn from the nine standards validation and standard setting panels. The configuration of the three VACs is shown in Table 5.1. Panelist names and affiliations are listed in Appendix A.

**Table 5.1**  
**VAC Composition**

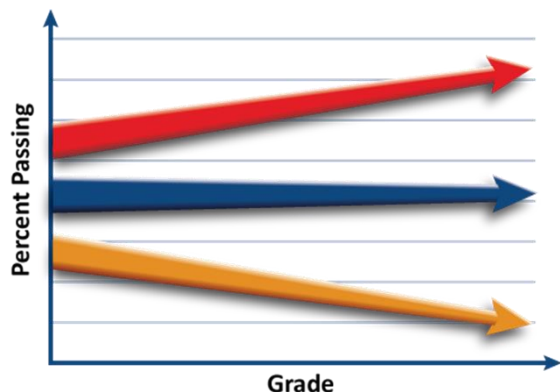
<b>Panel</b>	<b>MI/ed Count Facilitator</b>	<b># of Panelists</b>
ELA	Jean Clayton	7
Math	Tracy Fazio	9
Science	Michael Bunch	7

### Orientation

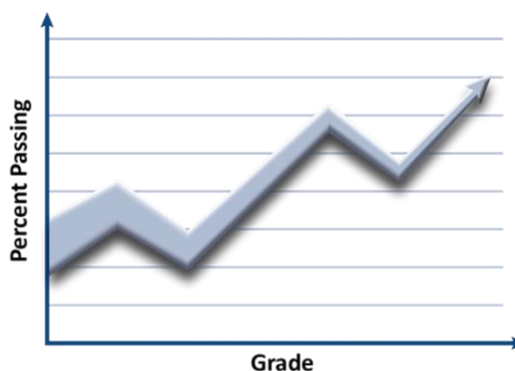
Dr. Bunch conducted a webinar to introduce the concept of vertical articulation and explain the objectives and tasks associated with that activity. He gave a PowerPoint presentation reviewed and approved by LDOE staff and members of the TAC. The primary focus of the presentation was to establish reasonable expectations as to the progression of performance across grades within a subject. In general, it is reasonable to expect that (in a given year, although not



necessarily longitudinally) the percentage of students scoring At or Above Goal would be about the same, generally decreasing, or generally increasing, as illustrated in Figures 5.1a and 5.1b.



**Figure 5.1a. Generally Reasonable Expectations**



**Figure 5.1b. Generally Unreasonable Expectations**

Dr. Bunch then focused on three guiding principles:

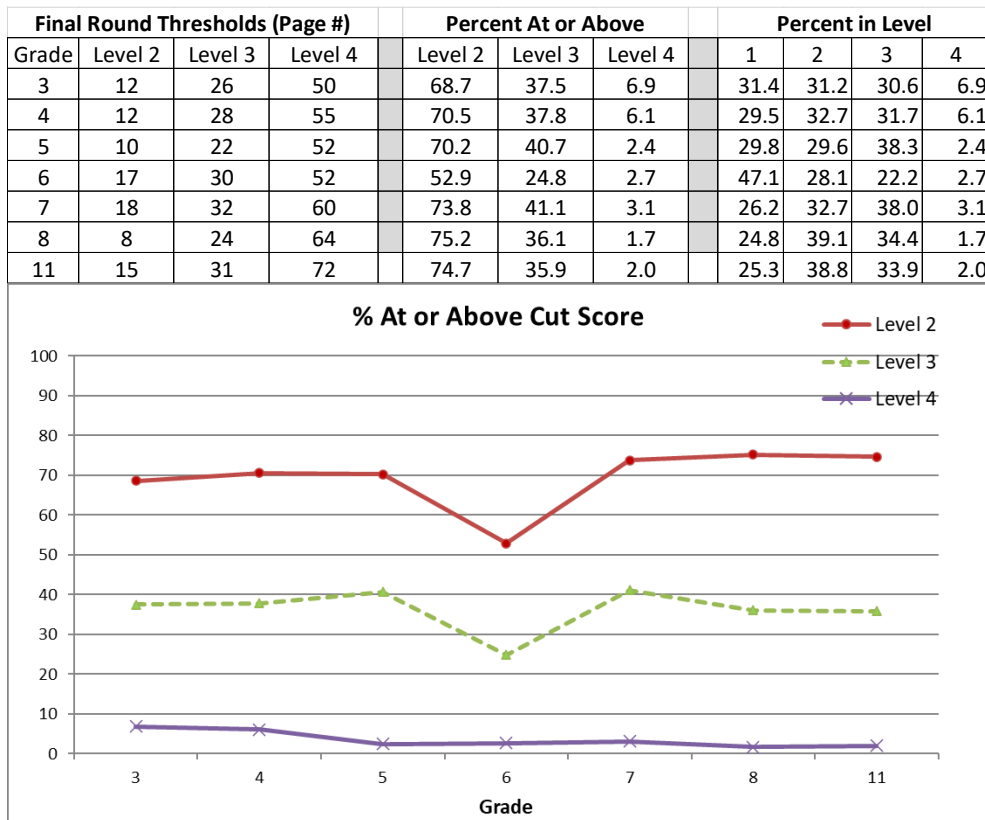
- *Guiding Principle #1. Recommendations should align with the ALDs.* The purpose of vertical articulation is to make sure that the slope of the line from the lowest to the highest grade makes sense considering all factors, not necessarily to make all the lines as straight as shown in Figure 6a. If there is some wobble in the line and that wobble has a reasonable explanation, the job of the VAC is done. Cut scores, even during vertical articulation, must be grounded in the ALDs.
- *Guiding Principle #2: Changes should be within range of original cuts.* We show the interquartile range of the original cut scores for each level and emphasize that any change outside that range jeopardizes the face validity of the final cut scores. Certainly, a new cut score set completely outside the full range of cut scores set by the original panels would be highly questionable.
- *Guiding Principle #3: 2-3 small changes may be better than 1 big one.* For example, if percent at or above decreases significantly from grade 5 to grade 6, and then increases significantly from grade 6 to grade 7, it may not be necessary to focus only on grade 6 and make a large change in the cut score for that grade. Slightly raising the cut scores for grades 5 and 7 and slightly lowering the cut score for grade 6 may accomplish the same overall purpose, especially if those changes conform to Guiding Principles #1 and 2.

After explaining the principles of vertical articulation, Dr. Bunch explained the ground rules. Given the ultimate purpose of the cut scores, we made every effort to reach consensus on any cut score we discussed. We also asked for final approval of all cut scores not specifically discussed during vertical articulation so that there would be a record that each cut score had been considered and left unchanged rather than simply not addressed.

## VAC Actions

At the close of VAC orientation, Dr. Bunch dismissed the three committees to their breakout rooms, each of which had a facilitator who guided the discussion. Each committee had a monitor from MI who helped with OPLS and other technical issues.

After panelists completed a readiness form, facilitators reviewed the Round 2 results of standard setting or the final actions of the relevant standards validation panels, or in the case of mathematics, a combination of standard setting and standards validation recommendations. Each facilitator had a graphic like the one shown in Figure 5.2.



**Figure 5.2. Sample VAC graphic**

In practice, graphics like the one shown in Figure 5.2 are accompanied by three tables: the final round cut scores, the percentages of students scoring at or above each cut score by grade, and the percentages of students classified in each level by grade, based on the final round cut scores. The tables and graphic are interactive in that changing any cut score in the first table automatically changes values in the other tables and in the figure. This interactivity allows VAC members to see immediately the impact of any change they might suggest to any cut score.

After reviewing and discussing the graphic, the facilitators asked if anyone saw anything that seemed amiss or out of place. For example, in Figure 5.2, the trend for Level 3 seems to be generally declining from grade 3 to grade 6 but then makes a sharp upward turn at grade 7,

only to decline again from grade 7 to grade 8. Should a VAC member make such an observation (or if the facilitator, after waiting for someone to speak and hearing only silence, makes such an observation), the VAC might open the grade 6 OIB and check the placement of the Level 3 bookmark. Considering Guiding Principle #3, it might also be prudent to open the OIBs for grades 6 and 8. At any rate, VAC members would have an opportunity to review relevant OIB pages, bookmarks, and the associated ALDs, and make a reasoned suggestion that one or more cut scores be modified from the final round of standard setting or standards validation.

Where there are two or more cut scores to be considered, the facilitators focused the VAC's attention on the Level 3 cut score for the highest grade mentioned. VAC members then discussed that cut score and the facilitator authorized opening of that particular OIB for panelists to inspect. Panelists examined the relevant OIBs and ALD, and the facilitator asked for recommendations and led a discussion. At the end of the discussion, each panelist entered a bookmark to confirm or move the previously set bookmark. OPLS calculated the median cut score, which the facilitator reported to the committee and posted on the VAC spreadsheet.

After discussing any and all Level 3 cut scores brought up by VAC members or introduced by the facilitator, the VAC turned its attention to Level 4 (Above Goal) cut scores (if any) and finally to Level 2 (Near Goal) cut scores (if any). After reviewing and making recommendations for all cut scores brought up for discussion, the facilitators asked for a recommendation to accept the full set of cut scores – those changed as well as those not brought up for discussion. They then polled the committee members one by one to verify that they were satisfied with the results.

## **Results**

Tables 5.2-5.4 show the results of vertical articulation. The ELA committee made three changes; the science committee made two, and the math committee made none. Changes in cut scores and impact are highlighted in yellow. In each instance, the final cut scores for Level 3 for the three science tests and the high school math test were within the ranges specified by the policy committee. Moreover, no change by the vertical articulation committees went beyond the interquartile ranges of the Round 2 cut scores for those tests. Final distributions of students across the four achievement levels are illustrated in Figures 5.3-5.5.

**Table 5.2**  
**Results of Vertical Articulation for LEAP Connect English Language Arts Tests**

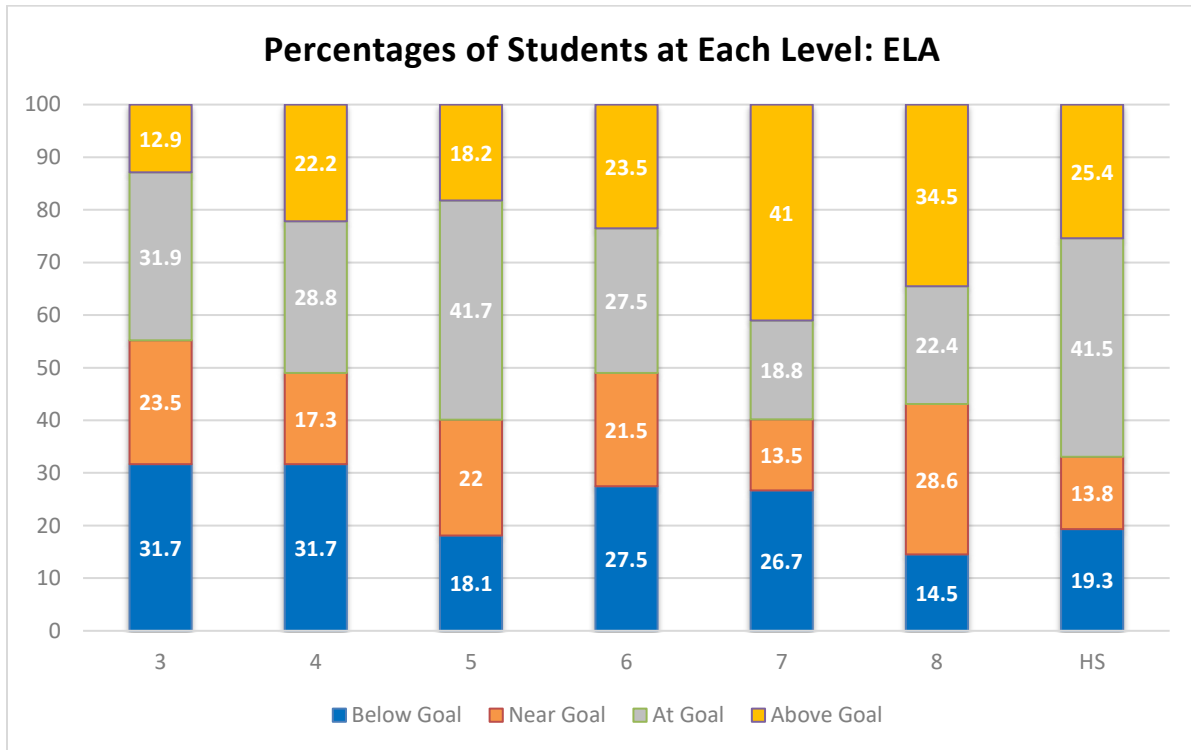
Grade	Thresholds (Theta Cuts)			% At or Above		
	Near Goal	At Goal	Above Goal	Near Goal	At Goal	Above Goal
3	0.0073	0.557	1.7601	68.3	44.8	12.9
4	0.0512	0.6037	1.4868	68.3	51.0	22.2
5	0.076	0.7027	1.7026	81.9	59.9	18.2
6	0.558	1.3759	2.423	72.5	51.0	23.5
7	0.509	1.0964	1.7205	73.3	59.8	41.0
8	0.1285	1.1801	1.7307	85.5	56.9	34.5
HS	-0.0556	0.5975	2.1424	80.7	66.9	25.4

**Table 5.3**  
**Results of Vertical Articulation for LEAP Connect Mathematics Tests**

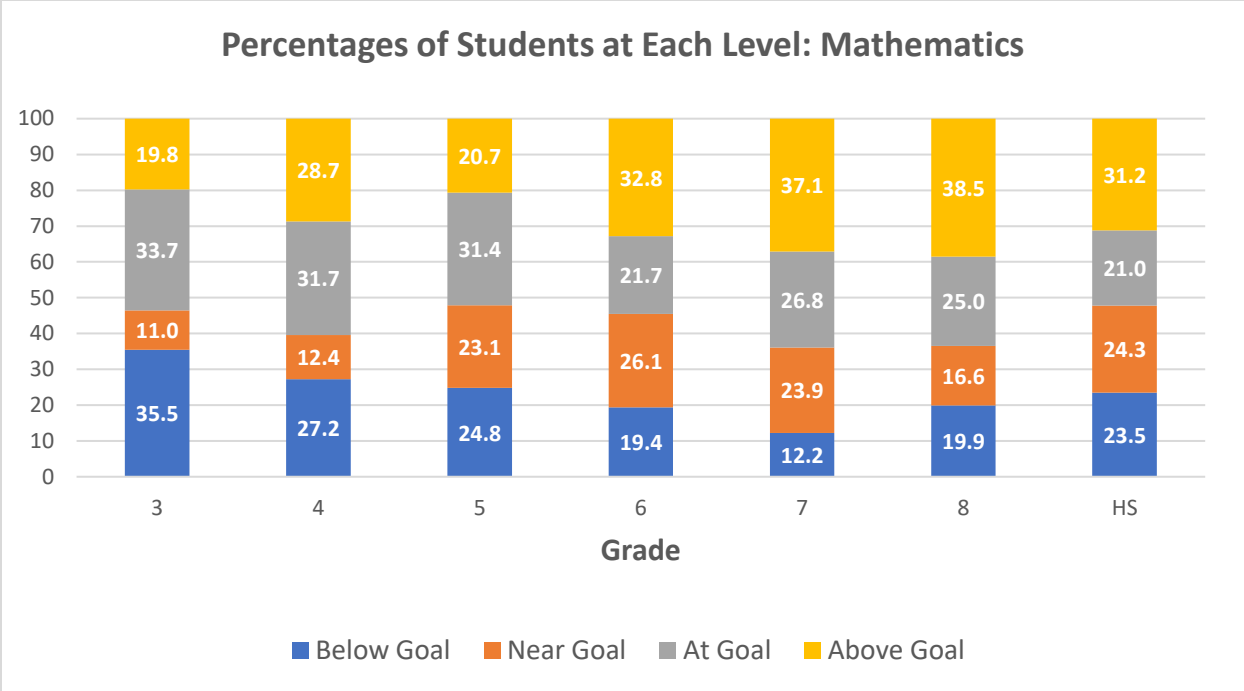
Grade	Thresholds (Theta Cuts)			% At or Above		
	Near Goal	At Goal	Above Goal	Near Goal	At Goal	Above Goal
3	-0.4112	-0.1712	0.9024	64.5	53.5	19.8
4	-0.6829	-0.2344	0.4425	72.8	60.4	28.7
5	-0.5687	-0.1853	0.6136	75.2	52.1	20.7
6	-0.3635	0.2508	0.8779	80.6	54.5	32.8
7	-0.5706	-0.1058	0.8589	87.8	63.9	37.1
8	-0.4326	-0.0995	0.5132	80.1	63.5	38.5
HS	-0.5387	-0.03	0.5107	76.5	52.2	31.2

**Table 5.4**  
**Results of Vertical Articulation for LEAP Connect Science Tests**

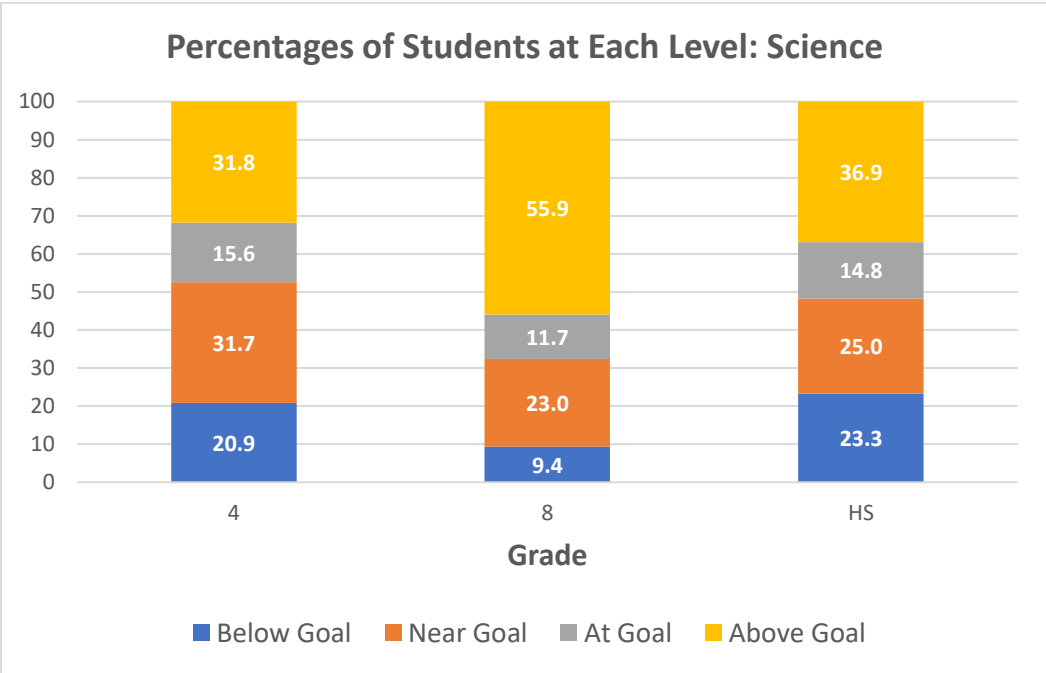
Grade	Thresholds (Theta Cuts)			% At or Above		
	Near Goal	At Goal	Above Goal	Near Goal	At Goal	Above Goal
4	-0.5683	0.1019	0.4646	79.1	47.4	31.8
8	-0.6615	0.0238	0.3876	90.6	67.6	55.9
HS	-0.4074	0.2132	0.5824	76.7	51.7	36.9



**Figure 5.3. Impact for LEAP Connect English Language Arts Tests**



**Figure 5.4. Impact for LEAP Connect Mathematics Tests**



**Figure 5.5. Impact for LEAP Connect Science Tests**

## Evaluations

The 23 VAC members were unanimously supportive of the process and confident that the recommendations they were making were sound. Results of the evaluations are summarized in Table 5.5.

**Table 5.5**  
**Summary of Vertical Articulation Evaluations**

Statement	SD	D	?	A	SA	% A+SA
The introductory presentation helped me understand vertical articulation.	0	0	0	5	18	100
The presentation of data helped me understand and contribute to the vertical articulation discussion.	0	0	0	1	22	100
The comments of the other panelists helped me understand and contribute to the vertical articulation discussion.	0	0	0	3	20	100
Reviewing items and ALDs helped me make decisions as part of vertical articulation.	0	0	0	2	21	100
I thought decisions about adjusting cut scores were reached fairly.	0	0	0	1	22	100
I am satisfied with the final results of the vertical articulation. [Please explain your answer in the comments section below.]	0	0	0	1	22	100

**Key:** SD = Strongly Disagree; D = Disagree; ? = Undecided; A = Agree; SA = Strongly Agree

## Follow-Up

Panelists made their cut score recommendations by placing bookmarks in the ordered item booklets. For the grade 3 ELA test, the median bookmark fell between pages 16 and 17. OPLS rounded the cut score up to the scale score associated with page 17. LDOE staff reviewed the results and recommended that the cut score be rounded down to page 16. In this instance, rounding down to page 16 rather than up to page 17 seemed more reasonable, particularly since three of the six panelists had recommended setting the cut on page 15. This adjustment resulted in 50.3%, rather than 44.8% of grade 3 students scoring At or Above Goal on the English language arts test.

After 2021 LEAP Connect standards setting/validation and vertical articulation, LDOE staff decided to establish a new scale system. Based on the results of several rounds of exploratory studies and discussions with the TAC, LDOE staff decided to use a two-point method (level 2 cut of 1232 and level 3 cut of 1240) and the corresponding theta cuts from vertical articulation to setup the score scales (1200-1290) for all grades and subjects. The final scale score cuts for subjects and grades are presented in Table 5.6.

**Table 5.6**  
**Recommended Scale Score Ranges for LEAP Connect ELA, Math, and Science**

Subject	Grade	Below Goal	Near Goal	At Goal	Above Goal
ELA	3	1200 - 1231	1232 - 1239	1240 - 1257	1258 - 1290
	4	1200 - 1231	1232 - 1239	1240 - 1252	1253 - 1290
	5	1200 - 1231	1232 - 1239	1240 - 1252	1253 - 1290
	6	1200 - 1231	1232 - 1239	1240 - 1249	1250 - 1290
	7	1200 - 1231	1232 - 1239	1240 - 1247	1248 - 1290
	8	1200 - 1231	1232 - 1239	1240 - 1243	1244 - 1290
	HS	1200 - 1231	1232 - 1239	1240 - 1258	1259 - 1290
Math	3	1200 - 1231	1232 - 1239	1240 - 1275	1276 - 1290
	4	1200 - 1231	1232 - 1239	1240 - 1251	1252 - 1290
	5	1200 - 1231	1232 - 1239	1240 - 1256	1257 - 1290
	6	1200 - 1231	1232 - 1239	1240 - 1247	1248 - 1290
	7	1200 - 1231	1232 - 1239	1240 - 1256	1257 - 1290



<b>Subject</b>	<b>Grade</b>	<b>Below Goal</b>	<b>Near Goal</b>	<b>At Goal</b>	<b>Above Goal</b>
	<b>8</b>	1200 - 1231	1232 - 1239	1240 - 1254	1255 - 1290
	<b>HS</b>	1200 - 1231	1232 - 1239	1240 - 1248	1249 - 1290
<b>Science</b>	<b>4</b>	1200 - 1231	1232 - 1239	1240 - 1243	1244 - 1290
	<b>8</b>	1200 - 1231	1232 - 1239	1240 - 1243	1244 - 1290
	<b>HS</b>	1200 - 1231	1232 - 1239	1240 - 1244	1245 - 1290

## References

- Bunch, M. B. (2013). Setting Cut Scores on 21st Century Tests. Pre-session presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.
- Cizek, G. J. & Bunch, M. B. (2007). *Standard Setting: A Guide to Establishing and Evaluating Performance Standards on Tests*. Thousand Oaks, CA: Sage.
- Mattar, J., Hambleton, R., Copella, J. M., & Finger, M. S. (2012). Reviewing and revalidating performance standards on credentialing examinations. In G. J. Cizek (Ed.) *Setting Performance Standards: Foundations, Methods, and Innovations* (2<sup>nd</sup> Ed.), New York: Routledge.
- National Center and State Collaborative (2016). National Center and State Collaborative 2015 Operational Assessment Technical Manual. Phoenix, AZ: Arizona Department of Education.

