LOUISIANA DEPARTMENT OF EDUCATION

Office of Assessments, Accountability, and Analytics

LEAP Assessment Guide for Grade 7 Mathematics

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Purpose

This document is designed to assist Louisiana educators in understanding the LEAP Grade 7 Mathematics assessment.

Introduction

All students in grades 3–8, Algebra I, and Geometry will take the LEAP assessments, which provide

- questions that have been reviewed by Louisiana educators to ensure their alignment to the K-12 Louisiana Student Standards for Mathematics and appropriateness for all Louisiana students;
- measurement of the full range of student performance; and
- information for educators and parents about student readiness in mathematics and whether students are “on track” for college and careers.

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doe.louisiana.gov | P.O. Box 94064 • Baton Rouge, LA • 70804-9064

Vision for Mathematics Standards and Assessment

Students in Louisiana are ready for college or a career if they are able to meet college and workplace expectations without needing remediation in mathematics skills and concepts. The K-12 Louisiana Student Standards for Mathematics support students to become mathematically proficient by focusing on three components of rigor: conceptual understanding, procedural skill and fluency, and application.

- **Conceptual understanding** refers to understanding mathematical concepts, operations, and relations. It is more than knowing isolated facts and methods. Students should be able to make sense of why a mathematical idea is important and the kinds of contexts in which it is useful. It also allows students to connect prior knowledge to new ideas and concepts.
- **Procedural skill and fluency** is the ability to apply procedures accurately, efficiently, and flexibly. It requires speed and accuracy in calculation while giving students opportunities to practice basic skills. Students' ability to solve more complex application tasks is dependent on procedural skill and fluency.
- **Application** provides a valuable context for learning and the opportunity to solve problems in a relevant and a meaningful way. It is through real-world application that students learn to select an efficient method to find a solution, determine whether the solution(s) makes sense by reasoning, and develop critical thinking skills.

Assessment Design

Supporting Mathematics Instruction

The LEAP mathematics assessments focus on testing the LSSM according to the components of rigor reflected in high-quality mathematics instructional materials that

- require students to demonstrate understanding of mathematical reasoning in mathematical and applied contexts;
- assess accurate, efficient, and flexible application of procedures and algorithms;
- rely on application of procedural skill and fluency to solve complex problems; and
- require students to demonstrate mathematical reasoning and modeling in real-world contexts.

Assessable Content

Each item on the LEAP mathematics assessments is referred to as a task and is identified by one of three types: Type I, Type II, or Type III. All task types are aligned directly to the K-12 Louisiana Student Standards for Mathematics. Type I tasks are further aligned to LEAP mathematics evidence statements for the Major Content and Additional & Supporting reporting categories and allow for the testing of more than one of the student standards on a single task. Type II and III tasks are further aligned to LEAP mathematics evidence statements for the Mathematical Reasoning & Modeling reporting category.

- **Type I tasks** are designed to assess conceptual understanding, fluency, and application, and are aligned to the major, additional, and supporting content for the grade or course.
- **Type II tasks** are designed to assess student reasoning ability of selected content in applied contexts.
- **Type III tasks** are designed to assess student modeling ability of selected content in applied contexts.

LEAP Mathematics Evidence Statements

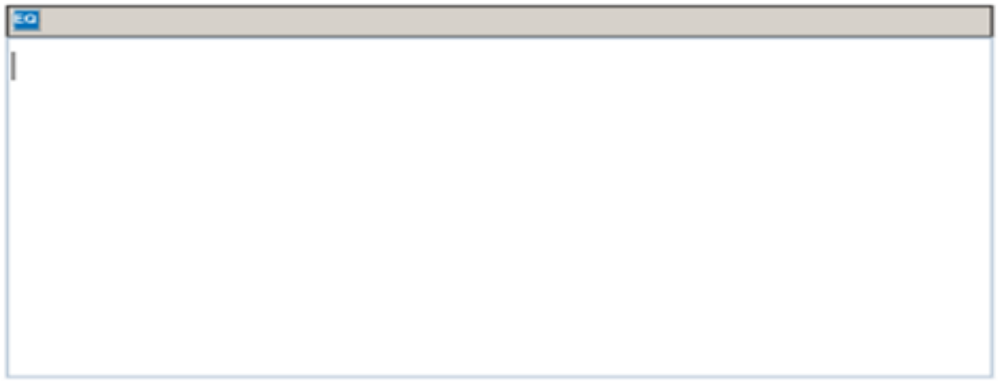
LEAP mathematics evidence statements are labeled to include the task type (I, II, or III) and the grade (3, 4, 5, 6, 7, or 8) or course (A1 or GM). LEAP evidence statements for grade 7 are labeled as "LEAP.II.7.#" for Type II tasks and "LEAP.III.7.#" for Type III tasks. See the table in Appendix A for a listing of assessable content of the LSSM and LEAP mathematics evidence statements.

Item Types

All of the item types in the following list will appear on the tests.

