LEAP Practice Test Guidance: Mathematics

I. Purpose

This tool provides guidance for teachers on how to best use the LEAP Mathematics Practice Test. The following sections are included:

II. Test Structure

Specifics on the test structure and administration requirements are included in the 2015-16 LEAP Assessment Guides. The LEAP assessment is available as a paper-based test (PBT) or a computer-based test (CBT). The tables below include the test sessions, points per item type, and permitted testing times for the paper-based and computer-based tests.

PBT and CBT Test Structure

Grades	Sessions	Points per Item Type			Total Points	Maximum Time Allowed
		Type I	Type II	Type III		
3 – 5	1: No Calculator	14	4	3	21	75 minutes
	2: No Calculator	14	3	3	20	75 minutes
	3: No Calculator	12	3	6	21	75 minutes
				Total Points	62	
6 – 8	1: No Calculator	20	0	0	20	75 minutes
	2: Calculator	10	7	6	23	75 minutes
	3: Calculator	10	7	6	23	75 minutes
				Total Points	66	

The LEAP mathematics test sessions are **strictly timed** and no additional time is permitted, except for students who have a documented extended time accommodation (e.g., an IEP).

Access the LEAP paper-based practice tests, scoring guides, and online practice test answer sheets at http://www.louisianabelieves.com/resources/library/practice-tests. More information about administering and scoring the online practice test can be found in the Guide to Administering the Online Practice Test.

Grade	PBT	CBT
3	Practice Test and Scoring Guide	Scoring Guide and Answer Sheet
4	Practice Test and Scoring Guide	Scoring Guide and Answer Sheet
5	Practice Test and Scoring Guide	Scoring Guide and Answer Sheet
6	Practice Test and Scoring Guide	Scoring Guide and Answer Sheet
7	Practice Test and Scoring Guide	Scoring Guide and Answer Sheet
8	Practice Test and Scoring Guide	Scoring Guide and Answer Sheet

Posted: February 16, 2016

III. Recommended Uses

There are a number of ways to use the practice tests to prepare your students for the LEAP administration.

General Use	Specific Guidance	Notes for Use
Teacher understanding of the test	Connection between items and Assessable Content (detailed in appendix of Assessment Guide)	• Understand the types of items associated with assessable content to provide clarity. The scoring guide for each practice test describes the assessable content to which each item is aligned. • Helps answer questions like: "What does this assessable content look like as an assessment item?" and "How does my interpretation of the standards compare with the reasoning and modeling applications detailed in the assessable content?"
	Basis of comparison for purchased and open-source assessments	• Use as a guide when selecting assessments in terms of test length, rigor-level, content, item types and variety, and scoring. • Helps answer questions like: "Does the unit assessment provided in the curriculum offer the item variety and flexibility similar to the LEAP test?" and "What ways can I adjust a pre-made assessment to meet the rigor-level expected of my students?" • Use in conjunction with Instructional Materials Evaluation Tools provided by the LDE.
	Use rubrics to understand the expectations for student responses to modeling and reasoning items	• Illustrate how student responses connect to the math practices. • Illustrate the level of reasoning expected in student responses. • Expectations for a complete response include addressing all parts (e.g., part A, part B, etc.) of an item and all components of each part (e.g., within one part make a claim, justify a claim, and show work with each component worth points). • Links to annotated student responses for some reasoning and/or modeling tasks used in the practice test* for each grade are provided in Appendix A.
Test administration preparation	Facilitate testing discussions between teachers and students	• A sample set of guiding questions and discussion topics are provided as Handout 2 in Appendix B. • For example, teachers should discuss timing and pacing, the various item types that students will experience, and the components of complete responses.
	Practice timing and pacing by implementing each session in full	• Timing information can be found in this document and in the 2015-16 LEAP Assessment Guides.

* Student responses and annotations are from the PARCC 2015 assessment and released by PARCC, Inc.

General Use	Specific Guidance	Notes for Use
	Practice responding to test mode format, PBT or CBT	PBT • Highlighting text or placing an X to the right of the text in an option are recommended ways for students to eliminate options. • Crossing out options may create scoring issues if bubbles are marked through. • When skipping items to come back to, students may want to make a list (on scratch paper) of question numbers to return to. • Students need to be sure that they have filled in a bubble, or bubbles each question. • Students should make sure they mark only one bubble per column with no empty columns between used columns on answer grids. CBT • When skipping items to come back to, students should be sure to use the "flag" button so that they may see all skipped items when accessing the "Review" page. • It is strongly recommended that students be afforded ample practice time using the Online Tools Training (OTT) to gain familiarity with using all the features of the CBT.
Using practice test items during instruction and assessment	Incorporate piecemeal into teacher-made lessons, openers, or closing activities	• Items aligned to previously taught content may serve well as lesson openers; while, items aligned to current and future content may be better used in teacher-made lessons or closing activities. • Discussion of items should not be limited to content and correct answers, but should expand to include solving strategies and administration concerns previously addressed in this document.
	Template for teacher-made assessments	• Provide a variety of item types and tasks to assess skills as appropriate.