## Appendix A. Facilitators and Panelists

### Standards Setting/Validation

Role	Name	Responsibility
Lead Facilitator	Michael Bunch	Presentation of the ALDs, Validation Overview, & OPLS software PowerPoint Provide communication between the facilitators and the Data Analysis Room Data entry and psychometric assistance as needed Move from room to room to monitor for consistency Facilitator/Participant support
Psychometrician	Dan Bowen	Perform data analysis Data entry and psychometric assistance as needed Move from room to room to monitor for consistency Facilitator/Participant support
Psychometrician	Jennie Bowen	Psychometric assistance as needed Move from room to room to monitor for consistency Facilitator/Participant support
Psychometrician	Yang Lu	Perform data analysis Data entry and psychometric assistance as needed Move from room to room to monitor for consistency Facilitator/Participant support
Psychometrician	Yong He	Psychometric assistance as needed
OPLS Technician	Fernando Bustamante	Maintained OPLS software Tech Support for OPLS
Senior Manager	Jami-Jon Pearson	Support Lead Facilitator Provide communication between the facilitators and the Data Analysis Room Move from room to room to monitor for consistency OPLS/TEAMS Support Facilitator/ Participant support
Facilitator	Melissa Fincher	Standards Validation ELA Grades 3 & 4
	Jean Clayton	Standards Validation ELA Grades 5 & 6
	Heather Peltier	Standards Validation ELA Grades 7 & 8
	Antionette Melvin	Standards Validation ELA High School
	Pat Richard	Standards Validation Math Grades 3 & 4
	Winnie Reed	Standards Validation Math Grades 5 & 6
	Tracy Fazio	Standards Validation Math Grades 7 & 8

## Facilitator Experience

<i>Name</i>	<i>Standard validation Panel</i>	<i>List of specific standard setting experiences, including facilitation and/or panelist training</i>
Melissa Fincher	Standards Validation ELA Grades 3 & 4	As the former Deputy Superintendent for Assessment & Accountability in Georgia, I have overseen, facilitated, and trained panelists for numerous standard settings across all grades, K-12, and all core content areas. I have also organized and facilitated a standard setting for the Technical College System of Georgia.
Jean Clayton	Standards Validation ELA Grades 5 & 6	Facilitated: Kentucky Alternate Assessment Program, 2008; Mississippi Alternate Assessment, June 2018; New York State ELA Standards Review, July 2018
Heather Peltier	Standards Validation ELA Grades 7 & 8	Former Chief Assessment Officer for the Tennessee Department of Education where she supervised the design, administration, and reporting of their large-scale state assessment program. Also served as Senior Director for the Assessment, Accountability, and Evaluation Department of the School District of Polk County in Florida.
Antionette Melvin	Standards Validation ELA High School	Facilitated: Georgia GAA 2.0 Standard Setting 2019
Pat Richard	Standards Validation Math Grades 3 & 4	Facilitated Mississippi Alternate Assessment Standard Setting Panel, June 2018
Winnie Reid	Standards Validation Math Grades 5 & 6	Facilitated: New Jersey Student Learning Assessment for Science; Smarter Balanced Assessment - Mathematics; Michigan - MI Access (2 separate standard setting meetings); New Jersey Assessment of Skills and Knowledge; ERB Writing Assessment Program - WrAP; UCNS Behavioral Neurology & Neuropsychiatry Examination; UCNS Clinical Neuromuscular Pathology Examination; National Examining Board of Ocularists (NEBO) Examination; Certified Aviation Manager (CAM) Examination; American Watchmaker Clockmaker Institute Examination; Test of Professional English (TOPE) Examination (2 separate meetings)
Tracy Fazio	Standards Validation Math Grades 7 & 8	Georgia GAA 2,0 Standard Setting 2019, AZ AZMERIT Standard Setting 2015

**STANDARDS SETTING/VALIDATION PANELISTS**

Role	Gender	Race / Ethnicity	School System	School
<ul style="list-style-type: none"> <li>• 1 Behavioral Strategist</li> <li>• 6 ELA teacher</li> <li>• 1 DF Huddle</li> <li>• 2 ESS Community Based Teacher</li> <li>• 1 IEP Facilitator</li> <li>• 2 Instructional Lead or Supervisor</li> <li>• 1ESS Resource Teacher</li> <li>• 1 Master Teacher</li> <li>• 8 Math teachers</li> <li>• 2 Science teachers</li> <li>• 1 Special Services Supervisor</li> <li>• 1 SPED Diagnostician or Specialist</li> <li>• 1 SPED instructional lead</li> <li>• 3 SPED supervisors</li> <li>• 18 SPED teachers</li> </ul>	<ul style="list-style-type: none"> <li>• 74 Females</li> <li>• 5 Males</li> </ul>	<ul style="list-style-type: none"> <li>• 25 AA</li> <li>• 44 White</li> <li>• 2 White /Hispanic</li> <li>• 2 Hispanic/Latinx, Black or African American</li> <li>• 1 Hispanic/Latinx</li> </ul>	<ul style="list-style-type: none"> <li>• 30 School Districts</li> <li>• 6 School Boards</li> </ul>	<ul style="list-style-type: none"> <li>• 15 Elementary</li> <li>• 7 Middle</li> <li>• 12 High School</li> <li>• Louisiana School for the Visually Impaired</li> <li>• Central Office</li> <li>• New Orleans Military and Maritime Academy</li> <li>• Butler Educational Complex</li> <li>• J B Lafargue Special Education Center</li> <li>• IDEA Innovation</li> </ul>

## **Appendix B. Training Materials and Work Products**

### **PowerPoint Presentations**

[All PowerPoint presentations have been submitted to LDOE under separate cover.]

- Pre-Policy Meeting
- Standards Validation
- Standard Setting
- Vertical Articulation

### **Facilitator Scripts**

- Standards Validation Facilitator Script
- Standard Setting Facilitator Script
- Vertical Articulation Facilitator Script
- OPLS Orientation Script

### **Work Products**

- Draft Threshold Achievement Level Descriptors
- Round 1 Cut Score Distributions
- Round 2 Cut Score Distributions

# Standards Validation Facilitator Script

## ELA Grades 3-4, 5-6, 7-8, and High School

### A.M. Review Session: Test 1

#### Review of Test 1 Range ALDs

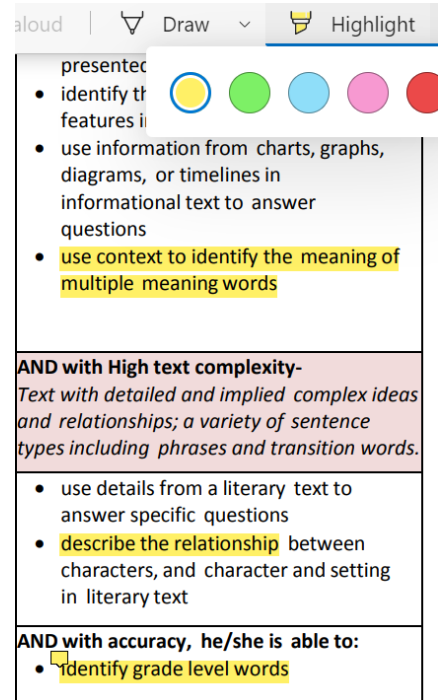
[Open the subgroup channel and make sure all participants are present, can see, hear, and be heard. Begin subgroup ALD discussion.]

Show the Range ALD for grade 3, 5, 7, or high school on your screen [Open the PDF version, not OPLS]. Focus first on the ALD for Level 3 and ask:

*Would a student just barely at Level 3 be able to do all the things listed here? If not, which tasks would that student struggle with at moderate text complexity? Which tasks would that student struggle with at high text complexity? Think about those two questions for a moment, and then let's talk.*

Give panelists a few minutes to review the ALD and think about which tasks would be too difficult for students at the borderline of this level. Then open the discussion. If no one volunteers within 10-15 seconds, call on someone, focusing primarily on tasks at the high text complexity level. [It may be necessary to mute everyone and ask panelists to raise their hands if they want to contribute. If your group is more orderly, you may decide to keep all microphones open.] As panelists call out tasks, use the PDF markup tools to highlight those tasks that panelists suggest are too difficult.

Don't take the first person's word that a task is too difficult. Let the panel discuss it and decide among themselves if it is too difficult or not. Let the group determine which tasks would be too difficult for a borderline Level 3 student to complete accurately. Use the markup tool to add comments to specific tasks or to a box or other portion of the ALD as shown here. If you think the panel has highlighted too many tasks as beyond the reach of a threshold Level 3 student, remind them that they may be getting too close to a description of Level 2 student, and move to that ALD to show the contrast. The final, marked-up version of the Level 3 ALD should represent the consensus of the panel.



Once you have finalized Level 3, move on to Level 4 and do the same thing. Afterwards, go on to Level 2 and do the same thing. Afterwards, show ALDs for Levels 2, 3, and 4 on your screen with all consensus markup and ask the panel to take one last look and let you know if anything needs to be changed. As with previous changes, make sure the group is in general agreement before marking up any ALD or entering any notes.

## Practice Round

Direct panelists to select the Practice Round test and say:

*This ordered item booklet has [ ] items arranged in difficulty order from easiest to hardest. The item on page [ ] has been designated as the item most closely associated with the cut score for Level 3. Subsequent items, which are more difficult than this one, would be considered more difficult than the typical borderline Level 3 student would likely be able to answer correctly. Examine the item on this page and consider whether or not you agree. If you agree, indicate by entering a bookmark, as you learned to do in the opening session.*

*If you think this item is too difficult, look at the one on the previous page. If that one is also too difficult, go to the one on the page before that. Keep going backwards in the ordered item booklet until you find the item you believe best represents the borderline for Level 3.*

*On the other hand, if you think the item indicated as the best representative of the borderline of Level 3 is too easy, look at the one on the next page. If that item is also too easy, go on to the next page and the next page until you find the item you believe best represents the borderline for Level 3.*

*Whether you think the original item is the best representative or prefer one before it or after, please examine items in both directions until you are certain that you have found the one item that best represents the borderline of Level 3.*

Ask panelists to use the **Raise Hand** feature to indicate they have completed the task. When everyone has finished, find out where everyone placed their bookmarks. First ask everyone to lower their hands, using the Raise Hand feature. Then say:

*Raise your hand [using the Raise Hand feature] if you left the bookmark on the original bookmarked page.*

Note the number of hands raised, then say:

*Raise your hand if you moved the bookmark to the page immediately after the original bookmarked page.*

Note the number of hands raised, then say:

*Raise your hand if you moved the bookmark even farther beyond the original bookmarked page.*

At this point, it doesn't matter how far beyond the original page anyone moved the bookmark. You will get to that during the discussion that follows. Say:

*Raise your hand if you moved the bookmark to the page just before the original bookmarked page.*

Note the number of hands raised, then say:



*Raise your hand if you moved the bookmark even farther back in the booklet.*

At this point, it doesn't matter how far before the original page anyone moved the bookmark. You will get to that during the discussion that follows. Note the distribution of bookmarks (original page, 1 page beyond, 2 or more pages beyond, 1 page before, 2 or more pages before) and share the results with the panel. Then say:

*We have a distribution of bookmarks, indicating that we are not in perfect agreement as to how the student just barely performing at Level 3 would perform. Let's talk about these differences of opinion.*

Ask someone who left the bookmark on the original page why they did that. Make sure the response is grounded in the ALD that you marked up previously. Show the marked-up Level 3 ALD if necessary. Then ask others to explain their responses, starting with someone who went forward one page, then someone who went backward one page. If anyone went forward or backward more than one page, ask them to explain their response. All responses should be grounded in the Level 3 ALD.

Note that the differences of opinion do not mean that someone is wrong and someone else is right. We asked a diverse group of people to participate in this activity to make sure we bracket a cut score for each level. In the end, we will take the average of all their responses to determine the cut scores we will recommend to LDOE.

Ask if there are any questions about the task they just completed. Answer any questions and then direct panelists to close the Practice Round and open Test 1 and complete the appropriate section of the **Readiness Form**.

### **Validation/Modification of Test 1 Cut Scores**

Once everyone has completed the **Readiness Form** direct them to the item map for Test 1. Say:

*Click on the item map. Note that three of the pages are bookmarked: Level 2, Level 3, and Level 4. Please click on the page that shows the Level 3 bookmark. That will be page [\_\_]. I want you to study the item on this page as you just did for the practice round and consider whether it is the best representative of the borderline for Level 3. If it is, fine, but don't set a bookmark there just yet. Look at the next page or two and one or two pages before this page before you make up your mind. Once you make up your mind, place your bookmark for Level 3. Once you have placed your bookmark for Level 3, use the Raise Hand feature to let me know you have finished. When everyone has finished, we will have a brief discussion as we did in the practice round. Do not go on to the next bookmark until we have talked about Level 3, and **do not press Submit**.*

When everyone has placed a Level 3 bookmark, start a discussion like that for the Practice round. Again, every response should be grounded in the Level 3 ALD, and we do not expect perfect agreement. This discussion should not drag on, as it is primarily a progress check for you to make sure everyone is following direction and considering the items in terms of the marked-up version of the range ALD. Whenever you are satisfied that everyone is following directions, say:

All right, now you can return to your ordered item booklet. If you are still satisfied with your Level 3 bookmark, move on to the page with the Level 4 bookmark. That will be page [\_\_\_]. Look at the item on that page and consider whether or not it is the best representative of the borderline of Level 4, making sure that you have also looked at one or two items before and after this page, just to make sure. Then proceed just as you did for Level 3 to set a bookmark for Level 4. It can be on the original page or on one or more pages before or after that page. Once you have set a bookmark for Level 4, go back to the page that is bookmarked Level 2, and do the same thing. When you have set all three bookmarks, look over your booklet and make sure you are still satisfied with all three. If you are, press **Submit**. If you are not satisfied with one or more of your bookmarks, go back and move them, and then press **Submit**. Once you press **Submit**, you may review your bookmarks, but you cannot change them, so please be sure you are satisfied with all three of your bookmarks before you press **Submit**. We need to complete this assignment by [\_\_:\_\_] so we can move on to the next task. If you run into difficulty, you have my phone number and email address. I will be monitoring your progress, so I may also contact you if it looks like you are having problems.

Monitor progress on your Facilitator View of OPLS. We want to make sure everyone completes Test 1 with enough time left to complete ALD review and cut score validation for Test 2. The high school panel has only one test, so they can take the rest of the day if they need to do so. Since the other panels are only completing a single round for their two tests, we are not allowing the high school panel to go back and complete a second round for their test. When they have submitted the three bookmarks for their one test, they are finished.

## P.M. Review Session: Test 2

### Review of Test 2 ALDs

As panelists log in, welcome them, and make sure everyone is online. Contact any stragglers. Show the Range ALD for grade 4, 6, or 8 on your screen. Focus first on the ALD for Level 3 and ask:

cloud | Draw | Highlight

- presented
- identify the features in
- use information from charts, graphs, diagrams, or timelines in informational text to answer questions
- use context to identify the meaning of multiple meaning words

**AND with High text complexity-**  
Text with detailed and implied complex ideas and relationships; a variety of sentence types including phrases and transition words.

- use details from a literary text to answer specific questions
- describe the relationship between characters, and character and setting in literary text

**AND with accuracy, he/she is able to:**

- identify grade level words

Would a student just barely at Level 3 be able to do all the things listed here? If not, which tasks would that student struggle with at moderate text complexity? Which tasks would that student struggle with at high text complexity? Think about those two questions for a moment, and then let's talk.

Give panelists a few minutes to review the ALD and think about which tasks would be too difficult for students at the borderline of this level. Then open the discussion. If no one volunteers within 10-15 seconds, call on someone, focusing primarily on tasks at the high text complexity level. [It may be necessary to mute everyone and ask panelists to raise their hands if they want to contribute. If your group is more orderly, you may decide to keep all microphones open.] As panelists call out tasks, use the PDF markup tools to highlight those tasks that panelists suggest are too difficult. Don't take the first person's word that a task is too difficult. Let the panel discuss it and decide among themselves if it is too difficult or not. Let the group determine which tasks would be too difficult for a borderline Level 3 student to

complete accurately. Use the markup tool to add comments to specific tasks or to a box or other portion of the ALD as shown here. If you think the panel has highlighted too many tasks as beyond the reach of a threshold Level 3 student, remind them that they may be getting too close to a description of Level 2 student, and move to that ALD to show the contrast. The final, marked-up version of the Level 3 ALD should represent the consensus of the panel.

Once you have finalized Level 3, move on to Level 4 and do the same thing. Afterwards, go on to Level 2 and do the same thing. Afterwards, show ALDs for Levels 2, 3, and 4 on your screen with all consensus markup and ask the panel to take one last look and let you know if anything needs to be changed. As with previous changes, make sure the group is in general agreement before marking up any ALD or entering any notes.

There is no Practice Round for Test 2. After the ALD review, direct all panelists to Test 2 and have them complete the appropriate portion of the **Readiness Form**.

### **Validation/modification of Test 2 cut scores**

Once everyone has completed the **Readiness Form** direct them to the item map for Test 1. Say:

*Click on the item map. Note that three of the pages are bookmarked: Level 2, Level 3, and Level 4. Please click on the page that shows the Level 3 bookmark. That will be page [\_\_]. I want you to study the item on this page as you just did for the practice round and consider whether it is the best representative of the borderline for Level 3. If it is, fine, but don't set a bookmark there just yet. Look at the next page or two and one or two pages before this page before you make up your mind. Once you make up your mind, place your bookmark for Level 3. Once you have placed your bookmark for Level 3, move on to Level 4 and then back to Level 2, as you did earlier today. When you are satisfied with all your bookmarks, press Submit. Once you press **Submit**, you may review your bookmarks, but you cannot change them, so please be sure you are satisfied with all three of your bookmarks before you press **Submit**. We need to complete this assignment by [\_\_:\_\_] so we can move on to the next task. If you run into difficulty, you have my phone number and email address. I will be monitoring your progress, so I may also contact you if it looks like you are having problems.*

Monitor progress on your Facilitator View of OPLS. We want to make sure everyone completes Test 1 with enough time left to complete ALD review and cut score validation for Test 2. The high school panel has only one test, so they can take the rest of the day if they need to do so. Since the other panels are only completing a single round for their two tests, we are not allowing the high school panel to go back and complete a second round for their test. When they have submitted the three bookmarks for their one test, they are finished.

### **Wrap-Up/Evaluation**

There is an evaluation form that all panelists need to complete. As they complete Test 2 (or Test 1 for the high school panel), direct them to the **Evaluation Form**, and ask them to complete it. Make sure they respond to all the items. When they have done so and submitted their forms, they will be finished with this workshop. Be sure to thank them once again for their participation and remind them that the cut score we recommend here today will be submitted to LDOE for review and then on to a technical advisory committee and finally to the State Board (Board of Elementary and Secondary Education, or BESE).

# LEAP Connect Standard Setting Facilitator Script

## June 22 A.M. Activity: Threshold ALDs

[Open the subgroup channel and make sure all participants are present, can see, hear, and be heard. Begin subgroup ALD discussion.]

Threshold ALDs do not exist for these tests. Therefore, the objective of this activity is to create threshold ALDs from existing range ALDs. Show the Range ALD for grade 4 science or high school science on your screen [Open the PDF version, not OPLS. See example at right]. Focus first on the ALD for Level 3 and ask:

*Would a student just barely at Level 3 be able to do all the things listed here? If not, which tasks would that student struggle with at moderate task complexity? Which tasks would that student struggle with at high task complexity? Think about those two questions for a moment, and then let's talk.*

Give panelists a few minutes to review the ALD and think about which tasks would be too difficult for students at the borderline of this level. Then open the discussion. If no one volunteers within 10-15 seconds, call on someone, focusing primarily on tasks at the high task complexity level. [It may be necessary to mute everyone and ask panelists to raise their hands if they want to contribute. If your group is more orderly, you may decide to keep all microphones open.] As panelists call out tasks, use the PDF markup tools to highlight those tasks that panelists suggest are too difficult.

Don't take the first person's word that a task is too difficult. Let the panel discuss it and decide among themselves if it is too difficult or not. Let the group determine which tasks would be too difficult for a borderline Level 3 student to complete accurately. Use the markup tool to add comments to specific tasks or to a box or other portion of the ALD as shown here. If you think the panel has highlighted too many tasks as beyond the reach of a threshold Level 3 student, remind them that they may be getting too close to a description of Level 2 student, and move to that ALD to show the contrast. The final, marked-up version of the Level 3 ALD should represent the consensus of the panel.

Once you have finalized Level 3, move on to Level 4 and do the same thing. Afterwards, go on to Level 2 and do the same thing. Afterwards, show ALDs for Levels 2, 3, and 4 on your screen with all consensus markup and ask the panel to take one last look and let you know if anything needs to be changed. As with previous changes, make sure the group is in general agreement before marking up any ALD or entering any notes.

After you have marked up your set of ALDs, dismiss the panel and instruct them to log back into the main meeting for instruction in the bookmark method and OPLS. Then forward your marked-up ALDs to Fernando Bustamante ([fbustamante@measinc.com](mailto:fbustamante@measinc.com)) to upload into OPLS and email them to each panelist.

At Goal
<b>Moderate task complexity:</b>
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify a model which shows that energy can be converted from one form to another</li> <li>• identify the questions that can be investigated about the changes in energy that occur when objects collide</li> <li>• identify the initial and final forms of energy given a scenario related to energy conversion</li> <li>• identify the plant or animal structure that best meets the plant's or animal's needs in a given scenario</li> <li>• identify changes to the landscape caused by living things</li> <li>• identify a source of erosion or weathering that can cause changes to the landscape given a model</li> <li>• match a natural hazard to a solution that humans use to reduce the impact of natural hazards</li> </ul>
<b>AND with High task complexity:</b>
<ul style="list-style-type: none"> <li>• use data to identify when energy is greatest or least for similar objects moving at different speeds</li> <li>• predict an object's motion based on the amplitude of the wave</li> <li>• use data to identify the cause and effect relationships between weathering or erosion and land with or without vegetation</li> <li>• identify patterns in the location of Earth features</li> <li>• identify a human solution to reduce the impact of a natural Earth process on humans</li> </ul>

## June 22 P.M. Activity: Test 1 Round 1

As panelists log in, welcome them, and make sure everyone is online. Contact any stragglers. Welcome panelists back and ask if anyone has any questions about the instruction they have just received in the bookmark procedure and OPLS. Answer any questions they may have and then introduce the afternoon's activity: Setting cut scores for Test 1 (grade 4 science or high school science). Tell panelists that you sent them the threshold ALDs in an email message while they were in the large-group meeting, and then give them a minute or two to check.