- Multiple Choice (MC) – This item type asks students to choose one correct answer from four and may appear as a one-part question, as part of a two-part question, or as a part of a CR item. The MC items are worth one point.
- Multiple Select (MS) – This item type asks students to choose **more than one** correct answer and may appear as a one-part question, as part of a two-part question, or as a part of a CR item. Whenever this item type is used, the question always identifies in boldface print that more than one answer is required. The question **may or may not** specify the exact number of correct answers. The MS items are worth one point. Students must choose **all correct answers and no incorrect** answer can be chosen.
- Short Answer (SA) – This item type asks students to key numeric answers into an entry box using the keyboard and may appear as a one-part question, as part of a two-part question, or as a part of a CR item. The SA items are worth one point. Unless specified in the question, a student will earn credit for an answer that is mathematically equivalent to the correct numerical answer. Answers to SA items can be positive or negative and must be entered in integer or decimal form.
- Keypad Input (KI) – This item type asks students to key numeric or algebraic answers in the form of fractions, mixed numbers, expressions, equations, or inequalities. This item type may appear as a one-part question, as part of a two-part question, or as a part of a constructed-response item. The KI items are worth one point. Unless specified in the question, a student will earn credit for an answer that is equivalent to the correct numeric or algebraic response.
- Technology Enhanced (TE) – This item type uses technology to capture student responses and may appear as a one-part question, as part of a two-part question, or as a part of a CR item. The TE items are worth one point. Students must meet the requirements of the question exactly to receive credit. The Online Tools Training (OTT) allows students to practice answering the different types of TE questions. For a summary of the different styles of technology-enhanced items refer to the LEAP Technology-Enhanced Item Types document.

- Constructed Response (CR) – This item type can be single- or multi-part. CR items ask students to create a written explanation or justification, model a process, and/or compute an answer to earn a series of points. A student may receive partial or full credit on CR items, but maximum point values will vary by task. Maximum values for CR items are 3, 4, or 6 points. When responding to a CR item, students will type their responses into a response box, like the one shown.



Response Box

The response box allows students to use the keyboard to type in their response or work. There is a limit to the number of characters that can be typed in the response box; however, it is set well beyond what a student might produce based on grade-specific expectations of the item. The toolbar at the top of the response box has the Equation Builder tool that allows the students to create a response with commonly used grade-specific mathematical symbols.

Equation Builder

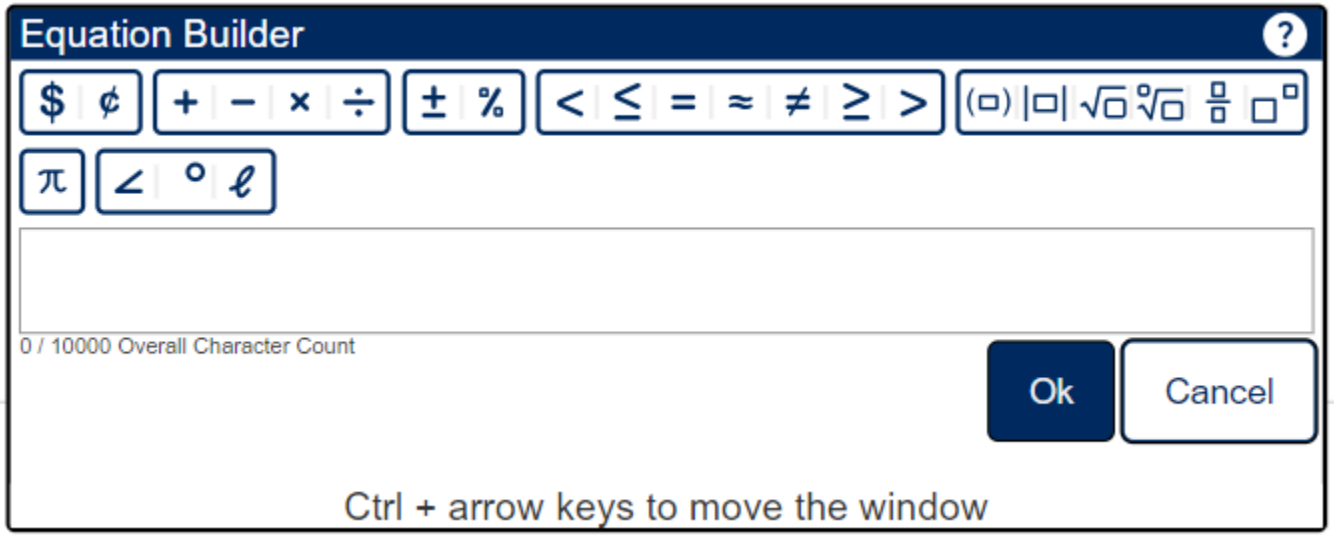
Students are **not** required to use the equation builder for any symbols that are also available on the keyboard. For example, students may use a slash, forward / or back \, to represent a fraction, a carat ^ to represent exponents, or a pair of pipes || to represent absolute value.

Additionally, symbols like degree ° and perpendicular ⊥ are not available on the keyboard, but students may type the words “degrees” and “perpendicular” as necessary. Other symbols, such as square root √ and pi π, are not available on the keyboard, but may be required in symbol form for expressions and equations.

The Equation Builder does not include all symbols/characters students might need to type into the response box. Students should know how to type a negative sign - and a colon : using the keyboard. The × button in the Equation Builder is a multiplication symbol and should not be used as a variable x, but students are not penalized if they do.

Using the Equation Builder

- To enter text, click the pointer in the **Response Box** and type text using the keyboard.
- Click on the **Equation Builder button** to open the tool and enter any mathematical symbols, characters, or format.
- When finished, click on the **OK** button in the lower-right corner of the Equation Builder tool – the equation will be entered into the response box.
- To cancel what you have entered, click on the **Cancel** button in the lower-right corner of the Equation Builder tool and you will be returned to the response box.
- To edit an existing equation, double-click on the equation in the Response Box. This will re-open the Equation Builder.