IV. General Cautions

- **Overall student profile**: The practice test should **not** be used to gather cumulative data about overall student performance and preparedness. The LEAP test is administered in April/May, when curriculum should be complete. Students have not yet learned all the material to be successful on the practice test.

- **Content prioritization**: Teachers should **not** prioritize content based on the standards assessed on the practice test. The standards covered on the practice test do not represent all of the assessable content eligible for actual LEAP assessments. To learn more about the assessable content review the Assessment Guides.

V. Item Types

Practice with various item types: multiple-choice, multiple-select, fill-in-the-blank (or gridded), open-response, and technology-enhanced items (TEIs).

LEAP Practice Test Guidance: Mathematics

Type	Specifics	Point Value
Multiple-choice	Grades 3-5 • 3 or 4 answer choices • **only one** correct answer Grades 6-8 • 4 answer choices • **only one** correct answer	• 1 point
Multiple-select	Grades 3-5 • 5-6 answer choices • **more than one** correct answer • Directions indicate the number of correct answers to be selected ("Select **two**....") Grades 6-8 • 5-7 answer choices • **one or more than one** correct answer • Directions **do not** indicate the number of correct answer to be selected ("Select **each**..." or "Select ALL...")	• 1 point • all correct answers and no incorrect answer must be chosen • **no partial credit**
Fill-in-the-Blank	PBT, Grades 3-8 • Write each part of the answer in a separate box and shade the bubble of the corresponding figure or number in the same column (Handout 1A, 1B) • Do not skip columns • Cannot grid a fraction answer, all items with potential fractional answers will be multiple-choice, multiple-select, or open-response[†] PBT, Grades 6-8 • Negative sign only used when needed, otherwise left blank CBT, Grades 3-8 • Does not require students to bubble answers into an answer grid • Numeric answers are keyed into entry box • The only symbols allowed are negative signs (-) and decimals (.); commas (,) and dollar signs ($) are not allowed	• 1 point
Open-Response	PBT • Complete all parts and all components of each part • Crossed-out work will not be scored • Students may not need all the space provided, but must fit all of their answer within the space CBT • Complete all parts and all components of each part • Tasks contain an equation builder tool with commonly-used, grade-specific math symbols (grades 3-5 and 6-8). • It is strongly recommended that students be afforded ample practice time using the Online Tools Training (OTT) to gain familiarity with using all the features of the equation builder.	• 3, 4, or 6 points each, dependent on rubric

[†] Grade 3 students are not expected to work with decimals. All gridded responses for grade 3 will be whole number answers.

Type	Specifics	Point Value
Technology-enhanced Items (TEIs)	• Approximately three to six TEIs included in each CBT. • Use innovative, engaging ways to assess student understanding of material beyond the limitations of a traditional selected-response task. • It is strongly recommended that students be afforded ample practice time using the Online Tools Training (OTT) to gain familiarity with using a variety of TEI types.	• 1 point

VI. Scoring and Results

- **Overall student results**: When scoring student performance on the practice tests, do **not** make assumptions about a student's score (i.e., 70% equals a D). Unlike daily assignments, statewide assessments—LEAP, EOCs, etc. —are not scored on a grading scale where, for example, answering 95% of questions correctly is always an A, nor answering only 40% of questions correctly is always an F. To score the practice test in this way would be inaccurate. Instead, consider patterns, such as those presented in the table that follows, and adjust instruction appropriately.
- **Scoring:**
  - Each multiple-choice, multiple-select, fill-in-the-blank, and TEI is worth one point each.
  - Each open-response item may or may not be multi-part; scoring is dependent on how the rubric assigns points as detailed in each answer key. Point values for reasoning tasks may be 3 points or 4 points; point values for modeling tasks may be 3 points or 6 points.
  - For any Type I task with multiple parts, each part is worth one point (so a 2-part item would be 1 point for part A and 1 point for part B for a total of 2 points). These tasks do not contain open-response parts.
- **Online practice test:** Access the Guide to Administering the Online Practice Test for specific information about administering and scoring the online practice test.
- **Results:** Look for content and administration patterns such as those detailed in the following table.

Observable Pattern	Examples of Pattern	Recommendations
Content Patterns		
Inform remediation needs	Students may have missed an item aligned to a particular standard that has been previously taught and assessed by other measures.	Incorporate the material into current lessons, as extensions of homework assignments, or as bell-ringer discussion. Remediation Guides located in the Teacher Toolbox can help teachers in this task.