Direct panelists to open Test 1 and complete the **Readiness Form**. Once all panelists have completed the Readiness Form, instruct them to open the **Practice Round** test, and say:

*This ordered item booklet has [ ] items arranged in difficulty order from easiest to hardest. Using the ALDs we worked on this morning, I want you to examine each item in the booklet and ask yourself these three questions:*

- 1. What skills must a student have in order to know the correct answer?*
- 2. What makes this item more difficult than preceding items?*
- 3. Would students just barely at Level 3 have at least a 50/50 chance of responding correctly to this item?*

*If you answer Yes to question #3, then go on to the next page and ask yourself the same three questions. At some point, you will reach an item for which your answer will be No. Look up at the top of the page and click **Place a Bookmark**. You will have a choice of levels; click **Level 3**.*

Ask panelists to use the **Raise Hand** feature to indicate they have completed the task. When everyone has finished, find out where everyone placed their bookmarks. First ask everyone to lower their hands, using the **Raise Hand** feature. Then direct panelists to use the **Chat** feature to indicate the page number where they entered their bookmark. Check the Chat feature and tally the page numbers. Then open a conversation about the distribution of bookmarks. Start with one of the bookmarks near the middle of the distribution and ask for a volunteer who placed a bookmark on that page to explain why. Note that all explanations must be grounded in the threshold ALDs you created this morning. Then go to the low and high extremes and ask for volunteers to explain how they arrived at their decisions to place their bookmarks there. Again, all explanations must be grounded in the threshold ALDs. Place those on your screen, if necessary, and remind panelists that they have the same ALDs from the email message you sent earlier in the day.

After panelists have presented and explained their bookmark placements, say:

*We do not expect everyone to agree on the cut scores. We purposely chose a diverse group to get a range of viewpoints. In the end, we will average the cut scores for each panel and present those averages to LDOE for consideration. LDOE will review them and receive additional advice from a technical advisory committee and a policy advisory committee before forwarding the cut scores to the Board of Elementary and Secondary Education.*

Answer any questions panelists have about the activity they just completed and then ask if they feel ready to start setting cut scores on Test 1. Direct them to the **Readiness Form** to fill out the portion that indicates they are ready to begin Round 1 of Test 1. When everyone has completed that section of the **Readiness Form**, direct them to open Test 1 (grade 4 science or high school science). Briefly remind them of the navigation features of OPLS and the goal of Round 1: to place three bookmarks, one each for the threshold of Levels 2, 3, and 4. Say:

*Open Test 1 to the **Item Map**. Click on page 1 and examine each item as you did in the Practice Round test. Ask yourself the same three questions:*

- 1. What skills must a student have in order to know the correct answer?*
- 2. What makes this item more difficult than preceding items?*
- 3. Would students just barely at Level 3 have at least a 50/50 chance of responding correctly to this item?*

*At some point your answer to question #3 will be No. Place your Level 3 bookmark on this page, as you did in the Practice Round test. Then continue through the booklet asking the same three questions but thinking about the threshold of Level 4 when you get to the last question. At some point, your answer will be No. When that occurs, place your Level 4 bookmark on that page as you have been shown. Then go back to the beginning of the booklet and repeat this process but with the threshold of Level 2 in mind. You will have the rest of the afternoon to do that. Are there any questions?*

Answer any questions panelists may have and remind them that you will be available by text or email and that you will be monitoring their progress on your version of OPLS. Keep an eye on their progress, and text or call anyone who seems to be having difficulty. If some are moving much more slowly than others, encourage them to keep at it, and see what you can do to help. Keep in mind that we also have technical assistance available if they need it.

### **June 23 A.M. Activity: Test 1 Round 2**

As panelists log in, welcome them, and make sure everyone is online. Contact any stragglers. Before opening the OPLS software ask panelists about their impressions of the Day 1 activities, particularly any difficulties they might have had with connectivity, software navigation or understanding of the task. Then ask for their general impressions of Round 1 and the training leading up to it to get an idea of their level of understanding of what they are doing.

Once you have completed this conversation, begin a conversation about the results of Round 1. You will have received those results the night before. Look over them and note anything you think you need to address. If you have questions, contact Mike Bunch ([mbunch@measinc.com](mailto:mbunch@measinc.com) or 919.225.2312) for help. Display the chart showing the distribution of bookmark placements as shown in Figure 1.

		Level 2	Level 3	Level 4	Notes
Item 985116	1200				
Item 984985	1200				
Item 1045227	1200				
Item 985128	1204				
Item 1045200	1206				
Item 985004	1209				
Item 985119	1210				
Item 985049	1214				
Item 985072	1216				
Item 1045195	1220				
Item 1045213	1222				
Item 1045228	1224				
Item 1045221	1227	█	2		
Item 985059	1229	█	1		
Item 1045196	1230	█	2		
Item 985100	1234	█	1		
Item 1045208	1235				
Item 985046	1236		█	1	
Item 1045218	1237		█	3	
Item 1045216	1238	█	1	1	
Item 1045235	1239				
Item 985484	1240				
Item 985083	1242		█	1	1

**Figure 1. Sample distribution of Round 1 bookmark placements (Level 4 truncated)**

Starting with the distribution of Level 3 bookmarks, ask someone who placed a bookmark in the middle of the distribution to explain why that page seemed to mark the threshold of Level 3. Note that the explanation should be grounded in the threshold ALD for Level 3. Have that ready and show it on your screen, if necessary, or remind panelists that they have those ALDs as well. Then ask someone who placed a Level 3 bookmark well above or below the middle of the range to explain their decision. Again, the explanation must be grounded in the Level 3 threshold ALD. Finally, remind panelists that we do not expect perfect agreement; we only expect each person to ground their decision in the threshold ALD and consider the explanations offered by the other panelists.

Now move on to Level 4 and do the same thing. Afterwards, repeat the process for Level 2. Then move on to actual cut scores, as shown in Figure 2.

Performance Level	Count	Minimum	Maximum	Median Cut	Percent At Or Above
Level 2	7	1227.0	1238.0	1230.0	80%
Level 3	7	1236.0	1252.0	1237.0	53%
Level 4	7	1242.0	1290.0	1248.0	25%

## Figure 2. Round 1 tabular feedback

Note the median cut for each level and remind panelists that it will be the group median that we ultimately report to LDOE, but we will also report the range of cut scores as a measure of group cohesion. Draw attention to the **Percent At Or Above** column and ask if those percentages surprise them or if they seem about right. Remind them that they will have one more opportunity to place three bookmarks in a few minutes, so it is important that they be comfortable with the impact of those final placements. You will have the range of cut scores for Level 3 provided by the policy committee. Let panelists know if their Level 3 cut scores fell within this range. If not, let them know what that range is. In either event, note that those ranges will be posted in their item maps during Round 2.

Draw the conversation to a close, and direct panelists to OPLS to complete the Readiness Form for **Test 1 Round 2**. Give them time to complete that task, and then direct them to open Test 1 Round 2. Open yours on screen to show the item map with the **Percent At or Above** column opened with the Level 3 cut score range highlighted. Say:

*Open your Test 1 Round 2 to the **Item Map**. Note that your Round 1 bookmarks are indicated. In Round 2, you can keep those bookmarks, or move them – it’s your choice. Note also that the far right column shows the percentage of students who would score at or above the score indicated by each page. Note also that some of these percentages are highlighted. These represent the range of cut scores a policy advisory committee recommended to LDOE in May. We offer these to you for the same reason that we offer the percentages at or above – as a sort of reality check for you as you consider where to place your bookmarks.*

*You will have the rest of the morning to complete Round 2, as you did Round 1, with one exception. I want you to start with your Level 3 bookmark, but you don’t need to start on page 1 of the booklet. Look where you placed your Round 1 bookmark for Level 3. Go back a few pages and forward a few pages and re-examine those items. If you heard something in the conversation this morning that made you think you had been too lenient or too stringent in your Round 1 bookmark placement, you may want to place your Round 2 bookmark in a different place. Or you may want to leave it where it is. In either event, you will need to enter a bookmark for Level 3, then for Level 4, and finally for Level 2. When you have done that, and you are satisfied with your three choices, press **Submit**. I will monitor your progress, and you may also contact me if you have any questions. Are there any questions before we begin?*

Remind panelists of the start time for the afternoon session [\_\_:\_\_], and begin monitoring their progress with your facilitator version of OPLS. If you see a straggler, send them a word of encouragement and a reminder of the afternoon start time.

### June 23 P.M. Activity: Test 2 Round 1

Welcome panelists back, and make sure everyone has logged in. Threshold ALDs do not exist for these tests. Therefore, the first objective of this activity is to create threshold ALDs from existing range ALDs, just as you did for Test 1. Show the Range ALD for grade 5 science or high school math on your screen. Focus first on the ALD for Level 3 and ask:



*Would a student just barely at Level 3 be able to do all the things listed here? If not, which tasks would that student struggle with at moderate task complexity? Which tasks would that student struggle with at high task complexity? Think about those two questions for a moment, and then let's talk.*

Give panelists a few minutes to review the ALD and think about which tasks would be too difficult for students at the borderline of this level. Then open the discussion. If no one volunteers within 10-15 seconds, call on someone, focusing primarily on tasks at the high task complexity level. [It may be necessary to mute everyone and ask panelists to raise their hands if they want to contribute. If your group is more orderly, you may decide to keep all microphones open.] As panelists call out tasks, use the PDF markup tools to highlight those tasks that panelists suggest are too difficult.

Don't take the first person's word that a task is too difficult. Let the panel discuss it and decide among themselves if it is too difficult or not. Let the group determine which tasks would be too difficult for a borderline Level 3 student to complete accurately. Use the markup tool to add comments to specific tasks or to a box or other portion of the ALD as shown here. If you think the panel has highlighted too many tasks as beyond the reach of a threshold Level 3 student, remind them that they may be getting too close to a description of Level 2 student, and move to that ALD to show the contrast. The final, marked-up version of the Level 3 ALD should represent the consensus of the panel.

Once you have finalized Level 3, move on to Level 4 and do the same thing. Afterwards, go on to Level 2 and do the same thing. Afterwards, show pdf ALDs for Levels 2, 3, and 4 on your screen with all consensus markup and ask the panel to take one last look and let you know if anything needs to be changed. As with previous changes, make sure the group is in general agreement before marking up any ALD or entering any notes.

After you have marked up your set of ALDs, dismiss the panel and instruct them to log back into the main meeting for instruction in the bookmark method and OPLS. Then forward your marked-up ALDs to Fernando Bustamante ([fbustamante@measinc.com](mailto:fbustamante@measinc.com)) to upload into OPLS and email them to each panelist. Let panelists take a break while you are do that and remind them to be back at [\_\_:\_\_].

When panelists return, ask if they have any questions about the ALDs. Answer any questions panelists have about them, and then ask if they feel ready to start setting cut scores on Test 2. Direct them to the **Readiness Form** to fill out the portion that indicates they are ready to begin Round 1 of Test 2. When everyone has completed that section of the Readiness Form, direct them to open Test 2 (grade 8 science or high school math). Briefly remind them of the navigation features of OPLS and the goal of Round 1: to place three bookmarks, one each for the threshold of Levels 2, 3, and 4. Say:

*Open Test 2 to the **Item Map**. Click on page 1 and examine each item as you did in the previous test. Ask yourself the same three questions:*

- 1. What skills must a student have in order to know the correct answer?*
- 2. What makes this item more difficult than preceding items?*
- 3. Would students just barely at Level 3 have at least a 50/50 chance of responding correctly to this item?*

*At some point your answer to question #3 will be No. Place your Level 3 bookmark on this page, as you did in the Practice Round test. Then continue through the booklet asking the same three questions but*

*thinking about the threshold of Level 4 when you get to the last question. At some point, your answer will be No. When that occurs, place your Level 4 bookmark on that page as you have been shown. Then go back to the beginning of the booklet and repeat this process but with the threshold of Level 2 in mind. You will have the rest of the afternoon to do that. Are there any questions?*

Answer any questions panelists may have and remind them that you will be available by text or email and that you will be monitoring their progress on your version of OPLS. Keep an eye on their progress, and text or call anyone who seems to be having difficulty. If some are moving much more slowly than others, encourage them to keep at it, and see what you can do to help. Keep in mind that we also have technical assistance available if they need it. Panelists will have the rest of the afternoon to complete the assignment. However, stay in touch and prod any who seem to be lagging behind.

### June 24 A.M. Activity: Test 2 Round 2

As panelists log in, welcome them, and make sure everyone is online. Contact any stragglers. After confirming that everyone is online, begin a conversation about the results of Round 1. You will have received those results the night before. Look over them and note anything you think you need to address. If you have questions, contact Mike Bunch ([mbunch@measinc.com](mailto:mbunch@measinc.com) or 919.225.2312) for help. Display the chart showing the distribution of bookmark placements as shown in Figure 3.

		Level 2	Level 3	Level 4	Notes	
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Item 984985	1200					
Item 1045227	1200					
Item 985128	1204					
Item 1045200	1206					
Item 985004	1209					
Item 985119	1210					
Item 985049	1214					
Item 985072	1216					
Item 1045195	1220					
Item 1045213	1222					
Item 1045228	1224					
Item 1045221	1227		2			
Item 985059	1229		1			
Item 1045196	1230		2			
Item 985100	1234		1			
Item 1045208	1235					
Item 985046	1236			1		
Item 1045218	1237			3		
Item 1045216	1238		1		1	
Item 1045235	1239					
Item 985484	1240					
Item 985083	1242			1		1

**Figure 3. Sample distribution of Round 1 bookmark placements (Level 4 truncated)**

As you did with Test 1, starting with the distribution of Level 3 bookmarks, ask someone who placed a bookmark in the middle of the distribution to explain why that page seemed to mark the threshold of Level 3. Note that the explanation should be grounded in the threshold ALD for Level 3. Have that ready and show it on your screen, if necessary, or remind panelists that they have those ALDs as well. Then ask someone who placed a Level 3 bookmark well above or below the middle of the range to explain their

decision. Again, the explanation must be grounded in the Level 3 threshold ALD. Remind panelists once more that we do not expect perfect agreement; we only expect each person to ground their decision in the threshold ALD and consider the explanations offered by the other panelists.

Now move on to Level 4 and do the same thing. Afterwards, repeat the process for Level 2. Then move on to actual cut scores, as shown in Figure 4.

Performance Level	Count	Minimum	Maximum	Median Cut	Percent At Or Above
Level 2	7	1227.0	1238.0	1230.0	80%
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Level 4	7	1242.0	1290.0	1248.0	25%

**Figure 4. Round 1 tabular feedback**

Note the median cut for each level, and remind panelists that it will be the group median that we ultimately report to LDOE, but we will also report the range of cut scores as a measure of group cohesion. Draw attention to the **Percent At Or Above** column and ask if those percentages surprise them or if they seem about right. Remind them that they will have one more opportunity to place three bookmarks in a few minutes, so it is important that they be comfortable with the impact of those final placements. You will have the range of cut scores for Level 3 provided by the policy committee. Let panelists know if their Level 3 cut scores fell within this range. If not, let them know what that range is. In either event, note that those ranges will be posted in their item maps during Round 2.

Draw the conversation to a close, and direct panelists to OPLS to complete the **Readiness Form for Test 2 Round 2**. Give them time to complete that task, and then direct them to open Test 2 Round 2. Open yours on screen to show the item map with the **Percent At or Above** column opened with the Level 3 cut score range highlighted. Say:

*Open your Test 2 Round 2 to the **Item Map**. Note that your Round 1 bookmarks are indicated. In Round 2, you can keep those bookmarks, or move them – it’s your choice. Note also that the far right column shows the percentage of students who would score at or above the score indicated by each page. Note also that some of these percentages are highlighted. These represent the range of cut scores a policy advisory committee recommended to LDOE in May. We offer these to you for the same reason that we offer the percentages at or above – as a sort of reality check for you as you consider where to place your bookmarks.*

*You will have the rest of the morning to complete Round 2, as you did Round 1, with one exception. I want you to start with your Level 3 bookmark, but you don’t need to start on page 1 of the booklet. Look where you placed your Round 1 bookmark for Level 3. Go back a few pages and forward a few pages and re-examine those items. If you heard something in the conversation this morning that made you think you had been too lenient or too stringent in your Round 1 bookmark placement, you may want to place your Round 2 bookmark in a different place. Or you may want to leave it where it is. In either event, you will need to enter a bookmark for Level 3, then for Level 4, and finally for Level 2. When you have done that, and you are satisfied with your three choices, press **Submit**. I will monitor your progress, and you may also contact me if you have any questions. Are there any questions before we begin?*

Some of the high school panel will be participating in the vertical articulation, so remind them that they need to report back at [\_\_:\_\_], for that activity. Thank all panelists in advance, and remind them that when

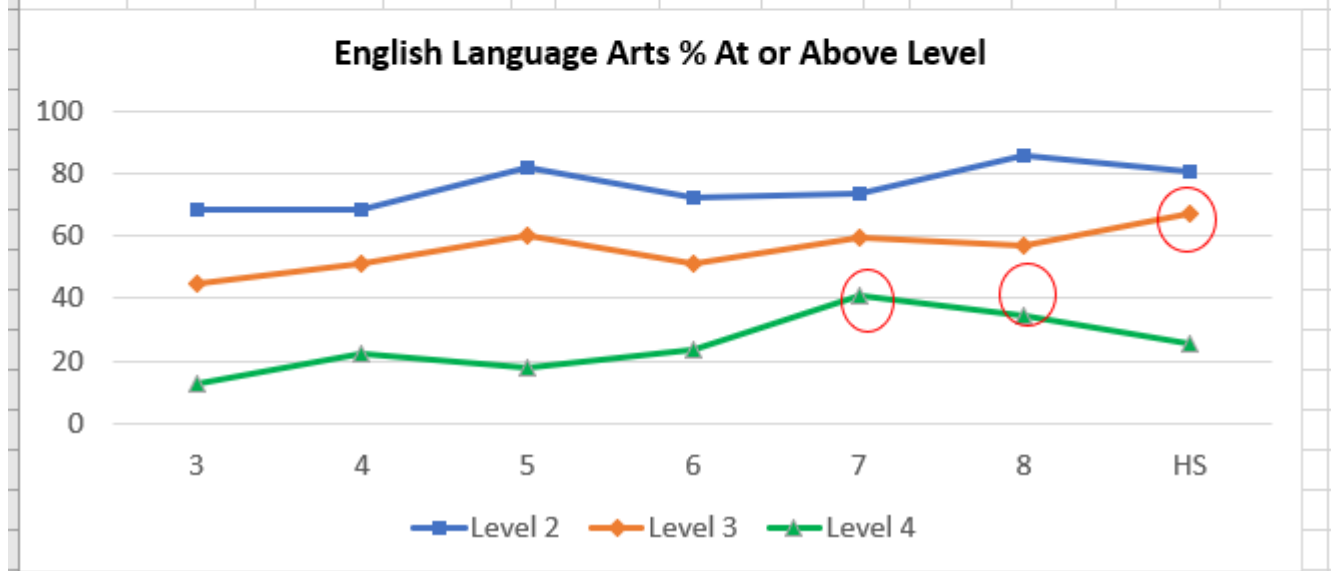
they finish Round 2, they should complete the **Evaluation Form**. Begin monitoring their progress with your facilitator version of OPLS. If you see a straggler, send them a word of encouragement and a reminder of the afternoon start time. Also, as panelists complete the round, check to see that they have also completed the Evaluation Form. If someone has finished Round 2 but not the Evaluation Form, contact them to remind them to do that.

### Vertical Articulation Facilitator’s Script

**Log in and check the roll.** Briefly review the rules of thumb from the PowerPoint presentation and see if there are any questions. Answer any questions that arise. Check with Mike if you’re not sure. Once everyone is settled, open the Readiness form and direct panelists to complete it.