Test Design

The LEAP mathematics assessment in grade 7 contains a total of 37 tasks for 55 points. The table below shows the breakdown of the number of tasks and point values by Reporting Category and Session. The LEAP mathematics test is **timed**. No additional time is permitted, except for students who have a documented extended time accommodation (e.g., an IEP).

Reporting Category	Session 1		Session 2		Session 3		Total	
	Tasks	Points	Tasks	Points	Tasks	Points	Tasks	Points
A - Major Content	15-19	19	2-4	4	2-4	4	23-27	27
B - Additional & Supporting Content	0	0	3-5	5	2-4	4	5-9	9
C - Mathematical Reasoning & Modeling	0	0	2	9	3	10	5	19
Total Operational	15-19	19	9-10	18	9-11	18	37	55
Total Field-Test	1-2	N/A	1-2	N/A	1	N/A	3-5	N/A
Session Time	60 minutes		75 minutes		75 minutes		210 minutes	

Note: The test contains field-test tasks, which **do not** count toward the test score; they provide information that will be used to develop future test forms.

The following table includes information on the total tasks, total points, and percentage of assessment points by task-type point-values.

Task Types	Point Values	Total Tasks	Total Points		Percentage of Points	
Type I	1-point	28	28	36	51%	66%
	2-point	4	8		14.5%	
Type II	3-point	2	6	10	11%	18%
	4-point	1	4		7%	
Type III	3-point	1	3	9	5.5%	16%
	6-point	1	6		11%	
Total		37	55		100%	

Reporting Categories

Each of the three task types is aligned to one of three reporting categories: Major Content, Additional & Supporting Content, or Mathematical Reasoning & Modeling. Each task type is designed to align with at least one of the Louisiana Student Standards for Mathematical Practice (MP), found on pages 6-8 in the K-12 Louisiana Student Standards for Mathematics.

Task Type	Description	Reporting Category	Mathematical Practice
Type I	conceptual understanding, fluency, application	**A - Major Content:** solve problems involving the major content for grade 7 **B - Additional & Supporting Content:** solve problems involving the additional and supporting content for grade 7	may align with any or all practices
Type II	written argument/justification, critique of reasoning/precision in mathematical statements	**C - Mathematical Reasoning & Modeling:** express mathematical reasoning by constructing mathematical arguments and critiques; solve real-world problems engaging particularly in the modeling practice	primarily MP.3, MP.4, and MP.6, but may also involve any of the other practices
Type III	modeling or application in a real-world context		

The Major Content reporting category is divided, based on Achievement Level Descriptors, into the following subcategories.

Subcategory	LSSM and LEAP Mathematics Evidence Statements	Description
Analyze Proportional Relationships and Solve Problems	7.RP.A.1, 7.RP.A.2, 7.RP.A.3	Students interpret, analyze, and apply proportional relationships to solve multi-step mathematical and real-world problems, including percent.
Operations with Rational Numbers	7.NS.A.1, 7.NS.A.2, 7.NS.A.3, 7.EE.B.3	Students solve mathematical and real-world problems using the four operations with rational numbers, including representation of operations on a number line diagram.
Expressions, Equations, and Inequalities	7.EE.A.1, 7.EE.A.2, 7.EE.B.4	Students apply properties of operations to generate equivalent linear expressions. Students write, solve, and graph solutions of two-step equations and inequalities posed from mathematical and real-world problems

These reporting categories will provide parents and educators valuable information about

- overall student performance, including readiness to continue further studies in mathematics;
- student performance broken down by mathematics content and practices, which may help identify when students need additional support or more challenging work;
- student performance in Major Content broken down by content subcategories, which may help teachers and schools hone in on specific content for professional development; and
- how well schools and schools systems are helping students achieve higher expectations.

Achievement-Level Definitions

Achievement-level definitions briefly describe the expectations for student performance at each of Louisiana's five achievement levels:

- **Advanced:** Students performing at this level have **exceeded** college and career readiness expectations and are well prepared for the next level of study in this content area.
- **Mastery:** Students performing at this level have **met** college and career readiness expectations and are prepared for the next level of study in this content area.
- **Basic:** Students performing at this level have **nearly met** college and career readiness expectations and may need additional support to be fully prepared for the next level of study in this content area.
- **Approaching Basic:** Students performing at this level have **partially met** college and career readiness expectations and will need much support to be prepared for the next level of study in this content area.
- **Unsatisfactory:** Students performing at this level have **not yet met** the college and career readiness expectations and will need extensive support to be prepared for the next level of study in this content area.

Achievement Level Descriptors

Achievement Level Descriptors (ALDs) indicate what a typical student at each level should be able to demonstrate based on his or her command of grade-level standards. ALDs are written for the four assessment reporting categories. Access the ALDs in the Assessment Resources Webpage for a breakdown of the knowledge, skills, and practices associated with each achievement level.

Test Administration

Administration Information

The testing window opens April 1, 2027, and runs through May 12, 2027 for all computer-based tests. The school or district test coordinator will communicate each school's testing schedule. For updates to the testing schedule, refer to the 2026-2027 Louisiana Assessment Calendar. All LEAP assessments are **timed**. No additional time is permitted, except for students who have a documented extended time accommodation (e.g., an IEP).