Observable Pattern	Examples of Pattern	Recommendations
Modeling tasks	Student responses indicate difficulty when explaining how a given model supports the correct answer.	Incorporate more writing activities wherein students connect a given model to the correct response using precise mathematical language. Examples of modeling tasks can be found in the PARCC released item sets and PARCC 2014-15 practice tests.[‡]
Reasoning tasks	Student responses indicate gaps and assumptions in the reasoning process.	Incorporate more writing activities wherein students explain the reasoning of others.
Inform remediation of securely-held knowledge (or requisite knowledge)	Student incorrectly solves a problem which requires knowledge of equations or other information not provided on the reference sheet (e.g., find the area of a rectangle).	Incorporate this skill as part of class activities to refresh and strengthen.
Administration Patterns		
Multiple-choice vs. multiple-select	Students choose more than one answer for multiple-choice.	Have students create comparison charts, with examples, to illustrate the difference between the two question types.
Multiple-select	Students only select one correct bubble for multiple-select when more than one correct answer is given.	Create multiple-select items for lessons as discussion topics for groups. Carefully, weigh each answer option. Discuss why each correct answer is correct and vice versa.
Fill-in-the-blank (PBT)	Students do not fill in the grids correctly.	Using Handout 1.A (grades 3-5) or Handout 1.B (grades 6-8), have students compare the acceptable grids to the unacceptable grids and determine what makes for an unacceptable grid. Groups should present their findings to facilitate a whole class discussion.
Open-response	Students address all parts of a task, but not all components of each part.	Have students score their own responses according to the rubric to see how points are awarded for each component.
Open-response (CBT)	Student responses indicate difficulty using the equation builder.	Using the OTT, have students practice entering specific inputs with the equation builder, regardless of what the actual task requires as an answer.
Testing strategies (PBT)	Students skip difficult questions with intentions to return, but cannot find all skipped questions on review.	Have students practice making a list of skipped questions on scratch paper during classroom assessments. Have the class brainstorm other strategies to not forget skipped questions.

[‡] The table in Appendix A lists each item from the PARCC released item sets used in the LEAP practice test and links to the corresponding scoring materials and annotated student responses. For each LEAP practice test, most sub-claim C and D tasks come from the PARCC released item sets and the remaining come from the 2014-15 PARCC practice tests. Any tasks from these sources not used on the LEAP practice tests would be appropriate additional resources.

Observable Pattern	Examples of Pattern	Recommendations
Testing strategies (CBT)	Students skip difficult questions with intentions to return, but cannot find all skipped questions on review.	Have students practice the flagging feature in the OTT by deliberately selecting the "flag" button for specific questions. Once students have flagged the specified questions, have them select "Review/Exit" to see which questions have been answered, which are unanswered, and which have been flagged. Students can practice returning to flagged and unanswered questions to provide answers, and to answered questions to check their work.

VII. Resources

- Math Guidebooks (grades 3-5, grades 6-8): offers comprehensive information to support teachers in creating yearly, unit, and daily instructional plans for students
- Teacher Support Toolbox Library: provides links to grade-specific resources, such as the standards, shared teacher resources, and instructional plans
- EAGLE Sample Test Items: provides teachers a bank of questions that can be used for instructional and assessment purposes
- 2014-15 PARCC Practice Tests: provides teachers and students with additional tasks that are similar to the tasks on the 2016 test, but should not be administered as a "practice test" because test designs for 2015 and 2016 are not the same
- PARCC's Released Items: provides teachers and students with actual test items from the PARCC 2015 test, including rubrics, alignment, and scoring information
- Online Tools Training (OTT): provides teachers and students examples of interactive, technology-enhanced items so they can become familiar with the computer-based testing format
- 2015–2016 LEAP Accessibility Features and Accommodations Overview: provides an overview of Louisiana's accessibility features and accommodations for grades 3–8 spring 2016 testing, clarifying differences between paper-based and online testing
- Guide to the LEAP Online Equation Builder (grades 3-5) (grades 6-8): provides teachers with important grade-specific information for preparing students to use the online equation builder for the computer-based LEAP test
- Guide to Administering the Online Practice Test: provides teachers with information on administering and scoring the online practice test

VIII. Appendix A

The following table includes links to annotated student responses for some items used in the 2015-16 LEAP practice test.[§] All items listed in the table are found on both the paper-based and computer-based practice tests. To access all the PARCC released items and materials go to https://prc.parcconline.org/assessments/parcc-released-items.