Show the graphic. Show the graphic and tables in your VAC spreadsheet:

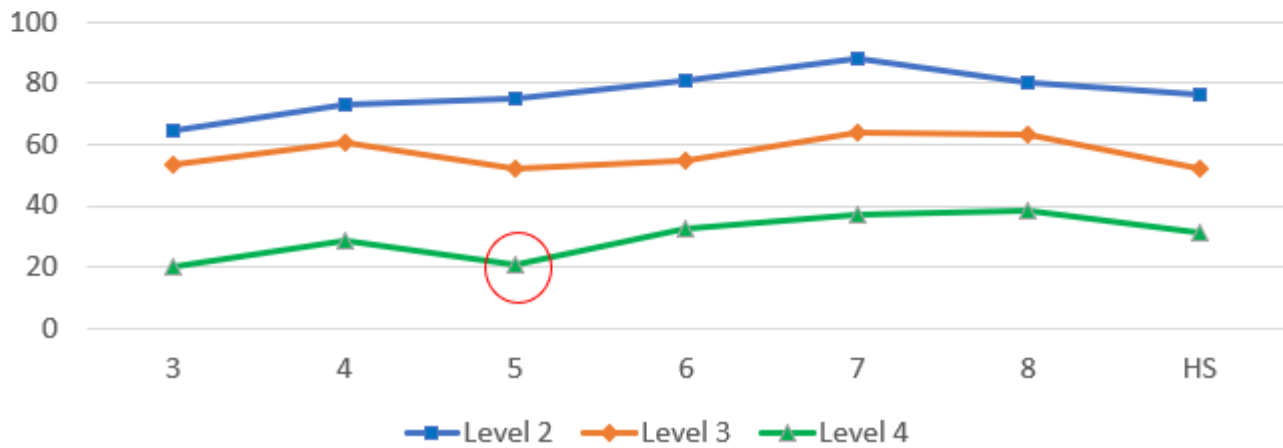
LEAP Connect VAC Table for ELA (Locked)											
Grade	Final Round Cuts (Page #)			Percent At or Above			Percent in Category				
	Level 2	Level 3	Level 4	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4	
3	8	17	31	68.3	44.8	12.9	31.7	23.5	31.9	12.9	
4	7	12	32	68.3	51	22.2	31.7	17.3	28.8	22.2	
5	11	22	38	81.9	59.9	18.2	18.1	22	41.7	18.2	
6	10	23	37	72.5	51	23.5	27.5	21.5	27.5	23.5	
7	10	17	33	73.3	59.8	41	26.7	13.5	18.8	41	
8	8	21	30	85.5	56.9	42.7	14.5	28.6	14.2	42.7	
HS	12	21	32	70.9	62.2	25.4	29.1	8.7	36.8	25.4	



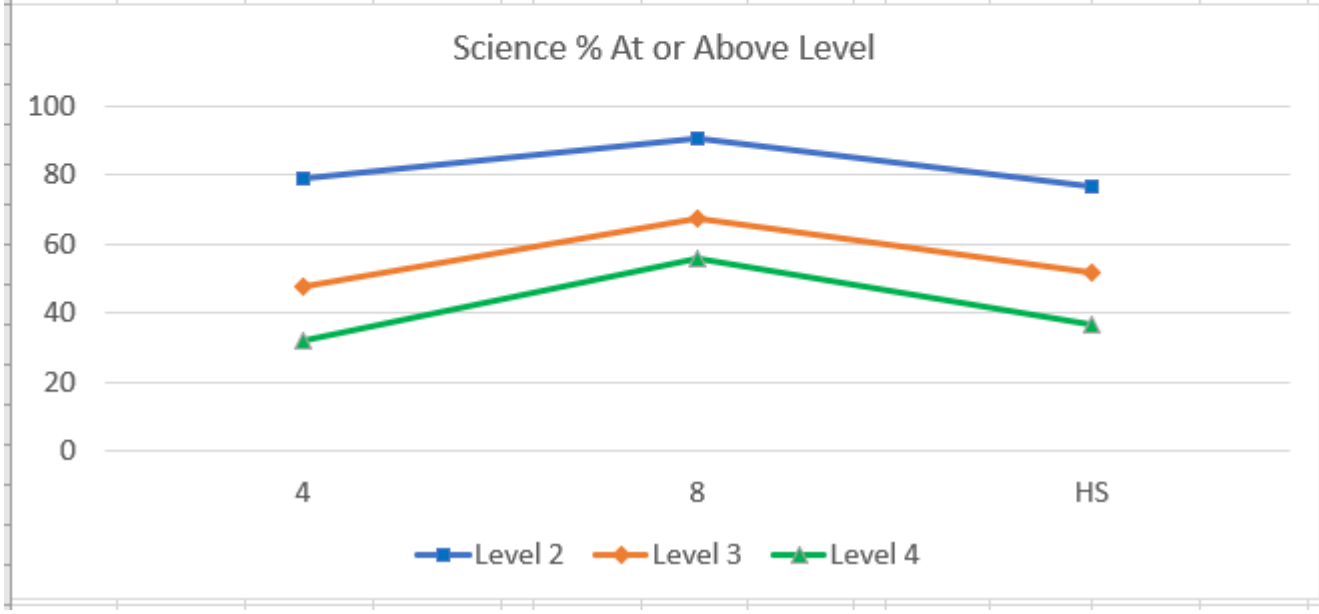
LEAP Connect VAC Table for Math (Locked)

Grade	Final Round Page Numbers			Percent At or Above			Percent in Category			
	7	Level 3	Level 4	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4
3	10	15	35	64.5	53.5	19.8	35.5	11	33.7	19.8
4	7	12	31	72.8	60.4	28.7	27.2	12.4	31.7	28.7
5	7	15	30	75.2	52.1	20.7	24.8	23.1	31.4	20.7
6	12	21	34	80.6	54.5	32.8	19.4	26.1	21.7	32.8
7	11	17	33	87.8	63.9	37.1	12.2	23.9	26.8	37.1
8	6	14	32	80.1	63.5	38.5	19.9	16.6	25	38.5
HS	10	22	35	76.5	52.2	31.2	23.5	24.3	21	31.2

Mathematics % At or Above Level



LEAP Connect VAC Table for Science (Locked)											
Grade	Final Round Page Numbers			Percent At or Above			Percent in Category				
	Level 2	Level 3	Level 4	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4	
4	7	17	27	79.1	47.4	31.8	20.9	31.7	15.6	31.8	
8	10	17	30	90.6	67.6	55.9	9.4	23	11.7	55.9	
HS	12	21	31	76.7	58.5	30.3	23.3	18.2	28.2	30.3	



**Recommend or have someone recommend a cut score to review.** Spend some time in advance of vertical articulation reviewing the cut scores and impacts from standards validation or standard setting, and identify one or two points on the graph that you would like to look at if no one suggests any in the first minute or two. Ask:

*Do you see any points on this graph that make you want to take a closer look at one or more cut scores?*

**Review cuts.** For any cut score recommended for review (start with any Level 3 cut scores), open the round for that booklet; look at the bookmarked page and one or two pages before or after, depending on whether the current cut score seems too high or too low. Lead a discussion of the content of the items on those pages, relative to the threshold ALDs, which are now in the OIBs where the range ALDs were previously.

At the end of the discussion, direct panelists to open their OIBs and enter a new bookmark, either on the original page or the page they believe the bookmark should be moved to, as they had done in standards validation or standard setting. Monitor in your OPLS Facilitator’s view, and when everyone has entered a bookmark, announce the outcome.

**Update.** Post the new page number (if it has changed) on your first table and show the result on the graph.

**Repeat as necessary.** Follow this process for every cut score anyone brings up or which you suggest to the committee and they agree to review.

Wrap up. When there are no more cut scores to review, or if there is a long pause, ask:

*Do we need to examine any more of these cut scores? If not, I will ask each of you to verify that we have concluded our review, and you accept the remaining cut scores.*

Poll the group to allow each member to say Yes. If there are any No's, ask which cut score needs to be re-examined, and proceed as before.

Thank the committee members for their participation on behalf of Measurement Incorporated and the LDOE.

## OPLS Training Script

### 1. LOGGING IN:

- *First, log into the system. Make sure you have your user id and password available.*
- *Using Google Chrome go to OPLS.measinc.com. You should see the OPLS login page.*
- *Enter your user id and password, and click on Sign In.*
- *If you are logging in for the first time, you will see a User Agreement; please accept the terms and conditions by clicking in the appropriate box, and then click Submit.*

➤ Sign in.

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### 2. FORMS LIST PAGE: Describe content of forms list page and difference between active and inactive forms:

- *Once you've entered the OPLS system, you will see the form-list page.*
  - *This page shows all the forms assigned to you as a panelist, grouped by "form sets."*
  - *A "form" for OPLS purposes is basically a portal to a task; we will go through each type of form.*
- *Active and completed forms are shown as hyperlinks (blue text), while inactive forms are shown as simple text (black text).*
- *Your facilitator will activate the hyperlinks as needed throughout the process.*
- *You will need to refresh your screen in order for the hyperlink to activate.*

➤ Direct cursor to the page refresh icon - the circular arrow at upper left corner of browser page.

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3. **FORM SETS:** Describe the forms that comprise a form set.

- *Okay, let's take a look at some of the specific forms we'll be working with.*
  - *We're going to learn how to navigate through OPLS by walking through Science grade 4 as an example.*
  - *Here is the Science grades 4 & 8 Form Set. It includes ten forms.*
  - *While the form set includes both grades 4 and 8, for OPLS training purposes we are just going to look through the grade 4 forms as well as the evaluation.*
- 

4. **NAVIGATING THE OIB:** Open Science grade 4 Round 1 and walk through.

- *Let's go ahead and take a look at the Science grade 4 Round 1 form. I'm skipping ahead here to show you all the OPLS functions, but we'll return to the other forms in a bit.*
  - Open Science 4 Round 1.
    - *Here we are on Page 1 of the Science grade 4 Round 1 Ordered Item Booklet.*
  - Indicate that label with your cursor.
    - *Let's take a look at the information on this page.*
- 

**METADATA**

- *Toward the top of the page, we see a table with a blue header bar.*
  - *This table contains item-specific information, or "metadata."*
- 

**RESOURCES**

- *Below this metadata we see a series of tabs. Each of these opens a resource relevant to the item.*

- *The initial view is always the DTA for the item.*
  - *There is also a tab for the item itself...*
  - Click on ITEM tab to demonstrate.
    - *...and a tab for ALDs.*
  - Click on ALD tab to demonstrate.
- 

## **NAVIGATION**

- Okay, now, at the top right of your screen, you will see some navigation choices.
  - Indicate with your cursor.
    - *The ITEM MAP is a list of all the items on the form with which you are currently working.*
    - *To open the item map, click on ITEM MAP. You will see all the items in the OIB along with their associated scale scores.*
    - *Note that the rows of the item map are hyperlinks; clicking on one will take you directly to that item and page.*
  - Demonstrate.
    - *To close the item map, click on the X at the top left of the item map.*
    - *You can also navigate through the items by clicking on PREVIOUS and NEXT at the top right corner of the screen.*
  - Demonstrate clicking on PREVIOUS and NEXT.
    - *You can also click on any area of the progress bar that runs across the top of the screen.*
  - Demonstrate clicking on places along the bar.
- 

## **SETTING A BOOKMARK**

- *When you are ready to set a bookmark, you can do so by clicking on the blue SET A BOOKMARK button at the top of the page.*
- Demonstrate as you talk through this part.

- *A pop-up menu will require that you select a level.*
  - *Choose Level 2, 3, or 4, and click on SET BOOKMARK.*
  - *Notice that the bookmark appears on the progress bar.*
  - *If you change your mind about a bookmark and want to remove it, you can do so by navigating to the bookmarked item.*
  - *Demonstrate as you talk through this part.*
    - *You will see a bookmark button next to the page number.*
    - *Click on the x...*
    - *And then click YES to confirm.*
- 

## **SUBMITTING BOOKMARKS**

- *Once you have set all the bookmarks for this form, you can submit your work by clicking on SUBMIT RESPONSE.*
    - *You will be reminded that you will not be able to change your responses once you have submitted.*
    - *You will see a confirmation of your submission at the bottom right of your screen.*
    - *Remember, you can review submitted forms, but you cannot modify the answers.*
  - *Bookmarks are not finalized until you submit your response; however, you may navigate away from the page at any time, and your work will be automatically saved.*
- 

## **NOTES**

- *Finally, let's look back up at the top of the page, at this light band that says, ENTER NOTE.*
  - *You may want to keep track of your thoughts as you proceed through this process.*
  - *You can enter notes for any item in the space provided.*
- *Demonstrate as you talk through this part.*
  - *These notes are saved automatically and are only visible to you, the facilitators, and other MI staff.*
- *Okay, are there any questions about navigating the OIBs?*
- *Then let's go back to the Form List and take a look at some of the other panelist tasks.*
- *Go back to Form List page.*

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5. **OTHER FORMS:** Open and describe Practice Round, Readiness Form, and Evaluation Form.

- *Any questions?*

## **Draft Threshold Achievement Level Descriptors**

In preparing for standards validation and standard setting, facilitators and panelists reviewed existing range achievement level descriptors (ALDs) and created threshold ALDs by adding, deleting, or modifying words and phrases. The threshold ALDs presented on the following pages contain an array or markup techniques employed by the various panels. The purpose of presenting these threshold ALDs in their marked-up condition is to initiate a process in which MI, edCount, and LDOE staff will interact to polish and publish finished, official threshold ALDs for the LEAP Connect tests.

## Draft Threshold ALDs for English Language Arts

### ELA Grade 3 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the central message, lesson, or moral within a literary text, folktale, or fable</li> <li>determine the main idea and identify supporting details in informational text</li> <li>determine the main idea and accurate details of visually presented information</li> <li>identify the purpose of text features in informational text</li> <li>use information from charts, maps, graphs, diagrams, photographs, or timelines in informational text to answer basic detail questions</li> <li>use context to identify the meaning of words, phrases, or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the central message, lesson, or moral within a literary text, folktale, or fable</li> <li>use details from a literary text to answer basic inferential questions</li> <li>determine the main idea and identify supporting details in informational text</li> <li>determine the main idea of visually presented information</li> <li>identify the purpose of text features in informational text</li> <li>use information from charts, maps, graphs, diagrams, photographs, or timelines in informational text to answer basic detail questions</li> <li>use context to identify the meaning of words, phrases, or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the central message, lesson, or moral within a literary text, folktale, or fable</li> <li>determine the main idea from/when given identify supporting details in informational text</li> <li>determine the main idea of visually presented information</li> <li>identify the purpose of text features in informational text</li> <li>use information from charts, maps, graphs, diagrams, photographs, or timelines in informational text to answer questions</li> <li>use context to identify the meaning of words, phrases, or multiple meaning words</li> </ul>
<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
<ul style="list-style-type: none"> <li>use details from a literary text to answer specific basic questions</li> <li>identify describe the relationship between characters, settings, events, or conflicts in literary text</li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify simple words (i.e., words with a consonant at the beginning, a consonant at the end, and a short vowel in the middle)</li> </ul>	<ul style="list-style-type: none"> <li>use details from a literary text to answer specific and basic inferential questions</li> <li>identify describe the relationship between characters, settings, events, or conflicts in literary text</li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify grade level words</li> </ul>	

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>Low text complexity:</b></p>	<p><b>Moderate text complexity:</b></p>	<p><b>High text complexity:</b></p>
<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>with support, identify elements of a narrative text to include beginning, middle, and end</li> <li>identify the category related to a set of facts</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate limited development of the task, purpose, or audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some/limited organization (e.g., introduction, body, and or conclusion)</li> <li>includes some/limited related ideas (e.g., details, activities)</li> <li>shows some/limited command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify an illustration to convey meaning in a basic informational text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate satisfactory development of the task, purpose, or audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows minimal logical organization of the body with introduction or conclusion (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details, activities) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate effective development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows minimal logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details, activities) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>

## ELA Grade 4 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• <del>identify</del> <del>determine</del> the theme of literary text <del>and identify</del> <del>supportive details</del></li> <li>• <del>describe</del> <del>identify</del> character traits using text-based details in literary text</li> <li>• <del>determine</del> <del>identify</del> the main idea of informational text</li> <li>• locate information in charts, graphs, diagrams, or timelines</li> <li>• use information from charts, graphs, diagrams, or timelines in informational text to answer <b>basic</b> questions</li> <li>• <del>use general academic words or domain-specific words or phrases</del></li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• <del>determine</del> <del>identify</del> the theme of literary text <del>and identify</del> <del>supportive details</del></li> <li>• <del>determine</del> <del>identify</del> the main idea of informational text</li> <li>• <del>explain how the information provided in charts, graphs, diagrams, or timelines contributes to an understanding of informational text</del></li> <li>• use information from charts, graphs, diagrams, or timelines in informational text to answer <b>basic</b> questions</li> <li>• <del>use general academic words or domain-specific words or phrases</del></li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• <del>determine</del> <del>identify</del> the theme of literary text <del>and identify</del> <del>supportive details</del></li> <li>• <del>determine</del> <del>identify</del> the main idea of informational text</li> <li>• <del>explain how the information provided in charts, graphs, diagrams, or timelines contributes to an understanding of informational text</del></li> <li>• use information from charts, graphs, diagrams, or timelines in informational text to answer <b>basic</b> questions</li> <li>• <del>use general academic words or domain-specific words</del></li> </ul>
<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
<ul style="list-style-type: none"> <li>• use details and examples from a literary text to answer <b>specific basic</b> questions</li> <li>• use context <del>from pictures</del> to identify the meaning of words, <del>multiple meaning words, or words showing shades of meaning</del></li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify simple words (i.e., words with a consonant at the beginning, a consonant at the end, and a short vowel in the middle)</li> </ul>	<ul style="list-style-type: none"> <li>• use details and examples from a literary text to answer <b>specific basic</b> questions</li> <li>• <del>identify</del> <del>describe</del> character traits using text-based details in literary text</li> <li>• use context <del>from pictures</del> to identify the meaning of words, <del>multiple meaning words, or words showing shades of meaning</del></li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• <del>identify grade-level words</del></li> </ul>	



Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• <b>with support</b> identify elements of a narrative text to include beginning, middle, and end</li> <li>• identify a <b>simple</b> concluding sentence <b>or phrase</b> related to information in explanatory text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <b>limited</b> development of the task, <b>purpose, and audience.</b></p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>• includes some/<b>limited</b> organization (e.g., <b>introduction, body, and introduction and/or conclusion</b>)</li> <li>• includes some <b>simple</b> related ideas (e.g., details, activities)</li> <li>• shows some/<b>limited</b> command of the use of conventions. (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify a text feature (e.g., headings, charts, or diagrams) <b>to present information in explanatory text</b></li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <b>satisfactory</b> development of the task, <b>purpose, and audience.</b></p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>• follows <b>minimal</b> logical organization (e.g., <b>introduction, body, and introduction and/or conclusion</b>)</li> <li>• includes <b>simple</b> ideas (e.g., details, activities) that <b>contribute relate</b> to the meaning</li> <li>• shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <b>effective</b> development of the task, <b>purpose, and audience.</b></p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>• follows <b>minimal</b> logical organization (e.g., <b>introduction, body, and introduction and/or conclusion</b>)</li> <li>• includes <b>and elaborates simple</b> ideas (e.g., details, activities) that more fully develop the meaning</li> <li>• shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>

## ELA Grade 5 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>compare characters, settings, or events in literary text</li> <li>determine the main idea and identify supporting details in informational text</li> <li>use details from the text to support an author’s point in informational text</li> <li>compare and contrast how information and events are presented in two informational texts</li> <li>use context to identify the meaning of words or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>compare characters, settings, or events in literary text</li> <li>determine the main idea and identify supporting details in informational text</li> <li>use details from the text to support an author’s point in informational text</li> <li>compare and contrast how information and events are presented in two informational texts</li> <li>use context to identify the meaning of words or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>compare characters, settings, or events in literary text</li> <li>determine the main idea and identify supporting details in informational text</li> <li>use details from the text to support an author’s point in informational text</li> <li>compare and contrast how information and events are presented in two informational texts</li> <li>use context to identify the meaning of words or multiple meaning words</li> </ul>
<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
<ul style="list-style-type: none"> <li>summarize a literary text from beginning to end</li> <li>use details or examples from a literary text to answer specific questions</li> </ul>	<ul style="list-style-type: none"> <li>summarize a literary text from beginning to end</li> <li>use details or examples from a literary text to answer specific questions</li> </ul>	

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of a narrative text to include beginning, middle, and end</li> <li>identify a sentence that is organized logically to convey information</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., details, activities)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>support an explanatory text topic with information related to the topic (e.g., facts, definitions, concrete details, quotations, or examples)</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details, activities) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details, activities) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>

## ELA Grade 6 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>summarize a literary text from beginning to end <b>without including</b> <b>personal opinions</b></li> <li>support inferences or conclusions about characters using details in literary text</li> <li>use details from the text to elaborate a key individual, event, or idea in informational text</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>summarize a literary text from beginning to end without including personal opinions</li> <li>support inferences or conclusions about characters using details in literary text</li> <li>summarize an informational text without including personal opinions</li> <li>use details from the text to elaborate a <b>key individual, event, or idea</b> in informational text</li> <li>use evidence from the text to support an author's claim in informational text</li> <li>summarize information presented in two informational texts</li> <li>use <b>domain-specific words</b> accurately</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>summarize a literary text from beginning to end without including personal opinions</li> <li>support inferences or conclusions about characters using details in literary text</li> <li>use details from the text to elaborate a key individual, event, or idea in informational text</li> <li>use evidence from the text to support an author's claim in informational text</li> <li>use general academic or domain-specific words or phrases accurately</li> </ul>
<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
<ul style="list-style-type: none"> <li>use details or examples from a literary text to answer specific questions</li> <li>use context to identify the meaning of words or multiple meaning words</li> </ul>	<ul style="list-style-type: none"> <li>use details or examples from a literary text to answer specific questions</li> <li>use context to identify the meaning of words or multiple meaning words</li> </ul>	

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of an informative/explanatory text to include introduction, body, and conclusion</li> <li>identify the next event in a brief narrative</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., details)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify transition words, phrases, or clauses to convey sequence or signal shifts from one timeframe or setting to another</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>

ELA Grade 7 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
Low text complexity:	Moderate text complexity:	High text complexity:
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the relationship between individuals, events, or <b>ideas</b> in an informational text, when broken into steps (i.e., first identify the event before moving to relationships)</li> <li>use evidence from the text to support an author’s claim in informational text</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>use provided highlighted details to support/understand an <b>inference</b>, conclusion, or summary from informational text</li> <li>use provided details to explain how the interactions between individuals, events or ideas in informational texts are influenced by each other</li> <li>use provided evidence from the text to support an author’s claim in informational text</li> <li>compare or contrast how two authors write about the same topic in informational texts</li> <li>use context to identify the meaning of grade-level words or phrases</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>use provided details to support an inference, conclusion, or summary from informational text</li> <li>use provided details to explain how the interactions between individuals, events or ideas in informational texts are influenced by each other</li> <li>use provided evidence from the text to support an author’s claim in informational text</li> <li>compare and contrast how two authors write about the same topic in informational texts</li> <li>use context to identify the meaning of grade-level words or phrases</li> </ul>
<p><b>AND with Moderate text complexity:</b></p>	<p><b>AND with High text complexity:</b></p>	
<ul style="list-style-type: none"> <li>use provided details to support the theme or central idea from literary text</li> <li>use provided details to support conclusions or summaries of a literary text</li> </ul>	<ul style="list-style-type: none"> <li>use provided details to support the theme or central idea from literary text</li> <li>use provided details to support conclusions or summaries of a literary text</li> </ul>	

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of an informative/explanatory text to include introduction, body, and conclusion</li> <li>identify details that describe experiences or events</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and/or conclusion) – for threshold student may include body and partial introduction and/or conclusion</li> <li>when provided details, includes some related ideas (e.g., details)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a sentence that provides a conclusion in narrative text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory development of the task, purpose, and audience.</u></p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>when provided details, includes <u>ideas (e.g., details) that contribute to the meaning</u></li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li><u>includes and elaborates ideas (e.g., details) that more fully develop the meaning</u></li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>

**ELA Grade 8 Threshold ALDs**

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
Low text complexity:	Moderate text complexity:	High text complexity:
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the relationship between individuals, events, or <b>ideas</b> in an informational text, when broken into steps (i.e., first identify the event before moving to relationships)</li> <li>use evidence from the text to support an author’s claim in informational text</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>use provided highlighted details to support/understand an <b>inference</b>, conclusion, or summary from informational text</li> <li>use provided details to explain how the interactions between individuals, events or ideas in informational texts are influenced by each other</li> <li>use provided evidence from the text to support an author’s claim in informational text</li> <li>compare or contrast how two authors write about the same topic in informational texts</li> <li>use context to identify the meaning of grade-level words or phrases</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>use provided details to support an inference, conclusion, or summary from informational text</li> <li>use provided details to explain how the interactions between individuals, events or ideas in informational texts are influenced by each other</li> <li>use provided evidence from the text to support an author’s claim in informational text</li> <li>compare and contrast how two authors write about the same topic in informational texts</li> <li>use context to identify the meaning of grade-level words or phrases</li> </ul>
<p><b>AND with Moderate text complexity:</b></p>	<p><b>AND with High text complexity:</b></p>	
<ul style="list-style-type: none"> <li>use provided details to support the theme or central idea from literary text</li> <li>use provided details to support conclusions or summaries of a literary text</li> </ul>	<ul style="list-style-type: none"> <li>use provided details to support the theme or central idea from literary text</li> <li>use provided details to support conclusions or summaries of a literary text</li> </ul>	



Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of an informative/explanatory text to include introduction, body, and conclusion</li> <li>identify details that describe experiences or events</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and/or conclusion) – for threshold student may include body and partial introduction and/or conclusion</li> <li>when provided details, includes some related ideas (e.g., details)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a sentence that provides a conclusion in narrative text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory development of the task, purpose, and audience.</u></p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>when provided details, includes <u>ideas (e.g., details) that contribute to the meaning</u></li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li><u>includes and elaborates ideas (e.g., details) that more fully develop the meaning</u></li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>

**ELA High School Threshold ALDs**

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
Low text complexity:	Moderate text complexity:	High text complexity:
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify details to support an inference, a conclusion, or a summary of the plot, purpose, or theme</li> <li>• identify a conclusion from an informational text</li> <li>• identify key details that support the development of a central idea of an informational text</li> <li>• use details presented in two informational texts to answer a question or solve a problem</li> <li>• identify the author’s purpose in a text</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• use details to support an inference, a conclusion, or a summary of the plot, purpose, or theme</li> <li>• use details to support an inference, conclusion, or summary presented in informational text</li> <li>• identify key details that support the development of a central idea of an informational text</li> <li>• use details presented in two informational texts to answer a question or solve a problem</li> <li>• identify specific words within texts that supports the author’s purpose</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• use details to support an inference, a conclusion, or a summary of the plot, purpose, or theme</li> <li>• use details to support an inference, conclusion, or summary presented in informational text</li> <li>• use key details as text evidence to support the development of a central idea of an informational text</li> <li>• use details presented in two informational texts to answer a question or solve a problem</li> <li>• explain why an author uses specific word choices within texts</li> </ul>
<p><b>AND with Moderate text complexity:</b></p> <ul style="list-style-type: none"> <li>• identify the overall structure and meaning of the text</li> <li>• determine an author's point of view about a topic or purpose in informational text</li> <li>• use context to identify the meaning of grade-level words or phrases</li> </ul>	<p><b>AND with High text complexity:</b></p> <ul style="list-style-type: none"> <li>• identify specific details in literary text that contribute to the overall structure and meaning of the text</li> <li>• determine an author's point of view about a topic or purpose in informational text</li> <li>• use context to identify the meaning of grade-level words or phrases</li> </ul>	

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of an argument to include introduction, body, and conclusion</li> <li>identify how to group information for a specific text structure</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., facts/examples)</li> <li>shows some command of the use of conventions. (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify relevant information to address a given topic and support the purpose of a text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., facts/examples) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., facts/examples) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>

## Draft Threshold ALDs for Mathematics

### Math Grade 3 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve addition and subtraction word problems</li> <li>● identify an arrangement of objects which represents factors in a problem</li> <li>● solve multiplication equations in which both numbers are less than five</li> <li>● identify the first five multiples of 2 through 5</li> <li>● identify a set of objects as nearer to 1 or 10</li> <li>● identify a representation of the area of a rectangle</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve addition and subtraction word problems</li> <li>● Identify the inverse operation to check correctness of an answer in the context of an addition or subtraction scenario or word problem</li> <li>● solve multiplication equations in which both numbers are five or less</li> <li>● determine the first five multiples of 2 through 5</li> <li>● match fraction models to unit fractions</li> <li>● compare fractions with different numerators and the same denominator</li> <li>● identify a bar graph based on an organized list of data</li> <li>● count unit squares to compute the area of a rectangle</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve addition and subtraction word problems</li> <li>● check the accuracy of an answer in the context of an addition, subtraction, or multiplication scenario</li> <li>● solve multiplication equations in which both numbers are equal to or less than ten</li> <li>● identify multiplication patterns</li> <li>● match fraction models to unit fractions</li> <li>● compare fractions with different numerators and the same denominator</li> <li>● transfer data from an organized list to a bar graph</li> </ul>
<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
<ul style="list-style-type: none"> <li>● identify geometric figures which are divided into equal parts</li> </ul>	<ul style="list-style-type: none"> <li>● identify geometric figures which are divided into equal parts</li> <li>●</li> </ul>	

## Math Grade 4 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>Low task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● match a model to a multiplication expression using two single-digit numbers</li> <li>● identify a model of a multiplicative comparison</li> <li>● show division of objects into equal groups using visual models</li> <li>● round numbers to nearest 10 or 100</li> <li>● differentiate parts and wholes</li> <li>● identify a rectangle with the larger or smaller perimeter</li> </ul>	<p><b>Moderate task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems</li> <li>● show division of objects into equal groups using visual models and numerals</li> <li>● round numbers to nearest 10, 100, or 1000</li> <li>● sort a set of 2-dimensional shapes</li> <li>● compute the perimeter of a rectangle</li> <li>● organize data into graphs</li> <li>● interpret an equation with or without a model as a multiplicative comparison</li> </ul>	<p><b>High task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems</li> <li>● show division of objects into equal groups using number sentences</li> <li>● use place value to round numbers up to six digits</li> <li>● compare two fractions with different denominators</li> <li>● sort a set of 2-dimensional shapes</li> <li>● transfer data to a graph</li> <li>● identify equivalent fractions</li> <li>● solve a multiplicative comparison word problem using up to two-digit numbers</li> </ul>
<p><b>AND with Moderate task complexity:</b></p> <ul style="list-style-type: none"> <li>● identify equivalent fractions using models</li> <li>● select a 2-dimensional shape with a given attribute</li> </ul>	<p><b>AND with High task complexity:</b></p> <ul style="list-style-type: none"> <li>● check the correctness of an answer in the context of a scenario</li> </ul>	

**Math Grade 5 Threshold ALDs**

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify if the total will increase or decrease when combining sets</li> <li>● perform basic operations with decimals</li> <li>● identify a symbolic representation of the addition of two fractions</li> <li>● identify place values to the hundredths place</li> <li>● convert standard measurements with conversion chart</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems (one step)</li> <li>● perform basic operations with decimals</li> <li>● solve one-step word problems involving fractions with like denominators</li> <li>● identify place values to the hundredths place</li> <li>● locate a given point on a coordinate plane when given an ordered pair</li> <li>● convert standard measurements with conversion table</li> <li>● convert between minutes and hours with conversion table</li> <li>● make quantitative comparisons between data sets shown as bar graphs</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems (two steps)</li> <li>● perform operations with decimals</li> <li>● solve word problems involving fractions</li> <li>● locate a given point on a coordinate plane when given an ordered pair</li> <li>● convert standard measurements with conversion table</li> <li>● convert between minutes and hours</li> <li>● make quantitative comparisons between data sets shown as bar graphs</li> <li>● plot a given point on a coordinate plane when given an ordered pair</li> </ul>
<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
<ul style="list-style-type: none"> <li>● round whole numbers to nearest 100s and 1000s</li> </ul>	<ul style="list-style-type: none"> <li>● solve multiplication word problems (two steps)</li> <li>● plot a given point on a coordinate plane when given an ordered pair</li> </ul>	

**Math Grade 6 Threshold ALDs**

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● match a given ratio to a model</li> <li>● recognize a representation of the sum of two halves</li> <li>● identify a representation of a value less than zero</li> <li>● identify the median or the equation needed to determine the mean of a set of data with example</li> <li>● compute the area of a rectangle</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● perform basic operations using up to three-digit numbers</li> <li>● solve real-world measurement problems involving unit rates</li> <li>● identify positive and negative values on a number line</li> <li>● determine the meaning of a value from a set of positive and negative integers</li> <li>● solve word problems with expressions including variables</li> <li>● compute the area of a parallelogram.</li> <li>● identify the median or the equation needed to determine the mean of a set of data with example</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve real-world measurement problems involving unit rates and ratios</li> <li>● identify positive and negative values on a number line</li> <li>● solve word problems with expressions including variables</li> <li>● compute the area of a parallelogram and a triangle</li> <li>● use measures of central tendency to interpret data with example</li> </ul>
<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
<ul style="list-style-type: none"> <li>● perform one-step operations with two decimal numbers</li> <li>● solve real-world measurement problems involving unit rates</li> </ul>	<ul style="list-style-type: none"> <li>● solve word problems using a percent</li> <li>● solve word problems using ratios and rates</li> </ul>	

## Math Grade 7 ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>Low task complexity:</b></p> <p>The student is able to:</p> <ul style="list-style-type: none"> <li>identify the meaning of an unknown in a modeled equation</li> <li>describe a directly proportional relationship (i.e., increases or decreases)</li> <li>find the surface area of a three-dimensional right prism [Provide formula, provide labeled model of a cube]</li> </ul>	<p><b>Moderate task complexity:</b></p> <p>The student is able to:</p> <ul style="list-style-type: none"> <li>solve division problems with positive/negative integers [Using models and quotients between -5 and 5]</li> <li>solve word problems involving ratios</li> <li>use a proportional relationship to solve a percentage problem [set up the proportion without solving]</li> <li>identify proportional relationships between quantities represented in a table</li> <li>identify unit rate (constant of proportionality) in tables and graphs of proportional relationships</li> <li>compute the area of a circle [Provided the formula for area, set up expression in terms of pi]</li> <li>find the surface area of a three-dimensional right prism [provided the formula, set up the expression for prisms but solve for a cube]</li> </ul>	<p><b>High task complexity:</b></p> <p>The student is able to:</p> <ul style="list-style-type: none"> <li>solve division problems with positive/negative integers [using models and quotients greater than +/- -6]</li> <li>solve word problems involving ratios</li> <li>identify proportional relationships between quantities represented in a table</li> <li>compute the area of a circle [provided the formula]</li> <li>find the surface area of a three-dimensional right prism [provided the formula]</li> <li>interpret graphs to qualitatively contrast data sets</li> </ul>
<p><b>AND with Moderate task complexity:</b></p> <ul style="list-style-type: none"> <li>solve multiplication problems with positive/negative integers [in multiples of +/- 2, 5, 10]</li> <li>interpret graphs to qualitatively contrast data sets</li> <li>identify a representation which represents a negative number and its multiplication or division by a positive number</li> </ul>	<p><b>AND with High task complexity:</b></p> <ul style="list-style-type: none"> <li>solve multiplication problems with positive/negative integers [in the range of -25 and 25 and multiples of 10] with models</li> <li>evaluate variable expressions that represent word problems -with models</li> </ul>	



**Math Grade 8 Threshold ALDs**

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>Low task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the solution to an equation which contains a variable [using substitution]</li> <li>identify the y-intercept of a linear graph</li> <li>match a given relationship between two variables to a model</li> <li>identify a data display that represents a given situation</li> <li>identify an attribute of a cylinder</li> </ul>	<p><b>Moderate task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>locate approximate placement of an irrational number on a number line [when provide the approximate value of the irrational number.]</li> <li>solve a linear equation which contains a variable</li> <li>identify the relationship shown on a linear graph</li> <li>calculate slope of a positive linear graph</li> <li>compute the change in area of a figure when its dimensions are changed [given the dimensions of the changed figure]</li> <li>solve for the volume of a cylinder [provided the formula and an example]</li> <li>plot provided data on a graph</li> </ul>	<p><b>High task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>locate approximate placement of an irrational number on a number line [using a number line including negative numbers]</li> <li>solve a linear equation which contains a variable [in real-world context]</li> <li>identify the relationship shown on a linear graph [describe the relationship]</li> <li>compute the change in area of a figure when its dimensions are changed</li> <li>plot provided data on a graph [given an incomplete set of data]</li> <li>interpret data presented in graphs to identify associations between variables</li> </ul>
<p><b>AND with Moderate task complexity:</b></p>	<p><b>AND with High task complexity:</b></p>	
<ul style="list-style-type: none"> <li>identify congruent figures [when provided the definition]</li> <li>use properties of similarity to identify similar figures [when provided the definition]</li> <li>interpret data tables to identify the relationship between variables</li> </ul>	<ul style="list-style-type: none"> <li>interpret data tables to identify the relationship between variables</li> <li>use properties of similarity to identify similar figures</li> <li>identify congruent figures</li> </ul>	

## Math High School Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>Low task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify variable expressions which represent word problems</li> <li>identify the hypotenuse of a right triangle [with definition of hypotenuse provided]</li> <li>identify the greatest or least value in a set of data shown on a number line</li> <li>calculate the mean and median of a set of data [with whole number answers and median has an odd number of data. Definitions and sample problem provided]</li> <li>describe the rate of change qualitatively</li> </ul>	<p><b>Moderate task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify [use] variable expressions which represent word problems</li> <li>solve real-world measurement problems that require unit conversions [provided the conversion equation]</li> <li>find the missing attribute of a three-dimensional figure [with the formula provided/conversion chart]</li> <li>determine two similar right triangles when a scale factor is given [whole number scales only with an example]</li> <li>calculate the mean and median of a set of data [with the definition of mean/median provided and a sample problem]</li> <li>solve an equation for a specific variable [one step]</li> </ul>	<p><b>High task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify [develop] variable expressions which represent word problems</li> <li>solve real-world measurement problems that require unit conversions [provided a conversion chart]</li> <li>determine two similar right triangles when a scale factor is given [fraction/decimal scales with an example]</li> <li>select the graphical representation of a linear model using a data table</li> <li>calculate the mean, median, and range of a set of data [with the definition of measures provided]</li> <li>select the graphical representation of a linear model given a scenario</li> </ul>
<p><b>AND with Moderate task complexity:</b></p> <ul style="list-style-type: none"> <li>identify the linear representation of a provided real-world situation [in the form of a graph with an example provided]</li> <li>use an equation or a linear graphical representation to solve a word problem</li> <li>solve equations with two variables using a graph [when the value for one variable is provided]</li> <li>solve for the volume of a cube [with the formula provided]</li> </ul>	<p><b>AND with High task complexity:</b></p> <ul style="list-style-type: none"> <li>identify the linear representation of a provided real-world situation [in the form of a graph]</li> <li>use an equation or a linear graphical representation to solve a word problem</li> </ul>	

## Science Grade 4 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
Low task complexity:	Moderate task complexity:	High task complexity:
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify the fastest or slowest moving object based on respective speeds</li> <li>• Identify what form of energy is produced by a device (e.g., sound, light, heat, motion, electricity)</li> <li>• identify the function of various external animal structures</li> <li>• recognize that rocks and soil can be moved by wind, water, and ice</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify a model which shows that energy can be converted from one form to another</li> <li>• identify recognize (scaffolds) the questions that can be investigated about the changes in energy that occur when objects collide</li> <li>• identify the initial and or final forms of energy given a scenario model related to energy conversion</li> <li>• identify the plant or animal structure that best meets the plant's or animal's needs in a given scenario</li> <li>• given a model/visual, identify changes to the landscape caused by living things</li> <li>• identify a source of erosion or weathering that can cause changes to the landscape given a model</li> <li>• match a natural hazard to a solution that humans use to reduce the impact of natural hazards</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify the questions that can be investigated about the transfer of energy from a moving object to another object that it collides with</li> <li>• identify major internal and external structures of organisms that are critical for survival</li> <li>• predict how living things will affect the shape of a landscape given a scenario</li> <li>• describe identify a change that occurred in an environment based on the patterns/evidence (e.g., fossils) found in the rock layers</li> <li>• use data to identify the cause and effect relationships between weathering or erosion and land with or without vegetation</li> <li>• choose the design that would lessen the impact of a given natural hazard</li> </ul>

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>AND with Moderate task complexity:</b></p>	<p><b>AND with High task complexity:</b></p>	
<ul style="list-style-type: none"> <li>● use <b>data model</b> related to the speed of objects to <b>compare</b> <b>identify differences</b> the energy each possesses</li> <li>● recognize that moving objects contain energy</li> <li>● recognize that the faster an object moves, the more energy it has</li> <li>● identify amplitude <b>and or</b> wavelength using a model</li> <li>● identify how animals use their senses to help them survive</li> <li>● choose a piece of evidence that supports an explanation of how animals use their senses to respond to their environment</li> <li>● identify the locations of different water features of Earth given a map</li> <li>● identify the locations of different land features of Earth given a map</li> </ul>	<ul style="list-style-type: none"> <li>● use <b>data model</b> to identify when energy is greatest or least for similar objects moving at different speeds</li> <li>● predict an object's motion based on the amplitude of the wave</li> <li>● use <b>data model</b> to identify the cause and effect relationships between weathering or erosion and land with or without vegetation</li> <li>● identify <b>patterns similarities</b> in the location of Earth features</li> <li>● identify a human solution to reduce the impact of a natural Earth process on humans</li> </ul>	

Science Grade 8 Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
<p><b>Low task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify <b>an</b> examples of chemical changes <b>compared to</b> or physical changes</li> <li>use a model to identify that parents and offspring may have different traits</li> <li>use a map of natural resources to <b>recognize</b> <b>identify</b> that natural resources are distributed throughout Earth</li> </ul>	<p><b>Moderate task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li><b>contrast</b> <b>identify</b> characteristics of natural and synthetic materials</li> <li>identify a device that maximizes or minimizes thermal energy transfer using data</li> <li>recognize that similarities in patterns of appearance in embryos at the same stage of development across species is evidence of relationships</li> <li><b>explain</b> <b>identify</b> relationships among species by organizing displays of pictorial data of embryos</li> </ul>	<p><b>High task complexity:</b></p> <p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a component(s) that energy will be transferred to or from to solve a problem</li> <li>identify environmental factors that can influence an organism's growth</li> <li><b>demonstrate an understanding</b> <b>given a scenario or model,</b> <b>identify</b> that genetic variations in specific traits may occur as a result of small changes to genetic material</li> <li>select an appropriate representation as embryological evidence of relationships among species</li> <li>identify the relative age of fossils based on their locations in a column of rock layers</li> <li>use data to <b>explain</b> <b>identify</b> why specific resources are limited</li> </ul>
<p><b>AND with Moderate task complexity:</b></p> <ul style="list-style-type: none"> <li>identify <b>an</b> examples of chemical reactions that release energy (e.g., heat or light)</li> <li>use a model of energy movement through the Earth's systems to identify the role of the Sun (i.e., heat source)</li> <li>use a model of energy movement with the Sun as the primary energy source to identify relationships between components of Earth's systems</li> </ul>	<p><b>AND with High task complexity:</b></p> <ul style="list-style-type: none"> <li>identify the natural resources used to make a synthetic product</li> <li>use presented evidence to determine if a reaction has released or absorbed thermal energy</li> <li>identify that thermal energy is transferred from hotter objects to colder objects</li> <li><b>support</b> <b>identify</b> an explanation of evolutionary relationships between living and fossil organisms with evidence</li> </ul>	

	<ul style="list-style-type: none"> <li>• describe identify how heat from Earth's core powers the rock cycle</li> </ul>
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## High School Science Threshold ALDs

Level 2: Near Goal	Level 3: At Goal	Level 4: Above Goal
Low task complexity:	Moderate task complexity:	High task complexity:
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>• match a part in a body system to its function [provided an example]</li> <li>• identify the function of an animal's response to external stimuli</li> <li>• identify data related to the number of species in a stable ecosystem [with visual representation]</li> <li>• identify that siblings can have different characteristics even though they have the same parent [provide definitions i.e.: allele]</li> <li>• use a model to identify the likelihood of a particular trait in an offspring [provided a partially completed model]</li> <li>• recognize that gradual change in the environment can cause changes in organisms</li> </ul> <p><b>AND with Moderate task complexity:</b></p> <ul style="list-style-type: none"> <li>• identify the correct sequence of steps necessary to prevent an infection [in pictorial form]</li> <li>• identify how biological or physical changes affect stability and change (i.e., numbers and/or types of organisms living in the ecosystem) in ecosystems</li> <li>• classify human activities on the Earth's environment as having either a negative or positive effect [provided a partially completed classification]</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify the function of a body system and how it helps an animal to survive [provide an example before the question]</li> <li>• predict what will happen to specific species over time based on an environmental change [in pictorial form with a description]</li> <li>• use data to identify how a change affects the populations in an ecosystem [provided in graph/table form]</li> <li>• use a [completed] Punnett square to identify the probability (i.e., two out of four) of a particular trait in an offspring</li> <li>• recognize the cause and effect relationship between a naturally occurring change in the environment and the expression of a trait in a species [provided an example model]</li> </ul> <p><b>AND with High task complexity:</b></p> <ul style="list-style-type: none"> <li>• identify the best plan to gather information about how an organism responds to changes in its external environment [provided an example of a plan]</li> <li>• identify human activities that can have a negative effect on the Earth and then [OR for threshold] identify a solution that reduces its impact on the environment</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>• given a scenario, determine a way to design an investigation related to how an organism responds to changes in its environment</li> <li>• modify (e.g., improve) a solution which helps protect Earth's environment</li> <li>• identify examples of phenotypes shown in a family pedigree [with definitions provided]</li> <li>• explain why there is an increased probability of individual organisms exhibiting an advantageous trait over time [identify those with an advantageous trait]</li> <li>• determine which factor(s) resulted in a specific adaptation within a species</li> <li>• explain how gradual change in the environment can cause changes in organisms [identify the starting point of noticing the change]</li> <li>• predict what will happen to specific species over time based on an environmental change [presented in a graph]</li> </ul>

- describe [identify] how people can help protect the Earth's environment and biodiversity
- identify a reason why two siblings can have different characteristics even though they have the same parents
- complete a Punnett square [partially completed]

## Round 1 Cut Score Distributions

### Science Grade 4

Performance Level	Count	Minimum	Quartile 1	Quartile 3	Maximum	Median Cut	Percent At Or Above
Level 2	6	954	984	990	1002	990	79.1%
Level 3	6	1002	1003	1044	1044	1029	57.2%
Level 4	6	1062	1072	1074	1091	1074	31.8%

### Science Grade 8

Performance Level	Count	Minimum	Quartile 1	Quartile 3	Maximum	Median Cut	Percent At Or Above
Level 2	6	992	996	1007	1010	996	90.6%
Level 3	6	1021	1026	1033	1034	1026	67.6%
Level 4	6	1046	1046	1048	1057	1047	55.9%

### Science Grade HS

Performance Level	Count	Minimum	Quartile 1	Quartile 3	Maximum	Median Cut	Percent At Or Above
Level 2	6	984	984	994	1014	994	76.7%
Level 3	6	1010	1025	1035	1051	1028	58.5%
Level 4	6	1060	1060	1080	1085	1069	30.3%



**Math Grade HS**

<b>Performance Level</b>	<b>Count</b>	<b>Minimum</b>	<b>Quartile 1</b>	<b>Quartile 3</b>	<b>Maximum</b>	<b>Median Cut</b>	<b>Percent At Or Above</b>
Level 2	6	941	971	976	985	973.5	82.1%
Level 3	6	971	989	1026	1030	1023	52.2%
Level 4	6	1043	1049	1071	1086	1064	31.2%

**Round 2 Cut Score Distributions****Science Grade 4**

<b>Performance Level</b>	<b>Count</b>	<b>Minimum</b>	<b>Quartile 1</b>	<b>Quartile 3</b>	<b>Maximum</b>	<b>Median Cut</b>	<b>Percent At Or Above</b>
Level 2	6	984	990	990	1002	990	79.1%
Level 3	6	1029	1029	1044	1044	1044	47.4%
Level 4	6	1072	1074	1074	1085	1074	31.8%

**Science Grade 8**

<b>Performance Level</b>	<b>Count</b>	<b>Minimum</b>	<b>Quartile 1</b>	<b>Quartile 3</b>	<b>Maximum</b>	<b>Median Cut</b>	<b>Percent At Or Above</b>
Level 2	6	992	996	996	1007	996	90.6%
Level 3	6	1026	1026	1030	1033	1028	67.6%
Level 4	6	1046	1048	1057	1057	1048	55.9%

**Science Grade HS**

<b>Performance Level</b>	<b>Count</b>	<b>Minimum</b>	<b>Quartile 1</b>	<b>Quartile 3</b>	<b>Maximum</b>	<b>Median Cut</b>	<b>Percent At Or Above</b>
Level 2	6	984	984	994	1014	994	76.7%
Level 3	6	1025	1028	1035	1057	1031.5	51.7%
Level 4	6	1060	1060	1078	1078	1072	30.3%

**Math Grade HS**

<b>Performance Level</b>	<b>Count</b>	<b>Minimum</b>	<b>Quartile 1</b>	<b>Quartile 3</b>	<b>Maximum</b>	<b>Median Cut</b>	<b>Percent At Or Above</b>
Level 2	6	971	971	985	998	980.5	76.5%
Level 3	6	1009	1025	1030	1061	1025	52.2%
Level 4	6	1061	1067	1071	1086	1067	31.2%

## Appendix C. Evaluations

### Standards Validation

- English Language Arts Grades 3-4
- English Language Arts Grades 5-6
- English Language Arts Grades 7-8
- English Language Arts Grade HS
- Math Grades 3-4
- Math Grades 5-6
- Math Grades 7-8

### Standard Setting

- Science Grades 4/8
- Math/Science Grade HS

### Vertical Articulation

- English Language Arts
- Math
- Science

**Key:** SD = Strongly Disagree; D = Disagree; ? = Undecided; A = Agree; SA = Strongly Agree

## Standards Validation: English Language Arts Grades 3-4

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standards-validation process were articulated clearly.	0	0	0	3	3	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	1	2	3	83%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	3	3	100%
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	1	5	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	0	6	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	0	2	4	100%
I had the opportunity to ask questions about the test content.	0	0	1	0	5	83%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	2	4	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	2	4	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	0	6	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	1	5	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	1	0	1	4	83%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	2	4	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	1	5	100%

Statement	SD	D	?	A	SA	% A+SA
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	0	2	4	100%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	0	0	3	3	100%
The standards-validation process was fair.	0	0	2	1	3	67%
The standards-validation process was orderly.	0	0	0	3	3	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	5	1	100%
I have confidence in my group's final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	0	4	2	100%

**Comments**

We had to click back and forth between the ALD & OPLS. Sometimes we couldn't see the whole screen and had to ask the facilitator to move the screen up and down.