Scheduling Requirements for Computer-Based Testing

Computer-based testing allows school systems some flexibility in scheduling. However, to reduce incidences of testing irregularities, school systems **must** adhere to the following scheduling and administration practices:

- Testing students in the same grade level across the school at or very close to the same time
- Completing makeup testing for students immediately upon their return
- Limiting student interaction during breaks between test sessions
- Isolating students who have not completed testing for the day (e.g., students with extended time accommodation)
- Preventing interaction between groups of students taking the same tests at different times within a testing day
- Requiring the completion of a session once it is opened (i.e., limiting the reopening of test sessions)
- Taking the sessions within a content area in the correct order (e.g., Math Session 1 taken before Math Session 2)

The following is also recommended:

- Limiting sessions to no more than three in one day for a student

For more information about scheduling and administration policies, refer to the Online Assessment Scheduling Guidance, found in the LDOE Assessment Resources Webpage.

Spanish Mathematics Guidelines

Spanish-language versions of the LEAP mathematics assessments are available as an accommodation for Spanish-speaking English learners. The following guidelines should be used when assigning a student to a Spanish-language mathematics assessment. The student should meet at least one of the following criteria:

- student whose primary language is Spanish and who receives instruction in Spanish
- student who is a recently arrived EL and had prior instruction in mathematics in Spanish
- student who is enrolled in a dual-language immersion program that includes mathematics taught in Spanish

Consideration of the following is strongly urged when deciding which version of the mathematics assessment form (i.e., English-language or Spanish-language version) is best for a Spanish-speaking student.

- The language in which a student receives instruction affects their performance.
- A Spanish-speaking student who is not receiving instruction in Spanish may not have knowledge of math-specific terms translated to Spanish.
- A Spanish-speaking student may not have the literacy skills required to read in Spanish (speaking Spanish is not the same as reading Spanish).

If a teacher is unsure whether the Spanish-language version is appropriate for a specific student, it is recommended that the student take one session of the LEAP mathematics practice test in English and one session in Spanish in order to determine the language in which the student is most comfortable.

Testing Materials

The chart that follows summarizes the tools and resources for the grade 7 mathematics assessment.

Tools	Provided	Session 1	Sessions 2 & 3	Guidelines
scratch paper (lined, graph, unlined), two pencils	by Test Administrator	YES	YES	• Reference sheets may be printed from the DRC Insight Portal (eDIRECT) • Tools provided by Test Administrator must not be written on • See Calculator Policy for calculator specifications
$\frac{1}{8}$ –inch ruler, centimeter ruler, and protractor	online	YES	YES	
calculator	online and/or by Test Administrator	NO	YES	
Grade 7 Mathematics Reference Sheet	online and/or by Test Administrator	YES	YES	

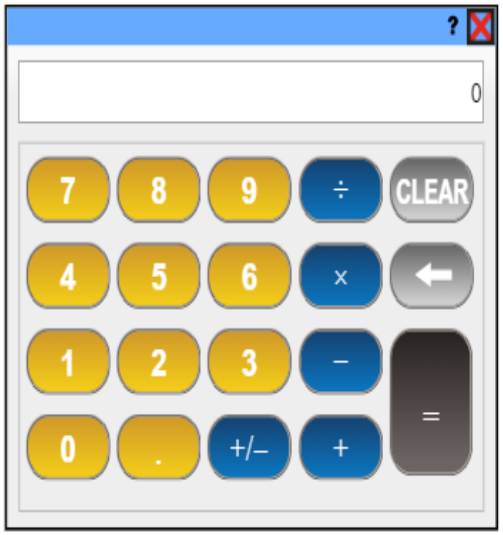
Calculator Policy

The LEAP mathematics assessment allows a four-function calculator in grade 7 during Sessions 2 and 3. Calculators are **not** allowed during Session 1 of the test. For students with the approved accommodation, a hand-held four-function calculator is allowed during all test sessions. The following table includes calculator information by session for both general testers and testers with approved accommodations for calculator use.

Calculator Policy	Session 1	Sessions 2 & 3
General Testers	Not allowed	Four-function calculator available online, may also have hand-held
Testers with approved accommodation for calculator use	Four-function calculator available online, may also have handheld	
Additional information for testers with approved accommodations for calculator use: • If a student needs an adaptive calculator (e.g., large key, talking), the student may bring his or her own or the school may provide one, as long as it is specified in his or her approved IEP or 504 Plan.		

Additionally, schools must adhere to the following guidance regarding calculators.

- Four-function calculators may have square root, percent, memory, and +/- keys.
- Calculators with the following features are **not** permitted:
  - Computer Algebra System (CAS) features
  - "QWERTY" keyboards
  - paper tape
  - talk or make noise, unless specified in IEP/IAP
  - tablet, laptop (or PDA), phone-based, or wristwatch
- Students are **not** allowed to share calculators within a testing session.
- Test administrators must confirm that memory on all calculators has been cleared before and after the testing sessions.
- The student should use the calculator they have used regularly throughout the school year in their classroom and are most familiar with, provided their regular-use calculator is not outside the boundaries of what is allowed.
- If schools or school systems permit students to bring their own hand-held calculators, test administrators must confirm that the calculators meet all the requirements as defined above.



Reference Sheet

Students in grade 7 will be provided a reference sheet with the information shown below. The Grade 7 Mathematics Reference Sheet may be printed from the DRC Insight Portal (eDirect) or found in the Assessment Guidance webpage on page 3 of LEAP Grades 5-HS Mathematics Reference Sheets.