Location	PARCC Item ID	Alignment
Grade 3		
pp. 14-15 Session 1: #12	0435-M01415	Sub-claim C: Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed 'student' reasoning is presented and the task is to correct and improve it.) • 2.NBT.B.6, 2.NBT.B.7
p. 18 Session 1: #14	M00819	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 3, requiring application of knowledge and skills articulated in Sub-claim A. • 3.OA.D.8, 3.OA.A.3
p. 31 Session 2: #28	VF442639	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 3, requiring application of knowledge and skills articulated in Sub-claim A. • 3.MD.A.1, 3.OA.D.8
pp. 40-42 Session 3: #40	VF658050	Sub-claim C: Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed 'student' reasoning is presented and the task is to correct and improve it.) • 3.OA.B.6
pp. 44-46 Session 3: #42	0079-M00419	Sub-claim D: Solve multi-step contextual problems with degree of difficulty appropriate to Grade 3, requiring application of knowledge and skills articulated in 2.OA.A, 2.OA.B, 2.NBT, and/or 2.MD.B. • 2.OA.A.1, 2.NBT.B.5
Grade 4		
pp. 14-16 Session 1: #12	0493-M02313Y	Sub-claim C: Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed 'student' reasoning is presented and the task is to correct and improve it.) • 3.MD.C.5, 3.MD.C.6, 3.MD.C.7
pp. 18-19 Session 1: #14	0228-M00781	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 4, requiring application of knowledge and skills articulated in Sub-claim A. • 4.OA.A.3, 4.NBT.B.4

[§] These released items originally appeared on the PARCC 2015 assessments and all student work is authentic.

Location	PARCC Item ID	Alignment
p. 31 Session 2: #26	M00778	Sub-claim C: Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response) • 4.NF.B.4a, 4.NF.B.4b
p. 34 Session 2: #28	M02320	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 4, requiring application of knowledge and skills articulated in Sub-claim A. • 4.OA.A.2, 4.NF.B.4c
p. 44 Session 3: #40	M02080	Sub-claim C: Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. • 4.NF.B.3c
Grade 5		
pp.12-13 Session 1: #11	VF735884	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 5, requiring application of knowledge and skills articulated in Sub-claim A. • 5.NBT.B.7, 5.OA.A.2
p. 25 Session 2: #23	M01285	Sub-claim C: Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed 'student' reasoning is presented and the task is to correct and improve it.) • 5.NF.A.1
p. 29 Session 2: #28	VF822728	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 5, requiring application of knowledge and skills articulated in Sub-claim A. • 5.NBT.B.5
p. 40 Session 3: #42	M02372	Sub-claim C: Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). • 5.NF.B.7a, 5.NF.B.7b
Grade 6		
p. 25 Session 2: #27	VF888578	Sub-claim D: Reasoned estimates: Use reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity requiring knowledge and skills articulated in Sub-claim A. • 6.NS.B.3, 6.NS.B.4, 6.G.A.1
p. 29 Session 2: #30	M21482	Sub-claim C: Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. • 6.NS.A.1