The final cut scores were all grounded in ALD's.

## Standards Validation: English Language Arts Grades 5-6

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standards-validation process were articulated clearly.	0	0	1	2	3	83%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	4	2	100%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	4	2	100%
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	1	5	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	1	5	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	0	3	3	100%
I had the opportunity to ask questions about the test content.	0	0	0	3	3	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	3	3	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	3	3	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	1	1	4	83%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	1	5	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	1	5	100%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	3	3	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	1	5	100%

Statement	SD	D	?	A	SA	% A+SA
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	0	3	3	100%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	0	1	2	3	83%
The standards-validation process was fair.	0	0	1	2	3	83%
The standards-validation process was orderly.	0	0	1	2	3	83%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	4	2	100%
I have confidence in my group's final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	2	2	2	67%

**Comments**

Yes, my bookmarks were within 1 point of the group's average recommended scores.

There seemed to be frustration among the presenters regarding technology usage and participants. This is known because two of the main presenters unknowingly joined our small group discussion and continued to discuss participants' technology struggles and confusion (i.e., "How many times did I explain that!?" or "I'm telling you, I've met with every participant and 80% have difficulty with technology." While the discussion was unprofessional, I understand that they were unaware that they were not "muted". Perhaps they will find humor in the mistake and will give "grace" in the future... especially when they have difficulty muting themselves.

## Standards Validation: English Language Arts Grades 7-8

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standards-validation process were articulated clearly.	0	0	0	0	5	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	2	3	100%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	1	4	100%
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	1	4	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	2	3	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	0	1	4	100%
I had the opportunity to ask questions about the test content.	0	0	0	1	4	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	1	4	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	1	4	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	2	3	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	1	4	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	0	5	100%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	0	5	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	1	4	100%



Statement	SD	D	?	A	SA	% A+SA
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	0	1	4	100%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	0	0	1	4	100%
The standards-validation process was fair.	0	0	0	1	4	100%
The standards-validation process was orderly.	0	0	0	1	4	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	1	4	100%
I have confidence in my group's final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	0	2	3	100%

**Comments**

Only reason I put agree on confidence in my group was because we had one member who seemed to have trouble bookmarking.

Observations of some of the participations gave me pause due to the diverse support needs of some of our students. Recommendations and changes are valid based upon actual students.

## Standards Validation: English Language Arts Grade HS

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standards-validation process were articulated clearly.	0	0	0	3	4	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	1	6	100%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	3	4	100%
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	0	7	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	0	7	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	0	2	5	100%
I had the opportunity to ask questions about the test content.	0	0	0	1	6	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	2	5	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	2	5	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	1	6	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	2	5	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	1	6	100%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	1	6	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	1	6	100%

Statement	SD	D	?	A	SA	% A+SA
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	1	1	5	86%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	1	1	1	4	71%
The standards-validation process was fair.	0	1	0	1	5	86%
The standards-validation process was orderly.	0	0	0	2	5	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	2	5	100%
I have confidence in my group’s final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	1	1	5	86%

**Comments**

I feel as if some students were not a part of the thinking process and with that thought in mind. Those students would need a lower cut off score. As an overall view the scores are correct.

I have confidence in my group final cut scores. I am glad to be a part of impacting cut scores  
This was an interesting and eye-opening task. I did not understand how difficult such tasks are.

## Standards Validation: Mathematics Grades 3-4

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standards-validation process were articulated clearly.	0	0	0	3	4	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	2	5	100%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	3	4	100%
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	4	3	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	3	4	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	1	2	4	86%
I had the opportunity to ask questions about the test content.	0	0	0	4	3	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	1	3	3	86%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	3	4	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	2	5	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	3	4	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	1	2	4	86%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	2	5	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	3	4	100%

Statement	SD	D	?	A	SA	% A+SA
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	1	2	4	86%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	0	2	2	3	71%
The standards-validation process was fair.	0	0	1	2	4	86%
The standards-validation process was orderly.	0	0	0	3	4	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	4	3	100%
I have confidence in my group’s final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	2	1	4	71%

**Comments**

My group mates and I were exact and nearly exact on the Level 2 cut scores for each test. We were close on Levels 2 and 3. I think this speaks to the level of experience we all have in special education and the level of expertise of each individual. Jami-Jon was awesome! Patricia was great! Though some moments were painful when some group mates were unmuted:), I enjoyed my experience today and learned a lot! I am grateful for this opportunity.

I believe my group did a good job at collaborating to finalize the cut scores. Everyone understood and explained using rational when we practiced. The input was meaningful and that gives me confidence that all participants have provided adequate cut scores for a session today.

I will use my participation in the Vertical Articulation Meeting to further evaluate my confidence in the final cut scores.

## Standards Validation: Math Grades 5-6

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standards-validation process were articulated clearly.	0	0	0	0	6	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	0	6	100%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	0	6	100%
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	0	6	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	0	6	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	0	0	6	100%
I had the opportunity to ask questions about the test content.	0	0	0	0	6	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	0	6	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	0	6	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	0	6	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	0	6	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	1	5	100%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	0	6	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	0	6	100%

Statement	SD	D	?	A	SA	% A+SA
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	0	0	6	100%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	0	0	0	6	100%
The standards-validation process was fair.	0	0	0	0	6	100%
The standards-validation process was orderly.	0	0	0	0	6	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	2	4	100%
I have confidence in my group's final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	0	0	6	100%

**Comments**

The range of scores were very close. This lets me know that our ratings have some validity. the final cut scores for my group were in line with what we discussed pertaining to the ALDs

## Standards Validation: Math Grades 7-8

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standards-validation process were articulated clearly.	0	0	0	1	6	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	1	6	100%
The specific tasks I was expected to fulfill as a standards-validation panelist were delineated clearly.	0	0	0	1	6	100%
I received training on how to navigate the standards-validation software (OPLS).	0	0	0	1	6	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	0	7	100%
I received training as part of the standards-validation meeting that familiarized me with the content of the test(s).	0	0	0	1	6	100%
I had the opportunity to ask questions about the test content.	0	0	0	0	7	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	0	7	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	0	7	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	0	7	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	0	7	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	0	7	100%
My facilitator was available and able to adequately answer my questions throughout the standards-validation meeting.	0	0	0	0	7	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	0	7	100%



Statement	SD	D	?	A	SA	% A+SA
I had the opportunity to ask questions and participate in discussions about the standards-validation results.	0	0	0	0	7	100%
The discussions of the standards-validation results helped me feel confident about the process and our collective recommendations.	0	0	0	0	7	100%
The standards-validation process was fair.	0	0	0	0	7	100%
The standards-validation process was orderly.	0	0	0	0	7	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	0	7	100%
I have confidence in my group's final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	0	0	7	100%

**Comments**

I was honored to be on this committee. It was a learning experience and helped me learn from other teachers across the state. I hope we accomplished things that will benefit our students.

As a group, most of our responses were within one to points of the set median score. Therefore, I strongly believe that my group's cut scores are aligned with the acceptable scores.

This was hard work, but well worth the results. Great facilitator:)))

### Standard Setting: Science Grades 4/8

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standard-setting process were articulated clearly.	0	0	0	0	6	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	0	6	100%
The specific tasks I was expected to fulfill as a standard-setting panelist were delineated clearly.	0	0	0	1	5	100%
I received training on how to navigate the standard-setting software (OPLS).	0	0	0	0	6	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	1	5	100%
I received training as part of the standard-setting meeting that familiarized me with the content of the test(s).	0	0	0	0	6	100%
I had the opportunity to ask questions about the test content.	0	0	0	0	6	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	1	5	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	0	6	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	0	6	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	0	6	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	1	5	100%
My facilitator was available and able to adequately answer my questions throughout the standard-setting meeting.	0	0	0	0	6	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	0	6	100%

Statement	SD	D	?	A	SA	% A+SA
After Round 1 I had the opportunity to ask questions and participate in a discussion about the results.	0	0	0	0	6	100%
The discussion after Round 1 was useful in preparing me for Round 2.	0	0	0	0	6	100%
After Round 2 I had the opportunity to ask questions and participate in a discussion about the results.	0	0	0	1	5	100%
The discussion after Round 2 was useful in solidifying my confidence in the process and our collective recommendations.	0	0	0	1	5	100%
The standard-setting process was fair.	0	0	0	0	6	100%
The standard-setting process was orderly.	0	0	0	0	6	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	1	5	100%
I have confidence in my group's final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	0	2	4	100%

**Comments**

Though our bookmarks varied, I believe that my group made decisions regarding cut scores that were accurate and as closely aligned to the ALDs as possible.

I do wonder about the difference between the 4th grade cut score percentages and the 8th grade percentages which were higher.

I feel that the Science 4 bookmarks / cut scores are where they need to be I have no issues. The Science 8 scores allow for many more students to achieve above goal, yes I do feel that in this process the bookmarks are grounded in the ALDs.

### Standard Setting: Grade HS Math/Science

Statement	SD	D	?	A	SA	% A+SA
The purpose and goals of the standard-setting process were articulated clearly.	0	0	0	1	5	100%
The bookmark procedure and its use were presented and explained clearly.	0	0	0	1	5	100%
The specific tasks I was expected to fulfill as a standard-setting panelist were delineated clearly.	0	0	0	1	5	100%
I received training on how to navigate the standard-setting software (OPLS).	0	0	0	1	5	100%
I had the opportunity to ask questions about and practice navigating OPLS.	0	0	0	1	5	100%
I received training as part of the standard-setting meeting that familiarized me with the content of the test(s).	0	0	0	1	5	100%
I had the opportunity to ask questions about the test content.	0	0	0	1	5	100%
I received training on the intended use of the Achievement Level Descriptors (ALDs).	0	0	0	1	5	100%
I had the opportunity to ask questions and develop an understanding of the ALDs and how to apply them.	0	0	0	1	5	100%
I was given an opportunity to practice performing the bookmark procedure.	0	0	0	1	5	100%
I had the opportunity to ask questions and confirm my understanding after the practice round.	0	0	0	1	5	100%
All the resources I needed to perform my tasks were readily accessible and easy to use.	0	0	0	1	5	100%
My facilitator was available and able to adequately answer my questions throughout the standard-setting meeting.	0	0	0	0	6	100%
My facilitator reminded our group to ground our standards recommendations in evidence from the ALDs.	0	0	0	0	6	100%

Statement	SD	D	?	A	SA	% A+SA
After Round 1 I had the opportunity to ask questions and participate in a discussion about the results.	0	0	0	1	5	100%
The discussion after Round 1 was useful in preparing me for Round 2.	0	0	0	1	5	100%
After Round 2 I had the opportunity to ask questions and participate in a discussion about the results.	0	0	0	1	5	100%
The discussion after Round 2 was useful in solidifying my confidence in the process and our collective recommendations.	0	0	0	1	5	100%
The standard-setting process was fair.	0	0	0	1	5	100%
The standard-setting process was orderly.	0	0	0	1	5	100%
I have confidence in my personal understanding and ultimate application of the bookmark procedure.	0	0	0	1	5	100%
I have confidence in my group’s final cut scores. [Please explain in the Comments section below. Specifically, if you disagree, should the cut score(s) have been higher or lower?]	0	0	0	2	4	100%

**Comments**

This process was such a learning experience. I gained valuable information. My facilitator Tracy Fazio was amazing. This entire Standards Setting was fantastic.

I think the cut scores where right where they intended to be. We worked hard and discussed our thoughts and processes.

The system was user friendly.

The facilitators were outstanding at training and were encouraging and helpful as we moved through the process.

We were very consistent with our discussions and everyone was open minded about where the standards aligned. The OPLS platform was very easy to navigate and made the process much easier.

## Vertical Articulation: English Language Arts

Statement	SD	D	?	A	SA	% A+SA
The introductory presentation helped me understand vertical articulation.	0	0	0	1	6	100%
The presentation of data helped me understand and contribute to the vertical articulation discussion.	0	0	0	0	7	100%
The comments of the other panelists helped me understand and contribute to the vertical articulation discussion.	0	0	0	2	5	100%
Reviewing items and ALDs helped me make decisions as part of vertical articulation.	0	0	0	0	7	100%
I thought decisions about adjusting cut scores were reached fairly.	0	0	0	0	7	100%
I am satisfied with the final results of the vertical articulation. [Please explain your answer in the comments section below.]	0	0	0	1	6	100%

### Comments

We worked together through discussions to reach a consensus. I appreciated the ease of working in opIs.

This was an educational experience. I had no idea just how much work goes into this. I appreciate you having me as a panelist.

I feel as a group we came to a fair cut level for these tests. Thanks for allowing me to be part of this process

I am satisfied with the results and appreciate the opportunity to work on this for the benefit of our students!

## Vertical Articulation: Math

Statement	SD	D	?	A	SA	% A+SA
The introductory presentation helped me understand vertical articulation.	0	0	0	3	6	100%
The presentation of data helped me understand and contribute to the vertical articulation discussion.	0	0	0	0	9	100%
The comments of the other panelists helped me understand and contribute to the vertical articulation discussion.	0	0	0	1	8	100%
Reviewing items and ALDs helped me make decisions as part of vertical articulation.	0	0	0	1	8	100%
I thought decisions about adjusting cut scores were reached fairly.	0	0	0	0	9	100%
I am satisfied with the final results of the vertical articulation. [Please explain your answer in the comments section below.]	0	0	0	0	9	100%

### Comments

All of the percentages are in an acceptable range.  
Tracy was a great facilitator.

## Vertical Articulation: Science

Statement	SD	D	?	A	SA	% A+SA
The introductory presentation helped me understand vertical articulation.	0	0	0	1	6	100%
The presentation of data helped me understand and contribute to the vertical articulation discussion.	0	0	0	1	6	100%
The comments of the other panelists helped me understand and contribute to the vertical articulation discussion.	0	0	0	0	7	100%
Reviewing items and ALDs helped me make decisions as part of vertical articulation.	0	0	0	1	6	100%
I thought decisions about adjusting cut scores were reached fairly.	0	0	0	1	6	100%
I am satisfied with the final results of the vertical articulation. [Please explain your answer in the comments section below.]	0	0	0	0	7	100%
<p><b>Comments</b></p> <p>The results would assist educators in addressing the Connectors which would impact student performance on the test. Exposure to academic vocabulary and having students respond to related scenarios is critical.</p> <p>I believe this represents a fair representation of the cut scores for grades 4, 8, and HS for all levels and I am satisfied with the data.</p> <p>Highly satisfied. Discussions were implements, thoughts were put together and think our final results are 100% accurate.</p> <p>Everyone had an opportunity to share their reasoning. I enjoyed hearing other's thoughts behind their choices.</p> <p>Input was gathered from all participants, and an overwhelming majority agreed on all changes made. Changes made closely aligned with cut scores set at policy level.</p> <p>The group had great discussions around the ALDs and what we thought the cut scores should look like</p>						



## Appendix J. Reliability by Population Categories

### J.1 ELA Grade 3 Form 3

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥290	0.84	2.85	24.39	7.20
Gender	Male	≥200	0.84	2.90	23.32	7.21
	Female	≥90	0.83	2.72	26.77	6.62
Ethnicity	Hispanic/Latino	≥10	0.81	2.79	22.65	6.46
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥190	0.85	2.84	24.78	7.21
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥70	0.86	2.87	24.46	7.55
	Two or More Races	<10	NR	NR	NR	NR
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥290	0.84	2.85	24.39	7.20
Economic Status	Not Economically Disadvantaged	≥20	0.72	2.99	23.20	5.70
	Economically Disadvantaged	≥260	0.85	2.84	24.54	7.30
EL Status	Non-EL	≥290	0.84	2.86	24.42	7.22
	EL	<10	NR	NR	NR	NR

### J.2 ELA Grade 3 Form 3NV

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥200	0.87	2.87	15.95	7.85
Gender	Male	≥140	0.87	2.86	15.64	7.96
	Female	≥60	0.85	2.91	16.69	7.60
Ethnicity	Hispanic/Latino	≥20	0.75	2.92	17.33	5.89
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥90	0.89	2.80	15.08	8.52
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥80	0.85	2.95	16.37	7.51
	Two or More Races	<10	NR	NR	NR	NR
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥200	0.87	2.87	15.95	7.85
Economic Status	Not Economically Disadvantaged	≥40	0.87	2.86	17.23	7.87
	Economically Disadvantaged	≥150	0.86	2.88	15.56	7.63
EL Status	Non-EL	≥200	0.87	2.88	16.01	7.90
	EL	<10	NR	NR	NR	NR

### J.3 ELA Grade 4 Form 3

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥360	0.85	2.92	24.55	7.47
Gender	Male	≥230	0.86	2.91	23.92	7.72
	Female	≥130	0.82	2.91	25.66	6.87
Ethnicity	Hispanic/Latino	≥20	0.93	2.63	22.81	9.68
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥230	0.85	2.94	24.38	7.63
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥90	0.80	2.92	25.49	6.54
	Two or More Races	<10	NR	NR	NR	NR
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥360	0.85	2.92	24.56	7.47
Economic Status	Not Economically Disadvantaged	≥50	0.87	2.88	24.16	7.90
	Economically Disadvantaged	≥310	0.84	2.92	24.69	7.37
EL Status	Non-EL	≥360	0.85	2.92	24.52	7.48
	EL	<10	NR	NR	NR	NR

### J.4 ELA Grade 4 Form 3NV

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥150	0.87	2.86	15.77	8.01
Gender	Male	≥100	0.86	2.81	15.15	7.50
	Female	≥50	0.89	2.93	16.98	8.87
Ethnicity	Hispanic/Latino	<10	NR	NR	NR	NR
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥70	0.84	2.88	15.26	7.23
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥60	0.90	2.85	16.62	9.10
	Two or More Races	<10	NR	NR	NR	NR
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥150	0.87	2.86	15.77	8.01
Economic Status	Not Economically Disadvantaged	≥30	0.89	2.82	17.31	8.57
	Economically Disadvantaged	≥120	0.87	2.87	15.37	7.85
EL Status	Non-EL	≥150	0.87	2.86	15.83	8.08
	EL	<10	NR	NR	NR	NR

### J.5 ELA Grade 5 Form 3

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥570	0.85	2.98	23.36	7.71
Gender	Male	≥380	0.86	2.98	23.14	7.88
	Female	≥180	0.84	2.98	23.83	7.33
Ethnicity	Hispanic/Latino	≥40	0.82	3.03	24.28	7.10
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥310	0.85	3.00	23.34	7.79
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥190	0.86	2.95	23.22	7.76
	Two or More Races	≥10	NR	NR	24.50	6.06
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥570	0.85	2.98	23.36	7.71
Economic Status	Not Economically Disadvantaged	≥80	0.82	3.05	23.31	7.19
	Economically Disadvantaged	≥480	0.86	2.97	23.35	7.80
EL Status	Non-EL	≥560	0.85	2.98	23.40	7.71
	EL	<10	NR	NR	NR	NR

### J.6 ELA Grade 6 Form 3

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥800	0.88	2.80	25.86	8.22
Gender	Male	≥520	0.88	2.79	25.98	8.21
	Female	≥280	0.88	2.82	25.63	8.26
Ethnicity	Hispanic/Latino	≥40	0.88	2.80	26.02	8.05
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	≥10	0.81	3.13	23.31	7.25
	Black or African American	≥470	0.87	2.80	26.16	7.83
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥250	0.91	2.78	25.52	9.03
	Two or More Races	≥10	0.83	3.03	23.92	7.41
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥800	0.88	2.80	25.86	8.22
Economic Status	Not Economically Disadvantaged	≥100	0.88	2.86	24.08	8.20
	Economically Disadvantaged	≥690	0.89	2.78	26.15	8.23
EL Status	Non-EL	≥790	0.88	2.80	25.86	8.18
	EL	≥10	0.94	2.59	25.56	10.45

**J.7 ELA Grade 7 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥860	0.87	2.82	26.16	7.87
Gender	Male	≥560	0.87	2.85	25.84	7.95
	Female	≥290	0.87	2.77	26.78	7.69
Ethnicity	Hispanic/Latino	≥30	0.90	2.64	25.79	8.21
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥450	0.87	2.85	25.97	7.78
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥330	0.88	2.78	26.56	8.03
	Two or More Races	≥20	0.82	2.96	25.83	7.02
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥860	0.87	2.82	26.16	7.87
Economic Status	Not Economically Disadvantaged	≥120	0.86	2.83	25.36	7.57
	Economically Disadvantaged	≥730	0.87	2.82	26.32	7.91
EL Status	Non-EL	≥850	0.87	2.82	26.18	7.85
	EL	<10	NR	NR	NR	NR