- 1 inch = 2.54 cm
- 1 m = 39.37 inches
- 1 mile = 5280 feet
- 1 mile = 1760 yards
- 1 mile = 1.609 km
- 1 km = 0.62 mile

- 1 pound = 16 ounces
- 1 pound = 0.454 kg
- 1 kg = 2.2 pounds
- 1 ton = 2000 pounds

- 1 cup = 8 fluid ounces
- 1 pint = 2 cups
- 1 quart = 2 pints
- 1 gallon = 4 quarts
- 1 gallon = 3.785 L
- 1 L = 0.264 gallon

Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$ $C = \pi d \text{ or } C = 2\pi r$
General Prisms	$V = Bh$

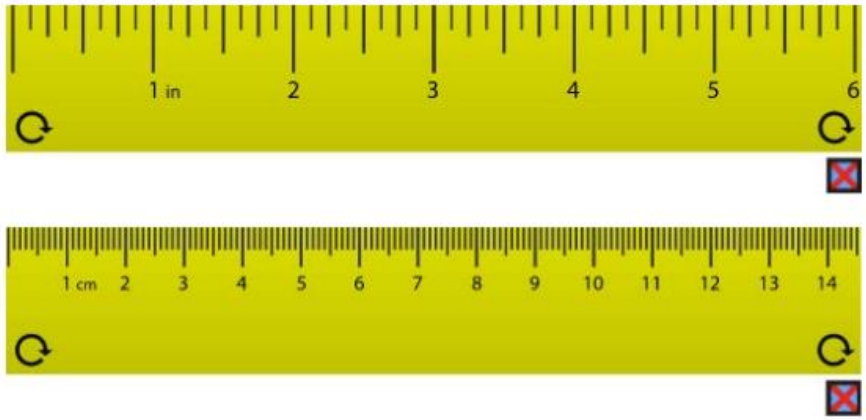
Students in grade 7 will be required to know relative sizes of measurement units within one system of units. Therefore, the following requisite knowledge is necessary for the grade 7 assessments and is not provided in the reference sheet.

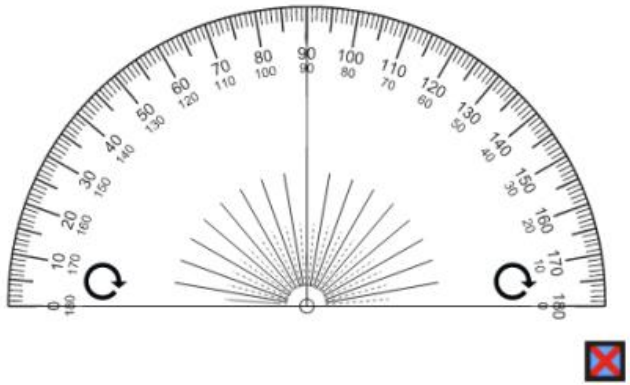
Requisite Knowledge

- 1 m = 100 cm
- 1 m = 1000 mm
- 1 km = 1000 m
- 1 kg = 1000 g
- 1 g = 1000 mg
- 1 L = 1000 mL
- 1 foot = 12 inches
- 1 yard = 3 feet
- 1 day = 24 hours
- 1 minute = 60 seconds
- 1 hour = 60 minutes
- Area and Perimeter formulas for rectangles

Measurement Tools

Grade 7 rulers and protractor provided on the LEAP CBT (not actual size):





Testing Platform

Students taking the computer-based tests will enter their answers into the online testing system. The way each answer is entered depends on the task type. The computer-based tests include the following online tools, which allow a student to select answer choices, “mark” tasks, eliminate answer options, highlight specific information, take notes, enlarge the task, guide the reading of a task line by line, use a ruler, apply a mask to cover a part of their screen, see the mathematics reference sheet, use a calculator, and use an equation builder for entering special characters. A help tool is also featured to assist students as they use the online system.

- Pointer

- Cross-off

- Highlighter

- Sticky note

- Magnifier

- Line guide

- Measurement Tools

- Masking

- Reference Sheet

- Calculator

- Help

- Equation Builder

Note: The images to the left represent both ways students will see the online tools. All tools, except the equation builder, will have a white background. When a student hovers the curser over the icon, it will change the background to blue as shown.

All students taking the computer-based test should work through the Online Tools Training, using the online tools so students are well prepared to navigate the online testing system.

Sample Test Items

This section includes seven Type I tasks, one Type II task, and one Type III task as they would appear on a test. The answer keys for each Type I task and scoring rubrics for each constructed-response task are located in Appendix B. Look for some of these tasks in the OTT.

Multiple-Choice Task

A scuba diver standing on a boat is at an altitude of 1.3 meters above sea level. The scuba diver jumps into the water and decreases his altitude by 5.6 meters in one minute.

Which equation can be used to determine the scuba diver's altitude, in meters relative to sea level, one minute after jumping into the water?

(a) $1.3 + 5.6 = 6.9$

(b) $-1.3 + 5.6 = 4.3$

(c) $1.3 + (-5.6) = -4.3$

(d) $-1.3 + (-5.6) = -6.9$

Multiple-Select Task

Lashawn randomly surveys students in his school about which activities they prefer. Students choose from hiking, reading, and swimming. Lashawn's results are shown in the table.