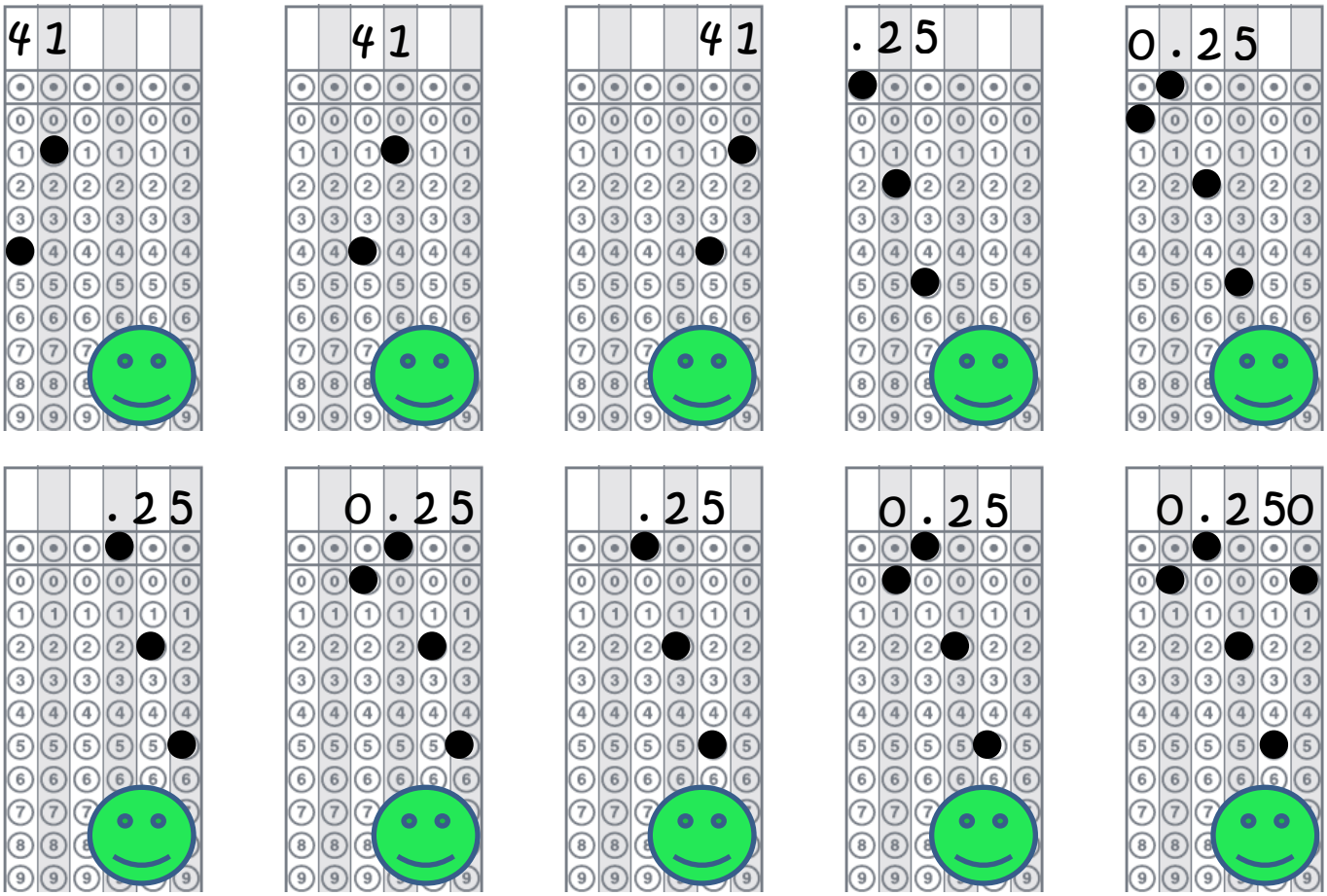
Location	PARCC Item ID	Alignment
pp. 30-31 Session 2: #31	VF643084	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 6, requiring application of knowledge and skills articulated in Sub-claim A. • 6.RP.A.3b, 6.EE.A.2a, 6.EE.A.2c, 6.EE.B.6
pp. 32-33 Session 2: #32	1167-M20992	Sub-claim C: Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). • 6.NS.C.6a, 6.NS.C.6, 6.NS.C.7c, 6.NS.C.7d
p. 44 Session 3: #41	VF886112	Sub-claim C: Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed 'student' reasoning is presented and the task is to correct and improve it.) • 5.NBT.A.1, 5.NBT.A.2
pp. 46-47 Session 3: #43	VF799733	Sub-claim D: Solve multi-step contextual problems with degree of difficulty appropriate to Grade 6, requiring application of knowledge and skills articulated in 5.NBT.B, 5.NF, 5.MD, and 5.G.A. • 5.MD.A.1, 5.MD.B.2, 5.NF.A.2, 5.NF.B.6
Grade 7		
p. 26 Session 2: #28	M21894	Sub-claim D: Reasoned estimates: Use reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity using skills and knowledge articulated in Sub-claim A. • 7.NS.A.3, 7.SP.A.2, 7.EE.B.3
p. 27 Session 2: #29	VF650458	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 7, requiring application of knowledge and skills articulated in Sub-claim A • 7.NS.A.3, 7.EE.B.3
p. 36 Session 3: #36	M20592	Sub-claim C: Given an equation, present the solution steps as a logical argument that concludes with the set of solutions (if any). • 7.EE.B.4a
pp. 42-43 Session 3: #41	VH030360	Sub-claim C: Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. • 6.NS.C.6b, 6.NS.C.8
Grade 8		
p. 31 Session 2: #30	VF525935	Sub-claim C: Given an equation or system of equations, present the solution steps as a logical argument that concludes with the set of solutions (if any). • 8.EE.C.7a, 8.EE.C.7b

Location	PARCC Item ID	Alignment
p. 35 Session 2: #32	M20534	Sub-claim D: Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 8, requiring application of knowledge and skills articulated in Sub-claim A. • 8.F.A.2, 8.EE.B.5
pp. 42-43 Session 3: #37	1175-M21072	Sub-claim C: Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. • 8.G.A.5
pp. 48-49 Session 3: #41	1419-M21875	Sub-claim C: Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. • 7.RP.A.3, 7.NS.A.3
pp. 50-52 Session 3: #42	VF654810	Sub-claim D: Solve multi-step contextual problems with degree of difficulty appropriate to grade 8, requiring application of knowledge and skills articulated in 7.RP.A, 7.NS.3, 7.EE, 7.G, and 7.SP.B. • 7.RP.A.1, 7.RP.A.2b, 7.RP.A.3