**J.8 ELA Grade 8 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥930	0.86	2.80	25.95	7.43
Gender	Male	≥620	0.85	2.80	26.08	7.15
	Female	≥300	0.88	2.79	25.69	7.99
Ethnicity	Hispanic/Latino	≥50	0.83	2.89	25.19	7.02
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥510	0.84	2.81	26.14	6.95
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥330	0.88	2.78	25.86	8.12
	Two or More Races	≥20	0.91	2.62	25.23	8.51
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥920	0.86	2.80	25.96	7.44
Economic Status	Not Economically Disadvantaged	≥140	0.86	2.88	24.71	7.79
	Economically Disadvantaged	≥770	0.85	2.78	26.30	7.21
EL Status	Non-EL	≥910	0.86	2.80	25.95	7.44
	EL	≥10	0.80	2.95	25.92	6.63

**J.9 ELA HS Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥850	0.87	2.71	25.71	7.44
Gender	Male	≥570	0.86	2.72	25.40	7.39
	Female	≥270	0.87	2.68	26.33	7.51
Ethnicity	Hispanic/Latino	≥20	0.91	2.78	23.21	9.15
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	≥10	0.77	2.81	22.14	5.80
	Black or African American	≥470	0.86	2.74	25.57	7.20
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥320	0.88	2.65	26.24	7.64
	Two or More Races	≥10	0.89	2.56	26.55	7.90
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥850	0.87	2.71	25.71	7.44
Economic Status	Not Economically Disadvantaged	≥110	0.87	2.67	25.72	7.40
	Economically Disadvantaged	≥670	0.86	2.70	25.98	7.18
EL Status	Non-EL	≥840	0.87	2.71	25.71	7.42
	EL	<10	NR	NR	NR	NR

**J.10 Math Grade 3 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥500	0.89	2.62	17.92	7.80
Gender	Male	≥350	0.89	2.62	17.43	7.76
	Female	≥150	0.89	2.61	19.03	7.78
Ethnicity	Hispanic/Latino	≥40	0.84	2.72	17.45	6.81
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥280	0.89	2.62	18.56	7.77
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥150	0.90	2.58	17.25	8.07
	Two or More Races	≥10	0.88	2.64	16.18	7.52
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥500	0.89	2.62	17.92	7.80
Economic Status	Not Economically Disadvantaged	≥70	0.87	2.65	16.11	7.23
	Economically Disadvantaged	≥420	0.89	2.62	18.27	7.81
EL Status	Non-EL	≥490	0.89	2.61	17.96	7.83
	EL	≥10	NR	NR	16.10	5.76

### J.11 Math Grade 4 Form 3

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥510	0.85	2.67	17.71	6.90
Gender	Male	≥320	0.84	2.68	17.57	6.78
	Female	≥180	0.86	2.65	17.97	7.11
Ethnicity	Hispanic/Latino	≥20	0.89	2.62	17.07	7.80
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥300	0.84	2.68	17.83	6.76
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥160	0.86	2.65	17.52	7.03
	Two or More Races	≥10	0.91	2.57	17.36	8.38
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥510	0.85	2.67	17.72	6.90
Economic Status	Not Economically Disadvantaged	≥70	0.83	2.70	18.68	6.59
	Economically Disadvantaged	≥430	0.85	2.66	17.56	6.93
EL Status	Non-EL	≥500	0.85	2.67	17.73	6.90
	EL	<10	NR	NR	NR	NR

### J.12 Math Grade 5 Form 3

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥570	0.78	2.71	18.16	5.83
Gender	Male	≥380	0.80	2.70	17.98	5.96
	Female	≥180	0.76	2.73	18.52	5.56
Ethnicity	Hispanic/Latino	≥40	0.78	2.71	17.72	5.81
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥310	0.78	2.71	18.06	5.77
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥190	0.80	2.70	18.37	5.99
	Two or More Races	≥10	NR	NR	20.10	6.45
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥570	0.78	2.71	18.16	5.83
Economic Status	Not Economically Disadvantaged	≥80	0.80	2.69	18.02	6.00
	Economically Disadvantaged	≥480	0.78	2.71	18.15	5.80
EL Status	Non-EL	≥560	0.78	2.71	18.16	5.84
	EL	<10	NR	NR	NR	NR

**J.13 Math Grade 6 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥800	0.86	2.58	21.17	7.01
Gender	Male	≥520	0.86	2.57	21.36	6.98
	Female	≥280	0.86	2.60	20.82	7.06
Ethnicity	Hispanic/Latino	≥40	0.85	2.62	20.76	6.76
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	≥10	0.83	2.74	19.46	6.63
	Black or African American	≥470	0.85	2.60	21.26	6.64
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥250	0.90	2.52	21.31	7.79
	Two or More Races	≥10	0.70	2.71	19.69	4.97
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥800	0.86	2.58	21.17	7.01
Economic Status	Not Economically Disadvantaged	≥100	0.87	2.62	20.15	7.23
	Economically Disadvantaged	≥690	0.86	2.57	21.39	6.99
EL Status	Non-EL	≥790	0.86	2.58	21.18	6.99
	EL	≥10	0.91	2.54	21.06	8.31

**J.14 Math Grade 7 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥850	0.86	2.57	20.33	6.86
Gender	Male	≥560	0.86	2.57	20.19	6.88
	Female	≥290	0.86	2.56	20.60	6.84
Ethnicity	Hispanic/Latino	≥30	0.90	2.50	21.18	7.77
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥450	0.85	2.57	20.16	6.75
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥320	0.87	2.55	20.63	7.00
	Two or More Races	≥20	0.80	2.60	18.74	5.79
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥850	0.86	2.57	20.33	6.86
Economic Status	Not Economically Disadvantaged	≥120	0.86	2.61	19.33	6.89
	Economically Disadvantaged	≥720	0.86	2.55	20.50	6.85
EL Status	Non-EL	≥840	0.86	2.56	20.33	6.88
	EL	<10	NR	NR	NR	NR

**J.15 Math Grade 8 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥920	0.88	2.61	20.04	7.45
Gender	Male	≥620	0.88	2.61	20.22	7.39
	Female	≥290	0.88	2.61	19.66	7.57
Ethnicity	Hispanic/Latino	≥50	0.87	2.60	20.42	7.28
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥510	0.88	2.62	19.79	7.50
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥320	0.88	2.60	20.24	7.41
	Two or More Races	≥20	0.87	2.50	22.05	7.07
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥910	0.88	2.61	20.05	7.46
Economic Status	Not Economically Disadvantaged	≥130	0.88	2.61	19.94	7.54
	Economically Disadvantaged	≥770	0.88	2.61	20.12	7.43
EL Status	Non-EL	≥910	0.88	2.61	20.05	7.44
	EL	≥10	0.90	2.57	19.67	8.34

**J.16 Math HS Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥840	0.87	2.61	19.59	7.11
Gender	Male	≥570	0.87	2.60	19.47	7.22
	Female	≥270	0.86	2.61	19.86	6.89
Ethnicity	Hispanic/Latino	≥20	0.87	2.64	18.50	7.30
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	≥10	0.91	2.56	18.69	8.73
	Black or African American	≥460	0.85	2.64	19.35	6.74
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥320	0.89	2.55	20.04	7.56
	Two or More Races	≥10	0.90	2.53	20.64	8.16
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥840	0.87	2.61	19.59	7.11
Economic Status	Not Economically Disadvantaged	≥110	0.87	2.59	20.15	7.24
	Economically Disadvantaged	≥670	0.86	2.61	19.59	7.07
EL Status	Non-EL	≥830	0.87	2.61	19.59	7.12
	EL	<10	NR	NR	NR	NR



**J.17 Science Grade 4 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥500	0.78	2.50	16.11	5.33
Gender	Male	≥320	0.79	2.50	16.15	5.42
	Female	≥180	0.76	2.51	16.06	5.18
Ethnicity	Hispanic/Latino	≥20	0.75	2.54	15.96	5.05
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥300	0.79	2.50	16.23	5.47
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥150	0.76	2.52	15.99	5.10
	Two or More Races	≥10	0.89	2.37	16.55	7.02
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥500	0.78	2.50	16.12	5.34
Economic Status	Not Economically Disadvantaged	≥70	0.77	2.50	16.42	5.22
	Economically Disadvantaged	≥420	0.78	2.50	16.10	5.33
EL Status	Non-EL	≥490	0.78	2.50	16.13	5.33
	EL	<10	NR	NR	NR	NR

**J.18 Science Grade 8 Form 3**

Category	Group	Ncount	Alpha	SEM	Mean	STD
Overall	-	≥910	0.81	2.36	18.54	5.42
Gender	Male	≥620	0.79	2.37	18.82	5.17
	Female	≥290	0.84	2.36	17.97	5.87
Ethnicity	Hispanic/Latino	≥50	0.83	2.38	17.71	5.73
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR
	Black or African American	≥500	0.79	2.37	18.59	5.22
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥320	0.83	2.36	18.49	5.69
	Two or More Races	≥20	0.76	2.31	20.10	4.68
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥910	0.81	2.36	18.55	5.42
Economic Status	Not Economically Disadvantaged	≥130	0.80	2.39	18.11	5.30
	Economically Disadvantaged	≥760	0.81	2.36	18.65	5.42
EL Status	Non-EL	≥900	0.81	2.37	18.54	5.39
	EL	≥10	0.91	2.23	18.58	7.32

**J.19 Science HS Form 3**

<b>Category</b>	<b>Group</b>	<b>Ncount</b>	<b>Alpha</b>	<b>SEM</b>	<b>Mean</b>	<b>STD</b>
Overall	-	≥850	0.82	2.36	17.88	5.64
Gender	Male	≥570	0.83	2.37	17.73	5.80
	Female	≥270	0.80	2.34	18.20	5.28
Ethnicity	Hispanic/Latino	≥20	0.82	2.45	16.25	5.82
	American Indian or AK Native	<10	NR	NR	NR	NR
	Asian	≥10	0.83	2.43	15.62	5.87
	Black or African American	≥470	0.79	2.40	17.63	5.22
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR
	White	≥320	0.86	2.30	18.46	6.14
	Two or More Races	≥10	0.86	2.45	17.82	6.48
Migrant Status	Migrant	<10	NR	NR	NR	NR
	Non-migrant	≥850	0.82	2.36	17.88	5.64
Economic Status	Not Economically Disadvantaged	≥110	0.85	2.35	17.80	6.13
	Economically Disadvantaged	≥660	0.81	2.37	17.96	5.44
EL Status	Non-EL	≥840	0.82	2.37	17.85	5.64
	EL	≥10	NR	NR	20.30	5.62

## Appendix K. LEAP Connect Policy Level Definitions and Achievement Level Descriptors

### Policy Level Definitions

Policy Level Definitions (PLDs) briefly describe the expectations for student performance at each of Louisiana’s four achievement levels. The achievement levels are part of Louisiana’s cohesive assessment system and indicate a student’s ability to demonstrate proficiency on the Louisiana Connectors for Students with Significant Cognitive Disabilities.

The following list identifies the PLDs for the LEAP Connect assessment program.

- **Below Goal:** A student who performs at **below goal** level demonstrates a **minimal** understanding of key academic knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **low complexity texts or tasks** and **will need substantial academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.
- **Near Goal:** A student who performs at **near goal** level demonstrates a **partial** understanding of key academic knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **low and moderate complexity texts or tasks** and **will need moderate academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.
- **At Goal:** A student who performs at **at goal** level demonstrates a **satisfactory** understanding of key knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **moderate and high complexity texts or tasks** and **may need minimal academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.
- **Above Goal:** A student who performs at **above goal** level demonstrates a **thorough** understanding of key knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **high complexity texts or tasks** and **will need few academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.

### ELA Achievement Level Descriptors

LEAP Connect scale scores are used to assign a student’s achievement in English language arts (ELA) in one of four levels. Achievement Level Descriptors (ALDs) for ELA further describe the knowledge, skills, and abilities that students generally demonstrate at each performance level. ALDs for ELA at grades 3 through 8 and high school are provided in the following tables.

#### *Text Complexity Descriptions*

- **Low text complexity:** brief text with straightforward ideas and relationships; short, simple sentences
- **Moderate text complexity:** text with clear, complex ideas and relationships and simple, compound sentences
- **High text complexity:** text with detailed and implied complex ideas and relationships; a variety of sentence types including phrases and transition words

ELA Grade 3 ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
<b>Low text complexity:</b>	<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the topic of a literary text, informational text, or information presented in diverse media</li> <li>identify a detail from a literary text</li> <li>identify a character, event, conflict, or setting in a literary text</li> <li>identify a title, caption, or heading in an informational text</li> <li>identify an illustration related to a given topic</li> <li>identify a topic presented by an illustration</li> <li>identify the meaning of words (i.e., nouns)</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the central message, lesson, or moral within a literary text, folktale, or fable</li> <li>determine the main idea and identify supporting details in informational text</li> <li>determine the main idea of visually presented information</li> <li>identify the purpose of text features in informational text</li> <li>use information from charts, maps, graphs, diagrams, photographs, or timelines in informational text to answer questions</li> <li>use context to identify the meaning of words, phrases, or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the central message, lesson, or moral within a literary text, folktale, or fable</li> <li>use details from a literary text to answer inferential questions</li> <li>determine the main idea and identify supporting details in informational text</li> <li>determine the main idea of visually presented information</li> <li>identify the purpose of text features in informational text</li> <li>use information from charts, maps, graphs, diagrams, photographs, or timelines in informational text to answer questions</li> <li>use context to identify the meaning of words, phrases, or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the central message, lesson, or moral within a literary text, folktale, or fable</li> <li>determine the main idea and identify supporting details in informational text</li> <li>determine the main idea of visually presented information</li> <li>identify the purpose of text features in informational text</li> <li>use information from charts, maps, graphs, diagrams, photographs, or timelines in informational text to answer questions</li> <li>use context to identify the meaning of words, phrases, or multiple meaning words</li> </ul>
	<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
	<ul style="list-style-type: none"> <li>use details from a literary text to answer specific questions</li> <li>describe the relationship between characters, settings, events, or conflicts in literary text</li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify simple words (i.e., words with a consonant at the beginning, a consonant at the end, and a short vowel in the middle)</li> </ul>	<ul style="list-style-type: none"> <li>use details from a literary text to answer specific and inferential questions</li> <li>describe the relationship between characters, settings, events, or conflicts in literary text</li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify grade-level words</li> </ul>	

<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a statement related to an everyday topic</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>minimal or no</u> development of the task, purpose, or audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes minimal organization (e.g., introduction, body, and conclusion)</li> <li>includes unrelated or no ideas (e.g., details, activities)</li> <li>shows minimal to no command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of a narrative text to include beginning, middle, and end</li> <li>identify the category related to a set of facts</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, or audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., details, activities)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify an illustration to convey meaning in an informational text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, or audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details, activities) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details, activities) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>
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ELA Grade 4 ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
<b>Low text complexity:</b>	<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a topic of a literary text</li> <li>identify a detail from a literary text</li> <li>identify a character in a literary text</li> <li>identify charts, graphs, diagrams, or timelines in an informational text</li> <li>identify a topic of an informational text</li> <li>use context to identify the meaning of multiple meaning words</li> <li>identify general academic words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the theme of literary text and identify supportive details</li> <li>describe character traits using text-based details in literary text</li> <li>determine the main idea of informational text</li> <li>locate information in charts, graphs, diagrams, or timelines</li> <li>use information from charts, graphs, diagrams, or timelines in informational text to answer questions</li> <li>use general academic words or domain-specific words or phrases</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the theme of literary text and identify supportive details</li> <li>determine the main idea of informational text</li> <li>explain how the information provided in charts, graphs, diagrams, or timelines contributes to an understanding of informational text</li> <li>use information from charts, graphs, diagrams, or timelines in informational text to answer questions</li> <li>use general academic words or domain-specific words or phrases</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>determine the theme of literary text and identify supportive details</li> <li>determine the main idea of informational text</li> <li>explain how the information provided in charts, graphs, diagrams, or timelines contributes to an understanding of informational text</li> <li>use information from charts, graphs, diagrams, or timelines in informational text to answer questions</li> <li>use general academic words or domain-specific words</li> </ul>
	<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
	<ul style="list-style-type: none"> <li>use details and examples from a literary text to answer specific questions</li> <li>use context to identify the meaning of words, multiple meaning words, or words showing shades of meaning</li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify simple words (i.e., words with a consonant at the beginning, a consonant at the end, and a short vowel in the middle)</li> </ul>	<ul style="list-style-type: none"> <li>use details and examples from a literary text to answer specific questions</li> <li>describe character traits using text-based details in literary text</li> <li>use context to identify the meaning of words, multiple meaning words, or words showing shades of meaning</li> </ul> <p><b>AND with accuracy, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify grade-level words</li> </ul>	

<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the concluding sentence in a short explanatory text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>minimal or no</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes minimal organization (e.g., introduction, body, and conclusion)</li> <li>includes unrelated or no ideas (e.g., details, activities)</li> <li>shows minimal to no command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of a narrative text to include beginning, middle, and end</li> <li>identify a concluding sentence related to information in explanatory text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., details, activities)</li> <li>shows some command of the use of conventions. (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a text feature (e.g., headings, charts, or diagrams) to present information in explanatory text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details, activities) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details, activities) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>
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**ELA Grade 5 ALDs**

<b>Achievement Level Descriptors</b>			
<b>Below Goal</b>	<b>Near Goal</b>	<b>At Goal</b>	<b>Above Goal</b>
<b>Low text complexity:</b>	<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify an event from the beginning of a literary text</li> <li>• identify a detail from a literary text</li> <li>• identify a character, setting, or event in a literary text</li> <li>• identify the topic of an informational text</li> <li>• identify the main idea of an informational text</li> <li>• identify the difference or similarity in how information is presented in two sentences</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• compare characters, settings, or events in literary text</li> <li>• determine the main idea and identify supporting details in informational text</li> <li>• use details from the text to support an author’s point in informational text</li> <li>• compare and contrast how information and events are presented in two informational texts</li> <li>• use context to identify the meaning of words or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• compare characters, settings, or events in literary text</li> <li>• determine the main idea and identify supporting details in informational text</li> <li>• use details from the text to support an author’s point in informational text</li> <li>• compare and contrast how information and events are presented in two informational texts</li> <li>• use context to identify the meaning of words or multiple meaning words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• compare characters, settings, or events in literary text</li> <li>• determine the main idea and identify supporting details in informational text</li> <li>• use details from the text to support an author’s point in informational text</li> <li>• compare and contrast how information and events are presented in two informational texts</li> <li>• use context to identify the meaning of words or multiple meaning words</li> </ul>
	<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
	<ul style="list-style-type: none"> <li>• summarize a literary text from beginning to end</li> <li>• use details or examples from a literary text to answer specific questions</li> </ul>	<ul style="list-style-type: none"> <li>• summarize a literary text from beginning to end</li> <li>• use details or examples from a literary text to answer specific questions</li> </ul>	



<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the category related to a set of common nouns</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>minimal or no</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes minimal organization (e.g., introduction, body, and conclusion)</li> <li>includes unrelated or no ideas (e.g., details, activities)</li> <li>shows minimal to no command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of a narrative text to include beginning, middle, and end</li> <li>identify a sentence that is organized logically to convey information</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., details, activities)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>support an explanatory text topic with information related to the topic (e.g., facts, definitions, concrete details, quotations, or examples)</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details, activities) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details, activities) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>
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**ELA Grade 6 ALDs**

<b>Achievement Level Descriptors</b>				
<b>Below Goal</b>	<b>Near Goal</b>	<b>At Goal</b>	<b>Above Goal</b>	
<b>Low text complexity:</b>	<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>	
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• identify an event from the beginning and end of a literary text</li> <li>• identify a detail from a literary text</li> <li>• identify a character in a literary text</li> <li>• identify the topic of an informational text</li> <li>• identify the main idea of an informational text</li> <li>• identify a fact from an informational text</li> <li>• identify a description of an individual or event in an informational text</li> <li>• use context to identify the meaning of multiple meaning words</li> <li>• identify the meaning of general academic words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• summarize a literary text from beginning to end without including personal opinions</li> <li>• support inferences or conclusions about characters using details in literary text</li> <li>• use details from the text to elaborate a key individual, event, or idea in informational text</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• summarize a literary text from beginning to end without including personal opinions</li> <li>• support inferences or conclusions about characters using details in literary text</li> <li>• summarize an informational text without including personal opinions</li> <li>• use details from the text to elaborate a key individual, event, or idea in informational text</li> <li>• use evidence from the text to support an author’s claim in informational text</li> <li>• summarize information presented in two informational texts</li> <li>• use domain-specific words accurately</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>• summarize a literary text from beginning to end without including personal opinions</li> <li>• support inferences or conclusions about characters using details in literary text</li> <li>• use details from the text to elaborate a key individual, event, or idea in informational text</li> <li>• use evidence from the text to support an author’s claim in informational text</li> <li>• use general academic or domain-specific words or phrases accurately</li> </ul>	
		<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
		<ul style="list-style-type: none"> <li>• use details or examples from a literary text to answer specific questions</li> <li>• use context to identify the meaning of words or multiple meaning words</li> </ul>	<ul style="list-style-type: none"> <li>• use details or examples from a literary text to answer specific questions</li> <li>• use context to identify the meaning of words or multiple meaning words</li> </ul>	

<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify an everyday order of events</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>minimal or no</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes minimal organization (e.g., introduction, body, and conclusion)</li> <li>includes unrelated or no ideas (e.g., details)</li> <li>shows minimal to no command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of an informative/explanatory text to include introduction, body, and conclusion</li> <li>identify the next event in a brief narrative</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., details)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify transition words, phrases, or clauses to convey sequence or signal shifts from one timeframe or setting to another</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>
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ELA Grade 7 ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
<b>Low text complexity:</b>	<b>Low text complexity:</b>	<b>Moderate text complexity:</b>	<b>High text complexity:</b>
<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a theme or central idea from a literary text</li> <li>identify an inference from a literary text</li> <li>identify a conclusion from an informational text</li> <li>identify a claim the author makes in an informational text</li> <li>compare and contrast two statements related to the same topic</li> <li>use context to identify the meaning of words</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the relationship between individuals, events, or ideas in an informational text</li> <li>use evidence from the text to support an author’s claim in informational text</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>uses details to support an inference, conclusion, or summary from informational text</li> <li>use details to explain how the interactions between individuals, events or ideas in informational texts are influenced by each other</li> <li>use evidence from the text to support an author’s claim in informational text</li> <li>compare and contrast how two authors write about the same topic in informational texts</li> <li>use context to identify the meaning of grade-level words or phrases</li> </ul>	<p><b>In reading, the student is able to:</b></p> <ul style="list-style-type: none"> <li>use details to support an inference, conclusion, or summary from informational text</li> <li>use details to explain how the interactions between individuals, events or ideas in informational texts are influenced by each other</li> <li>use evidence from the text to support an author’s claim in informational text</li> <li>compare and contrast how two authors write about the same topic in informational texts</li> <li>use context to identify the meaning of grade-level words or phrases</li> </ul>
	<b>AND with Moderate text complexity:</b>	<b>AND with High text complexity:</b>	
	<ul style="list-style-type: none"> <li>use details to support the theme or central idea from literary text</li> <li>use details to support conclusions or summaries of a literary text</li> </ul>	<ul style="list-style-type: none"> <li>use details to support the theme or central idea from literary text</li> <li>use details to support conclusions or summaries of a literary text</li> </ul>	

<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a graphic that includes an event as described in a text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>minimal or no</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes minimal organization (e.g., introduction, body, and conclusion)</li> <li>includes unrelated or no ideas (e.g., details)</li> <li>shows minimal to no command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify elements of an informative/explanatory text to include introduction, body, and conclusion</li> <li>identify details that describe experiences or events</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>limited</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>includes some organization (e.g., introduction, body, and conclusion)</li> <li>includes some related ideas (e.g., details)</li> <li>shows some command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing, the student is able to:</b></p> <ul style="list-style-type: none"> <li>identify a sentence that provides a conclusion in narrative text</li> </ul> <p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>satisfactory</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes ideas (e.g., details) that contribute to the meaning</li> <li>shows basic command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>	<p><b>AND in writing production, the student is able to:</b> respond to a writing prompt and demonstrate <u>effective</u> development of the task, purpose, and audience.</p> <p><b>The student response:</b></p> <ul style="list-style-type: none"> <li>follows logical organization (e.g., introduction, body, and conclusion)</li> <li>includes and elaborates ideas (e.g., details) that more fully develop the meaning</li> <li>shows command of the use of conventions (e.g., punctuation, complete sentences, and subject/verb agreement)</li> </ul>
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## Mathematics Achievement Level Descriptors

LEAP Connect scale scores are used to assign a student's achievement in mathematics in one of four levels. Achievement Level Descriptors (ALDs) for mathematics further describe the knowledge, skills, and abilities that students generally demonstrate at each performance level. ALDs for mathematics at grades 3 through 8 and high school are provided in the following tables.