Student Survey

Activity	Hiking	Reading	Swimming
Number of Students	7	9	4

Based on Lashawn's results, select **all** predictions that can be made about randomly selected groups of students in his school.

(a) Out of 20 students, about 14 will prefer hiking.

(b) Out of 25 students, about 5 will prefer swimming.

(c) Out of 100 students about 20 will prefer swimming.

(d) Out of 200 students, about 90 will prefer reading.

(e) Out of 500 students, about 200 will prefer hiking or swimming.

Short Answer Task

Last week, the value of an investment changed at a rate of −$3.15 each day. After how many days was the total change in value −$12.60?
Enter your answer in the box.

Keypad Input Task

Solve the equation.

$8(x + 6) = 43$

What is the value of x?

Enter your answer in the box.

TE: Dropdown Menu Task

On Monday, the temperature at 10 a.m. at Sam's house was −6° Fahrenheit. The temperature at 2 p.m. at Sam's house was 2° Fahrenheit.

Select from the drop-down menus to correctly complete the statement.

From 10 a.m. to 2 p.m., the temperature at Sam's house [Choose...] by [Choose...]° Fahrenheit.

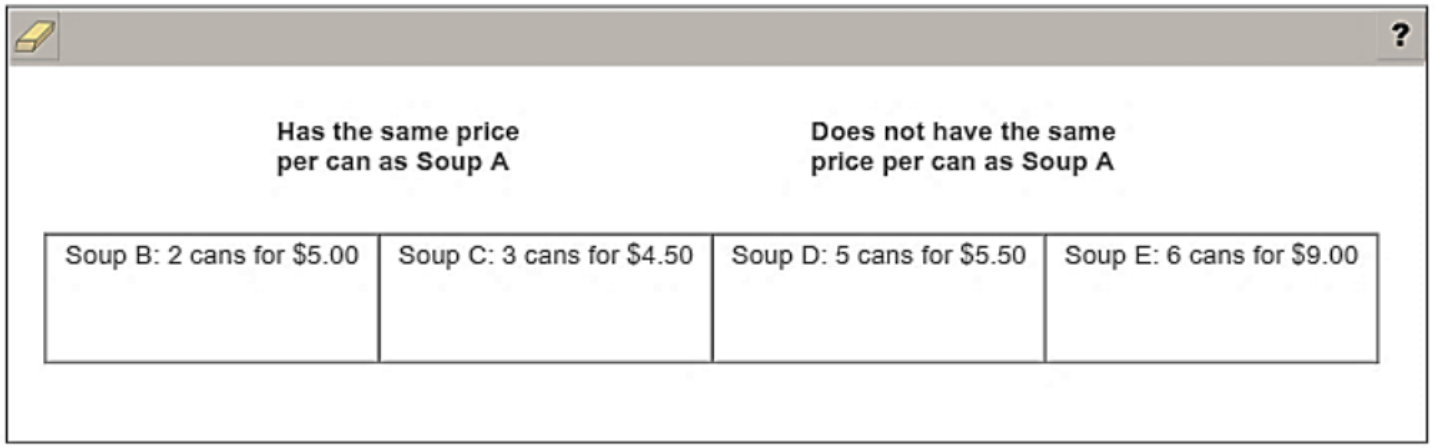
Choose...	Choose...
Choose...	Choose...
increased	3
decreased	4
	8
	12

TE: Drag-and-Drop Task

Ted bought 4 cans of Soup A for $6.00.

For each soup in the table, indicate whether or not the soup has the same price per can as Soup A.

Drag and drop the appropriate phrase into each box.



TE: Match Interaction Task

Ed is a farmer who charges $3.75 for 5 pounds of cabbage. This table shows the rates charged for cabbage by some other farmers.

Determine whether the unit rate charged for cabbage by the other farmers is less than, equal to, or greater than the unit rate charged by Ed.

Select one cell per row.

	Unit Rate Less than Ed's Unit Rate	Unit Rate Equal to Ed's Unit Rate	Unit Rate Greater than Ed's Unit Rate
Farmer A: \$0.50 for $\frac{1}{2}$ pound	☐	☐	☐
Farmer B: \$0.75 for 1 pound	☐	☐	☐
Farmer C: \$1.75 for $2\frac{1}{2}$ pounds	☐	☐	☐
Farmer D: \$6.00 for 8 pounds	☐	☐	☐

Type II Constructed-Response Task

The table represents a proportional relationship.

x	*y*
6	7.5
8	10.0
10	12.5

A student states that the constant of proportionality is 2.5 since 10 – 7.5 = 2.5.

- Explain why the student's reasoning is incorrect.
- Find the correct constant of proportionality. Show your work or explain your answer.

Enter your explanations, your answer, and your work in the box provided.