IX. Appendix B

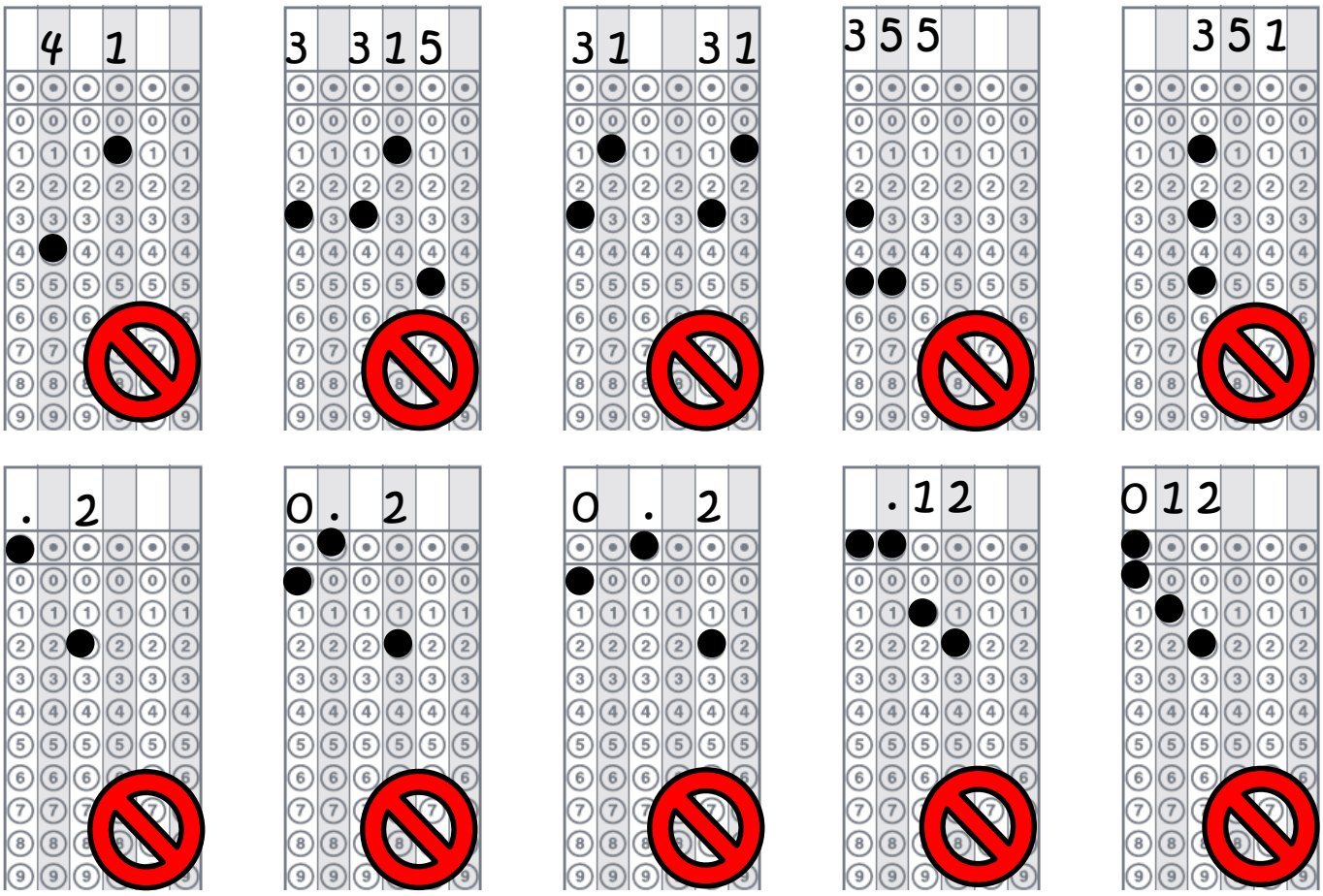
Handout 1.A: Fill-in-the-Blank Visual Guide

Acceptable Ways to Grid Answers[**]