### *Task Complexity Descriptions*

- **Low task complexity:** Simple problems using common mathematical terms and symbols
- **Moderate task complexity:** Common problems presented in mathematical context using various mathematical terms and symbols
- **High task complexity:** Multiple mathematical ideas presented in problems using various mathematical terms and symbolic representations of numbers, variables, and other item elements

## Mathematics Grade 3 ALDs

Achievement Level Descriptors				
Below Goal	Near Goal	At Goal	Above Goal	
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>	
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve addition problems</li> <li>● identify growing number patterns</li> <li>● identify an object showing a specified number of parts shaded</li> <li>● identify which object has the greater number of parts shaded</li> <li>● identify an object equally divided into two parts</li> <li>● identify the number of objects to be represented in a pictograph</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve addition and subtraction word problems</li> <li>● identify an arrangement of objects which represents factors in a problem</li> <li>● solve multiplication equations in which both numbers are equal to or less than five</li> <li>● identify multiplication patterns</li> <li>● identify a set of objects as nearer to 1 or 10</li> <li>● identify a representation of the area of a rectangle</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve addition and subtraction word problems</li> <li>● check the correctness of an answer in the context of a scenario</li> <li>● solve multiplication equations in which both numbers are equal to or less than five</li> <li>● identify multiplication patterns</li> <li>● match fraction models to unitary fractions</li> <li>● compare fractions with different numerators and the same denominator</li> <li>● transfer data from an organized list to a bar graph</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve addition and subtraction word problems</li> <li>● check the correctness of an answer in the context of a scenario</li> <li>● solve multiplication equations in which both numbers are equal to or less than five</li> <li>● identify multiplication patterns</li> <li>● match fraction models to unitary fractions</li> <li>● compare fractions with different numerators and the same denominator</li> <li>● transfer data from an organized list to a bar graph</li> </ul>	
		<b>AND with Moderate task complexity:</b>		<b>AND with High task complexity:</b>
		<ul style="list-style-type: none"> <li>● identify geometric figures which are divided into equal parts</li> </ul>		<ul style="list-style-type: none"> <li>● identify geometric figures which are divided into equal parts</li> <li>● count unit squares to compute the area of a rectangle</li> </ul>

## Mathematics Grade 4 ALDs

Achievement Level Descriptors				
Below Goal	Near Goal	At Goal	Above Goal	
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>	
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify an array with the same number of objects in each row</li> <li>● identify values rounded to nearest tens place</li> <li>● identify equivalent representations of a fraction (e.g., shaded diagram)</li> <li>● compare representations of a fraction (e.g., shaded diagram)</li> <li>● identify a rectangle with the larger or smaller perimeter</li> <li>● identify the data drawn in a bar graph that represents the greatest value</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● match a model to a multiplication expression using two single-digit numbers</li> <li>● identify a model of a multiplicative comparison</li> <li>● show division of objects into equal groups</li> <li>● round numbers to nearest 10, 100, or 1000</li> <li>● differentiate parts and wholes</li> <li>● compute the perimeter of a rectangle</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems</li> <li>● show division of objects into equal groups</li> <li>● round numbers to nearest 10, 100, or 1000</li> <li>● sort a set of 2-dimensional shapes</li> <li>● compute the perimeter of a rectangle</li> <li>● transfer data to a graph</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems</li> <li>● show division of objects into equal groups</li> <li>● compare two fractions with different denominators</li> <li>● sort a set of 2-dimensional shapes</li> <li>● transfer data to a graph</li> <li>● identify equivalent fractions</li> </ul>	
		<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
		<ul style="list-style-type: none"> <li>● identify equivalent fractions using models</li> <li>● select a 2-dimensional shape with a given attribute</li> </ul>	<ul style="list-style-type: none"> <li>● solve a multiplicative comparison word problem using up to two-digit numbers</li> <li>● check the correctness of an answer in the context of a scenario</li> </ul>	



## Mathematics Grade 5 ALDs

Achievement Level Descriptors				
Below Goal	Near Goal	At Goal	Above Goal	
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>	
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve one-step subtraction word problems</li> <li>● divide sets (no greater than 6) into two equal parts</li> <li>● identify values in the tenths place</li> <li>● identify a number in the ones, tens, or hundreds place</li> <li>● identify a given axis of a coordinate plane</li> <li>● match the conversion of 3 feet to 1 yard to a model</li> <li>● calculate elapsed time (i.e., hours)</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify if the total will increase or decrease when combining sets</li> <li>● perform operations with decimals</li> <li>● identify a symbolic representation of the addition of two fractions</li> <li>● identify place values to the hundredths place</li> <li>● convert standard measurements</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems</li> <li>● perform operations with decimals</li> <li>● solve word problems involving fractions</li> <li>● identify place values to the hundredths place</li> <li>● locate a given point on a coordinate plane when given an ordered pair</li> <li>● convert standard measurements</li> <li>● convert between minutes and hours</li> <li>● make quantitative comparisons between data sets shown as line graphs</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve multiplication word problems</li> <li>● perform operations with decimals</li> <li>● solve word problems involving fractions</li> <li>● locate a given point on a coordinate plane when given an ordered pair</li> <li>● convert standard measurements</li> <li>● convert between minutes and hours</li> <li>● make quantitative comparisons between data sets shown as line graphs</li> <li>● plot a given point on a coordinate plane when given an ordered pair</li> </ul>	
		<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
		<ul style="list-style-type: none"> <li>● compare the values of two products based upon multipliers</li> <li>● round decimals to nearest whole number</li> </ul>	<ul style="list-style-type: none"> <li>● compare the values of two products based upon multipliers</li> <li>● round decimals to nearest whole number</li> </ul>	

## Mathematics Grade 6 ALDs

Achievement Level Descriptors				
Below Goal	Near Goal	At Goal	Above Goal	
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>	
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify a model of a given percent</li> <li>● match a given unit rate to a model</li> <li>● identify a representation of two equal sets</li> <li>● identify a number less than zero on a number line</li> <li>● identify the meaning of an unknown in a modeled equation</li> <li>● count the number of grids or tiles inside a rectangle to find the area of a rectangle</li> <li>● identify the object that appears most frequently in a set of data (mode)</li> <li>● identify a representation of a set of data arranged into even groups (mean)</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● match a given ratio to a model</li> <li>● recognize a representation of the sum of two halves</li> <li>● solve real-world measurement problems involving unit rates</li> <li>● identify a representation of a value less than zero</li> <li>● identify the median or the equation needed to determine the mean of a set of data</li> <li>● compute the area of a rectangle</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● perform operations using up to three-digit numbers</li> <li>● solve real-world measurement problems involving unit rates</li> <li>● identify positive and negative values on a number line</li> <li>● determine the meaning of a value from a set of positive and negative integers</li> <li>● solve word problems with expressions including variables</li> <li>● compute the area of a parallelogram</li> <li>● identify the median or the equation needed to determine the mean of a set of data</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● solve real-world measurement problems involving unit rates and ratios</li> <li>● identify positive and negative values on a number line</li> <li>● solve word problems with expressions including variables</li> <li>● compute the area of a parallelogram and a triangle</li> <li>● use measures of central tendency to interpret data</li> </ul>	
		<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
		<ul style="list-style-type: none"> <li>● perform one-step operations with two decimal numbers</li> <li>● solve word problems using a percent</li> </ul>	<ul style="list-style-type: none"> <li>● perform one-step operations with two decimal numbers</li> <li>● solve word problems using a percent</li> <li>● solve word problems using ratios and rates</li> </ul>	

## Mathematics Grade 7 ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify representations of area and circumference of a circle</li> <li>identify representations of surface area</li> <li>make qualitative comparisons when interpreting a data set presented on a bar graph or in a table</li> <li>match a given ratio to a model</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the meaning of an unknown in a modeled equation</li> <li>describe a directly proportional relationship (i.e., increases or decreases)</li> <li>find the surface area of a three-dimensional right prism</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>solve division problems with positive/negative integers</li> <li>solve word problems involving ratios</li> <li>use a proportional relationship to solve a percentage problem</li> <li>identify proportional relationships between quantities represented in a table</li> <li>identify unit rate (constant of proportionality) in tables and graphs of proportional relationships</li> <li>compute the area of a circle</li> <li>find the surface area of a three-dimensional right prism</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>solve division problems with positive/negative integers</li> <li>solve word problems involving ratios</li> <li>identify proportional relationships between quantities represented in a table</li> <li>compute the area of a circle</li> <li>find the surface area of a three-dimensional right prism</li> <li>interpret graphs to qualitatively contrast data sets</li> </ul>
	<p><b>AND with Moderate task complexity:</b></p> <ul style="list-style-type: none"> <li>solve multiplication problems with positive/negative integers</li> <li>interpret graphs to qualitatively contrast data sets</li> <li>identify a representation which represents a negative number and its multiplication or division by a positive number</li> </ul>	<p><b>AND with High task complexity:</b></p> <ul style="list-style-type: none"> <li>solve multiplication problems with positive/negative integers</li> <li>evaluate variable expressions that represent word problems</li> </ul>	

## Mathematics Grade 8 ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>locate a given decimal number on a number line</li> <li>identify the relatively larger data set when given two data sets presented in a graph</li> <li>identify congruent rectangles</li> <li>identify similar rectangles</li> <li>identify a rectangle with the larger or smaller area as compared to another rectangle</li> <li>identify an ordered pair and its point on a graph</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>identify the solution to an equation which contains a variable</li> <li>identify the <math>y</math>-intercept of a linear graph</li> <li>match a given relationship between two variables to a model</li> <li>identify a data display that represents a given situation</li> <li>identify an attribute of a cylinder</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>locate approximate placement of an irrational number on a number line</li> <li>solve a linear equation which contains a variable</li> <li>identify the relationship shown on a linear graph</li> <li>calculate slope of a positive linear graph</li> <li>compute the change in area of a figure when its dimensions are changed</li> <li>solve for the volume of a cylinder</li> <li>plot provided data on a graph</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>locate approximate placement of an irrational number on a number line</li> <li>solve a linear equation which contains a variable</li> <li>identify the relationship shown on a linear graph</li> <li>compute the change in area of a figure when its dimensions are changed</li> <li>plot provided data on a graph</li> <li>interpret data presented in graphs to identify associations between variables</li> </ul>
		<p><b>AND with Moderate task complexity:</b></p> <ul style="list-style-type: none"> <li>identify congruent figures</li> <li>use properties of similarity to identify similar figures</li> <li>interpret data tables to identify the relationship between variables</li> </ul>	

## Mathematics High School ALDs

Achievement Level Descriptors				
Below Goal	Near Goal	At Goal	Above Goal	
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>	
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● arrange a given number of objects into two sets in multiple combinations</li> <li>● match an equation with a variable to a provided real-world situation</li> <li>● determine whether a given point is or is not part of a data set shown on a graph</li> <li>● use a table to match a unit conversion</li> <li>● complete the formula for area of a figure</li> <li>● identify the greatest or least value in a set of data shown on a number line</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify variable expressions which represent word problems</li> <li>● identify the hypotenuse of a right triangle</li> <li>● identify the greatest or least value in a set of data shown on a number line</li> <li>● calculate the mean and median of a set of data</li> <li>● describe the rate of change qualitatively</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify variable expressions which represent word problems</li> <li>● solve real-world measurement problems that require unit conversions</li> <li>● find the missing attribute of a three-dimensional figure</li> <li>● determine two similar right triangles when a scale factor is given</li> <li>● calculate the mean and median of a set of data</li> <li>● solve an equation for a specific variable</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify variable expressions which represent word problems</li> <li>● solve real-world measurement problems that require unit conversions</li> <li>● determine two similar right triangles when a scale factor is given</li> <li>● select the graphical representation of a linear model using a data table</li> <li>● calculate the mean, median, and range of a set of data</li> <li>● select the graphical representation of a linear model given a scenario</li> </ul>	
		<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
		<ul style="list-style-type: none"> <li>● identify the linear representation of a provided real-world situation</li> <li>● use an equation or a linear graphical representation to solve a word problem</li> <li>● solve equations with two variables using a graph</li> <li>● solve for the volume of a cube</li> </ul>	<ul style="list-style-type: none"> <li>● identify the linear representation of a provided real-world situation</li> <li>● use an equation or a linear graphical representation to solve a word problem</li> </ul>	

## Science Achievement Level Descriptors

LEAP Connect scale scores are used to assign a student's achievement in science in one of four levels. Achievement Level Descriptors (ALDs) for science further describe the knowledge, skills, and abilities that students generally demonstrate at each performance level. ALDs for science at grade 4, grade 8, and high school are provided in the following tables.

### *Task Complexity Descriptions*

- **Low task complexity:** Brief scenario with simple relationships and concrete concepts using common scientific terms and practices when necessary
- **Moderate task complexity:** Clear scenario with multiple relationships and simple concepts using various scientific terms and practices when necessary
- **High task complexity:** Detailed scenario with complex relationships and abstract concepts using various scientific terms, practices, and relevant specific core ideas

## Science Grade 4 ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
Low task complexity:	Low task complexity:	Moderate task complexity:	High task complexity:
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● recognize forms of energy such as motion and light</li> <li>● identify factors that change the motion of an object</li> <li>● relate the force applied to a given object to the impact it will have on another object</li> <li>● recognize that waves can cause an object to move</li> <li>● match an animal's external structure to its function</li> <li>● identify the senses animals use to receive stimuli</li> <li>● identify ways humans change the shape of land</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify the fastest or slowest moving object based on respective speeds</li> <li>● Identify what form of energy is produced by a device (e.g., sound, light, heat, motion, electricity)</li> <li>● identify the function of various external animal structures</li> <li>● recognize that rocks and soil can be moved by wind, water, and ice</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify a model which shows that energy can be converted from one form to another</li> <li>● identify the questions that can be investigated about the changes in energy that occur when objects collide</li> <li>● identify the initial and final forms of energy given a scenario related to energy conversion</li> <li>● identify the plant or animal structure that best meets the plant's or animal's needs in a given scenario</li> <li>● identify changes to the landscape caused by living things</li> <li>● identify a source of erosion or weathering that can cause changes to the landscape given a model</li> <li>● match a natural hazard to a solution that humans use to reduce the impact of natural hazards</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify the questions that can be investigated about the transfer of energy from a moving object to another object that it collides with</li> <li>● identify major internal and external structures of organisms that are critical for survival</li> <li>● predict how living things will affect the shape of a landscape given a scenario</li> <li>● describe a change that occurred in an environment based on the patterns/evidence (e.g., fossils) found in the rock layers</li> <li>● use data to identify the cause and effect relationships between weathering or erosion and land with or without vegetation</li> <li>● choose the design that would lessen the impact of a given natural hazard</li> </ul>

	<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
	<ul style="list-style-type: none"> <li>● use data related to the speed of objects to compare the energy each possesses</li> <li>● recognize that moving objects contain energy</li> <li>● recognize that the faster an object moves, the more energy it has</li> <li>● identify amplitude and wavelength using a model</li> <li>● identify how animals use their senses to help them survive</li> <li>● choose a piece of evidence that supports an explanation of how animals use their senses to respond to their environment</li> <li>● identify the locations of different water features of Earth given a map</li> <li>● identify the locations of different land features of Earth given a map</li> </ul>	<ul style="list-style-type: none"> <li>● use data to identify when energy is greatest or least for similar objects moving at different speeds</li> <li>● predict an object's motion based on the amplitude of the wave</li> <li>● use data to identify the cause and effect relationships between weathering or erosion and land with or without vegetation</li> <li>● identify patterns in the location of Earth features</li> <li>● identify a human solution to reduce the impact of a natural Earth process on humans</li> </ul>	



## Science Grade 8 ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
<b>Low task complexity:</b>	<b>Low task complexity:</b>	<b>Moderate task complexity:</b>	<b>High task complexity:</b>
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify objects or materials used to keep something hot or cold</li> <li>● identify a material as a natural material or as a synthetic/man-made material</li> <li>● identify environmental factors that can influence a plant's growth and survival</li> <li>● use a model to identify that inherited traits passed from parents to offspring lead to differences in offspring (e.g., eye color)</li> <li>● match extinct organisms with present-day organisms with similar characteristics</li> <li>● use graphics of embryo development to recognize how related organisms have similar developmental stages</li> <li>● identify types of Earth materials that can be located at the Earth's surface (exterior) and/or its interior</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify examples of chemical changes compared to physical changes</li> <li>● use a model to identify that parents and offspring may have different traits</li> <li>● use a map of natural resources to recognize that natural resources are distributed throughout Earth</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● contrast characteristics of natural and synthetic materials</li> <li>● identify a device that maximizes or minimizes thermal energy transfer using data</li> <li>● recognize that similarities in patterns of appearance in embryos at the same stage of development across species is evidence of relationships</li> <li>● explain relationships among species by organizing displays of pictorial data of embryos</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify a component(s) that energy will be transferred to or from to solve a problem</li> <li>● identify environmental factors that can influence an organism's growth</li> <li>● demonstrate an understanding that genetic variations in specific traits may occur as a result of small changes to genetic material</li> <li>● select an appropriate representation as embryological evidence of relationships among species</li> <li>● identify the relative age of fossils based on their locations in a column of rock layers</li> <li>● use data to explain why specific resources are limited</li> </ul>

	<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
	<ul style="list-style-type: none"> <li>● identify examples of chemical reactions that release energy (e.g., heat or light)</li> <li>● use a model of energy movement through the Earth's systems to identify the role of the Sun (i.e., heat source) use a model of energy movement with the Sun as the primary energy source to identify relationships between components of Earth's systems</li> </ul>	<ul style="list-style-type: none"> <li>● identify the natural resources used to make a synthetic product</li> <li>● use presented evidence to determine if a reaction has released or absorbed thermal energy</li> <li>● identify that thermal energy is transferred from hotter objects to colder objects</li> <li>● support an explanation of evolutionary relationships between living and fossil organisms with evidence describe how heat from Earth's core powers the rock cycle</li> </ul>	

## Science High School ALDs

Achievement Level Descriptors			
Below Goal	Near Goal	At Goal	Above Goal
Low task complexity:	Low task complexity:	Moderate task complexity:	High task complexity:
<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● match an organ to its function</li> <li>● match a body part to its function</li> <li>● identify how organisms react to changes in their external environment</li> <li>● identify various causes of infectious human diseases</li> <li>● recognize ways to protect against infectious diseases to maintain a body's health</li> <li>● identify treatments of viral and bacterial infections</li> <li>● identify the need for the protection of habitats (e.g., organisms depend on having specific needs met by a particular habitat)</li> <li>● identify that a trait can be passed from parent to offspring</li> <li>● identify the dominant trait in a given allele pair</li> <li>● recognize different traits associated with individual members in a species</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● match a part in a body system to its function</li> <li>● identify the function of an animal's response to external stimuli</li> <li>● identify data related to the number of species in a stable ecosystem</li> <li>● identify that siblings can have different characteristics even though they have the same parent</li> <li>● use a model to identify the likelihood of a particular trait in an offspring</li> <li>● recognize that gradual change in the environment can cause changes in organisms</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● identify the function of a body system and how it helps an animal to survive</li> <li>● predict what will happen to specific species over time based on an environmental change</li> <li>● use data to identify how a change affects the populations in an ecosystem</li> <li>● use a Punnett square to identify the probability (i.e., two out of four) of a particular trait in an offspring</li> <li>● recognize the cause and effect relationship between a naturally occurring change in the environment and the expression of a trait in a species</li> </ul>	<p><b>The student is able to:</b></p> <ul style="list-style-type: none"> <li>● given a scenario, determine a way to design an investigation related to how an organism responds to changes in its environment</li> <li>● modify (e.g., improve) a solution which helps protect Earth's environment</li> <li>● identify examples of phenotypes shown in a family pedigree</li> <li>● explain why there is an increased probability of individual organisms exhibiting an advantageous trait over time</li> <li>● determine which factor(s) resulted in a specific adaptation within a species</li> <li>● explain how gradual change in the environment can cause changes in organisms</li> <li>● predict what will happen to specific species over time based on an environmental change</li> </ul>

	<b>AND with Moderate task complexity:</b>	<b>AND with High task complexity:</b>	
	<ul style="list-style-type: none"> <li>● identify the correct sequence of steps necessary to prevent an infection</li> <li>● identify how biological or physical changes affect stability and change (i.e., numbers and/or types of organisms living in the ecosystem) in ecosystems</li> <li>● classify human activities on the Earth's environment as having either a negative or positive effect</li> </ul>	<ul style="list-style-type: none"> <li>● identify the best plan to gather information about how an organism responds to changes in its external environment</li> <li>● identify human activities that can have a negative effect on the Earth and then identify a solution that reduces its impact on the environment</li> <li>● describe how people can help protect the Earth's environment and biodiversity</li> <li>● identify a reason why two siblings can have different characteristics even though they have the same parents</li> <li>● complete a Punnett square</li> </ul>	