EQ

Type III Constructed-Response Task

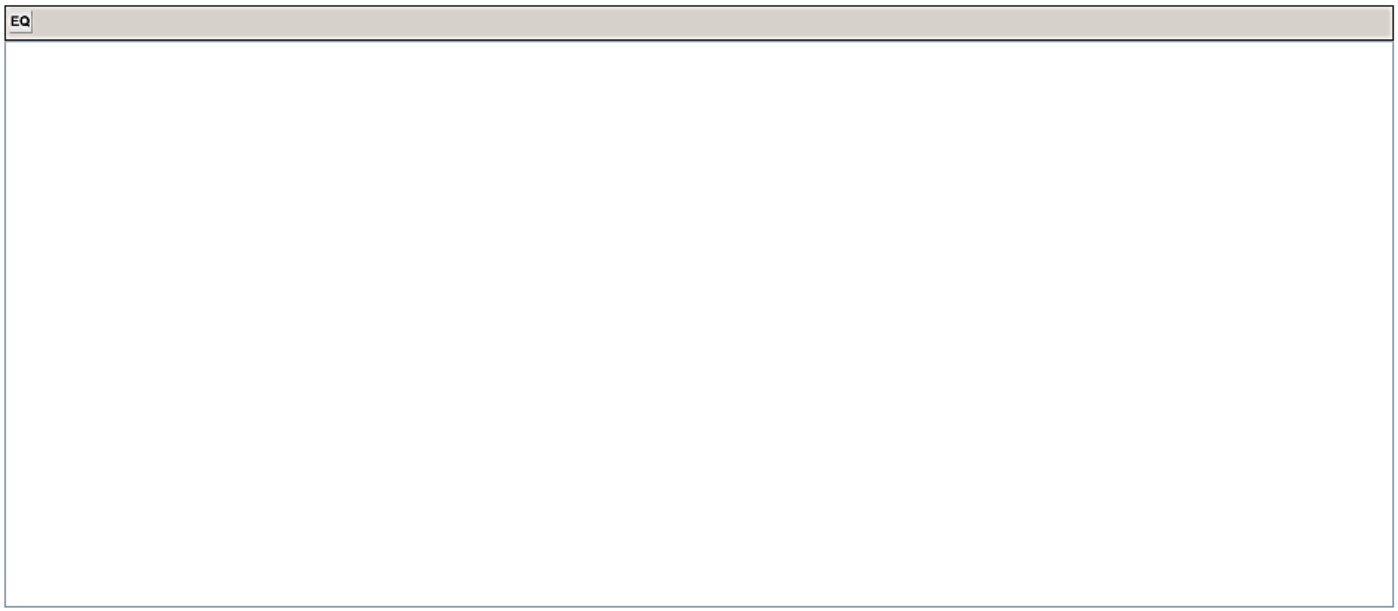
Rita gets paid $16 per hour for the first 8 hours she works each day. She earns $1\frac{1}{2}$ times her hourly pay rate for time she works over 8 hours each day. Rita's work day for Monday is described in the list.

- worked from 8:15 a.m. to 12:45 p.m.
- took a 45-minute lunch break
- worked until 6:15 p.m.

Rita does not get paid for her lunch break.

How much money did Rita earn for the time she worked on Monday? Show or explain all of the steps you used to determine your answer.

Enter your answer and your work or explanation in the space provided.



Resources

Assessment Guidance Webpage

- LEAP Equation Builder for Grades 6-8: provides teachers with information on using the equation builder; Spanish
- LEAP Grades 5-HS Mathematics Reference Sheets: includes all the mathematics references sheets provided for LEAP testing
- Assessment Development Educator Review Committees: describes the item development process and associated committees, includes information on applying for participation

Practice Test Webpage

- LEAP Grade 7 CBT Practice Test and Answer Key: includes answer keys, scoring rubrics, and alignment information; Spanish
- LEAP Mathematics Practice Test Guidance: provides guidance on using the mathematics practice tests to support instructional goals
- Practice Test Quick Start Guide: provides information regarding administration and scoring of the online practice tests

Assessment Resources Webpage

- LEAP Accessibility and Accommodations Manual: provides information about accessibility features and accommodations
- LEAP Technology Enhanced Item Types: provides a summary of technology enhanced items
- Achievement Level Descriptors: descriptions of the knowledge, skills, and cognitive processes that students should demonstrate with relative consistency and accuracy at each level of achievement
- LEAP 360: non-summative assessment system; includes diagnostic and interim assessments

DRC INSIGHT Portal (eDIRECT):

- Includes access to tutorials, manuals, and user guides

INSIGHT ^{TM}

- Online Tools Training: allows students to become familiar with the tools available in the online testing platform; also available through this link using the Chrome browser
- LEAP Grade 7 Practice Test: helps prepare students for the tests

K-12 Louisiana Math Webpage

- K-12 Louisiana Student Standards for Mathematics: explains the development of and lists the math content standards for Louisiana students
- Grade 7 Mathematics - Teachers Companion Document 2.0: contains descriptions of each standard to answer questions about the standard's meaning and how it applies to student knowledge and performance
- Grade 7 Learning Acceleration Guidance: reference guide for teachers to help them more quickly identify the specific remedial standards necessary for every standard, includes information on content emphasis
- K-12 LSSM Alignment to Rigor: provides explanations and a standards-based alignment to assist teachers in providing a rigorous education
- Math Formative Assessment Items: instructional resources in grade-level documents that teachers can download and incorporate into their daily instruction. (Password to access the document is Educate2020)

Contact the LDOE

- assessment@la.gov for assessment questions
- classroomsupporttoolbox@la.gov for curriculum and instruction questions
- AskLDOE for general questions
- ldoecommunications@la.gov to subscribe to newsletters; include the newsletter(s) you want to subscribe to in your email

Newsroom: archived copies of newsletters including LDOE Weekly School System Newsletters and Teacher Leader Newsletters

Appendix A

Assessable Content for the Major Content Reporting Category (Type I)

LSSM Content Standards	
■ 7.RP.A	■ Analyze proportional relationships and use them to solve real-world and mathematical problems.
7.RP.A.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ miles per hour, equivalently 2 miles per hour.
7.RP.A.2	Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn. d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.
7.RP.A.3	Use proportional relationships to solve multistep ratio and percent problems of simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, and percent error.
■ 7.NS.A	■ Apply and extend previous understandings of operations with fractions.
7.NS.A.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c. Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. d. Apply properties of operations as strategies to add and subtract rational numbers.