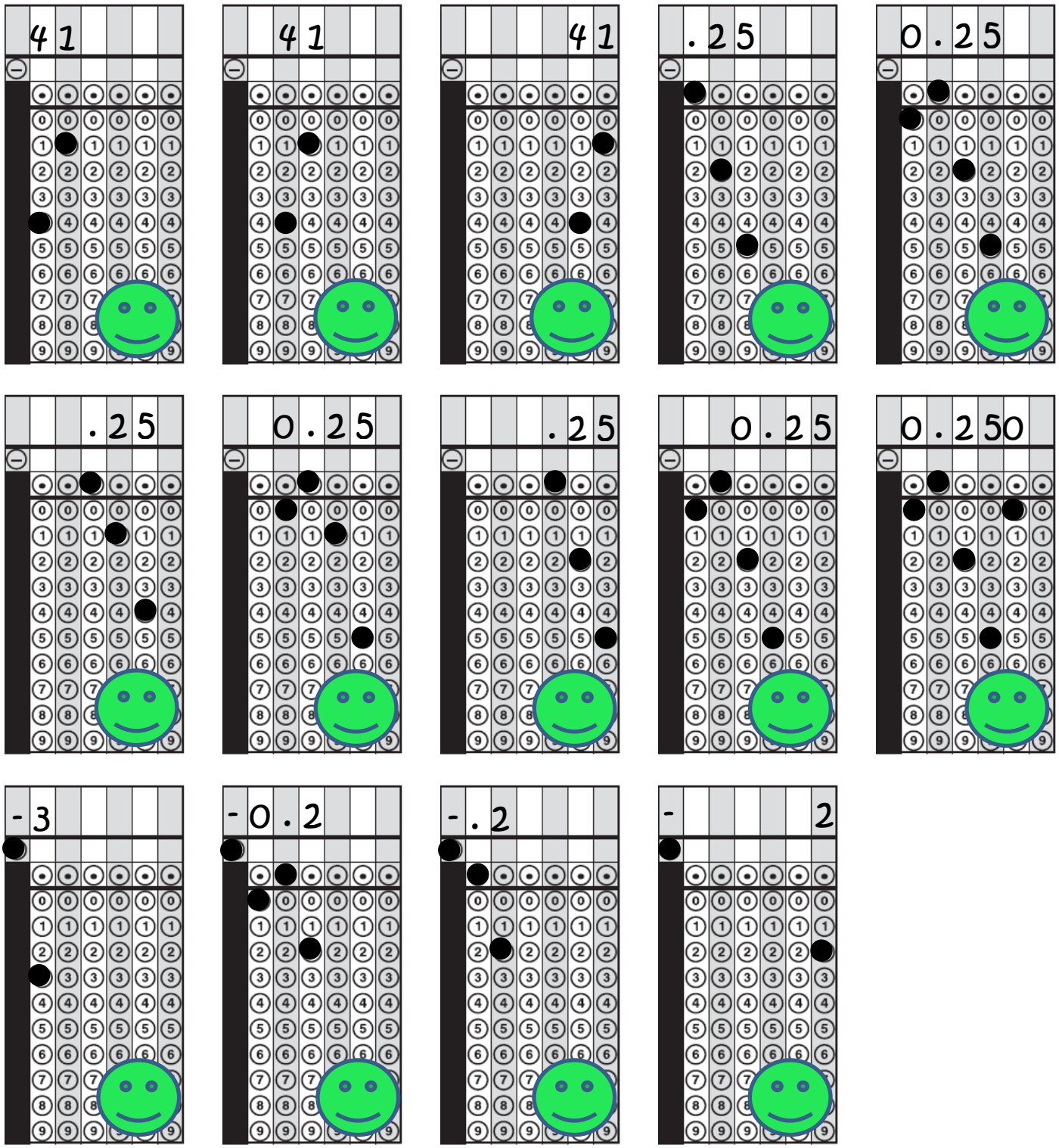
[**] Only the first 3 samples apply to grade 3. Teachers should discuss ignoring the decimal row with grade 3 students.

Unacceptable Ways to Grid Answers[††]

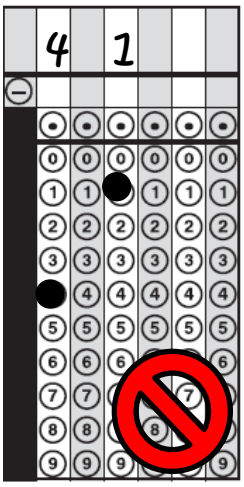


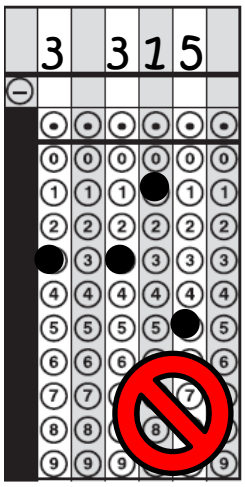
[††] Samples containing decimals do not apply to grade 3 students. Grade 3 students may also confuse the decimals with commas.

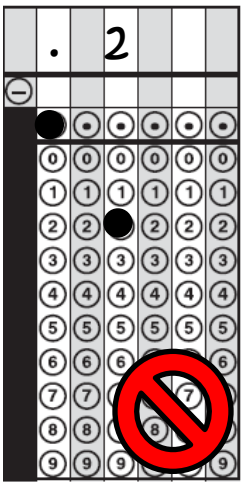
Handout 1.B: Fill-in-the-Blank Visual Guide
Acceptable Ways to Grid Answers

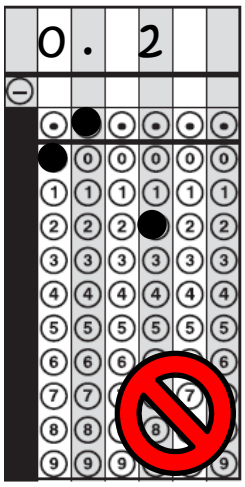


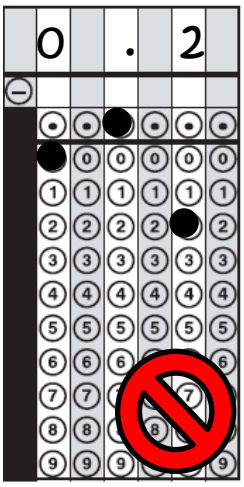
Unacceptable Ways to Grid Answers

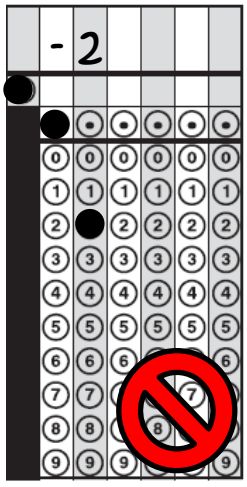


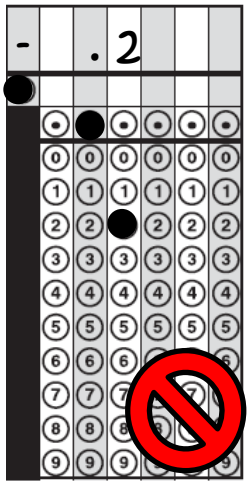


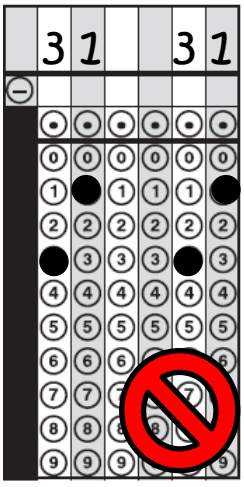


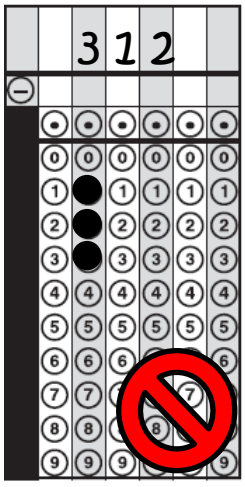


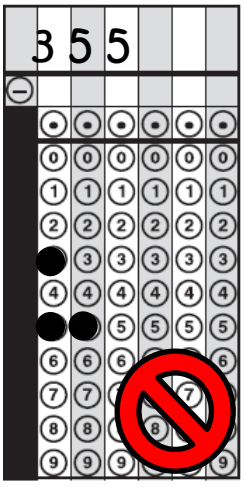


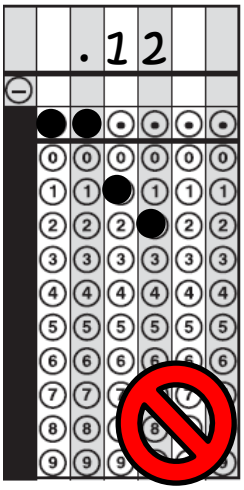


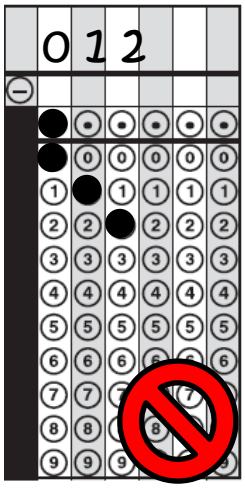












Handout 2
Guiding Questions and Discussion Topics

Discuss the following questions as a whole class or in small groups.

1. What do the directions for multiple-select questions look like?
2. What are some differences between multiple-choice and multiple-select questions?
3. Is multiple-select more challenging than multiple-choice? Why or why not?
4. What are important steps to know about completing fill-in-the-blank test questions?
5. What do you do if you get a fraction as an answer for a fill-in-the-blank test questions?
6. What do you do if the answer you get for a fill-in-the-blank item doesn't fit in the spaces provided?
7. What are important things to remember if you plan to cross-out, underline, or highlight answer choices?
8. What are some ways to keep track of skipped test questions?

Discuss the following topics as a whole class or in small groups.

1. Most challenging questions vs. least challenging questions
2. Concerns about completing the test in the given amount of time and time-management strategies
3. Concerns about problem-solving and/or fluency items
4. Differences in problem-solving strategies among students