7.NS.A.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then -(p/q) = (-p)/q = p/(-q). Interpret quotients of rational numbers by describing real-world contexts. c. Apply properties of operations as strategies to multiply and divide rational numbers.
7.NS.A.3	Solve real-world and mathematical problems involving the four operations with rational numbers.[1]
■ 7.EE.A	■ Use properties of operations to generate equivalent expressions.
7.EE.A.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients to include multiple grouping symbols (e.g., parentheses, brackets, and braces).
7.EE.A.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."
■ 7.EE.B	■ Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
7.EE.B.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.
7.EE.B.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? b. Solve word problems leading to inequalities of the form $px + q > r$, $px + q \geq r$, $px + q < r$, or $px + q \leq r$ where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.

[1] Computations with rational numbers extend the rules for manipulating fractions to complex fractions.

Assessable Content for the Additional & Supporting Content Reporting Category (Type I)

LSSM Content Standards	
7.G.A	Draw construct, and describe geometrical figures and describe the relationships between them.
7.G.A.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
7.G.A.2	Draw (freehand, with ruler and protractor, or with technology) geometric shapes with given conditions. (Focus is on triangles from three measures of angles or sides, noticing when the conditions determine one and only one triangle, more than one triangle, or no triangle.
7.G.A.3	Describe the two-dimensional figures (or cross-sections) that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
7.G.B	Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
7.G.B.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
7.G.B.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
7.G.B.6	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. (Pyramids limited to surface area only.)
7.SP.A	Use random sampling to draw inferences about a population.
7.SP.A.1	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
7.SP.A.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.
7.SP.B	Draw informal comparative inferences about two populations.
7.SP.B.3	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities using quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
7.SP.B.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.
7.SP.C	Investigate chance processes and develop, use, and evaluate probability models.
7.SP.C.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

7.SP.C.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.
7.SP.C.7	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected. b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?
7.SP.C.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?

Assessable Content for Mathematical Reasoning & Modeling Reporting Category (Type II, Type III)

LEAP Evidence Statements – Type II	
LEAP.II.7.1	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in ● 7.NS.A.1, 7.NS.A.2 – Students need not use property names. ● 7.EE.A.1 – Students need not use property names.
LEAP.II.7.2	Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in ● 7.NS.A.1, 7.NS.A.2
LEAP.II.7.3	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in ● 7.NS.A
LEAP.II.7.4	Base explanations/reasoning on a coordinate plane diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in ● 7.RP.A – Tasks are limited to coordinates in Quadrant 1 and a positive constant of proportionality.

LEAP.II.7.5	Given an equation, present the solution steps as a logical argument that concludes with the set of solutions (if any). Content Scope: Knowledge and skills articulated in ● 7.EE.B.4a
LEAP.II.7.6	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in ● 7.RP.A.2 – Tasks are limited to coordinates in Quadrant 1 and a positive constant of proportionality. ● 6.NS.C, 6.EE.A, 6.EE.B – Tasks may have scaffolding.[2]
LEAP.II.7.7	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. Content Scope: Knowledge and skills articulated in ● 7.RP.A.3 – Tasks are limited to coordinates in Quadrant 1 and a positive constant of proportionality. ● 7.NS.A.2d - Tasks focus on demonstrating understanding that a number is rational and do not directly assess the ability to divide two whole numbers. ● 7.NS.A.3 ● 7.EE.B.3

LEAP Evidence Statements – Type III	
LEAP.III.7.1	Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 7, requiring application of knowledge and skills articulated by the LSSM section of the Major Content Assessable Content table. Tasks may have scaffolding.[2] Tasks involving writing or solving an equation should not go beyond the equation types described in 7.EE.4a (px +q = r and p(x + q) = r where p, q, and r are specific rational numbers).
LEAP.III.7.2	Solve multi-step contextual problems with degree of difficulty appropriate to grade 7, requiring application of knowledge and skills articulated in 6.RP.A, 6.EE.C, 6.G. Tasks may have scaffolding.[2]
LEAP.III.7.3	Micro-models: Autonomously apply a technique from pure mathematics to a real-world situation in which the technique yields valuable results even though it is obviously not applicable in a strict mathematical sense (e.g., profitably applying proportional relationships to a phenomenon that is obviously nonlinear or statistical in nature) requiring knowledge and skills articulated in 7.RP.A.2 and/or 7.G.B.4. Tasks may have scaffolding. [2]
LEAP.III.7.4	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 7.RP.A.3, 7.NS.A.3, and/or 7.EE.B.3. Tasks may have scaffolding. [2]

[2] Scaffolding in a task provides the student with an entry point into a pathway for solving a problem. In unscaffolded tasks, the student determines his/her own pathway and process.

Appendix B

Answer Key/Rubrics for Sample Items

<table>
<tr><th>Item Type</th><th>Key</th><th>Alignment</th></tr>
<tr><td>Multiple-Choice</td><td>C</td><td>7.NS.A.1c</td></tr>
<tr><td>Multiple-Select</td><td>B, C, D</td><td>7.SP.C.7a</td></tr>
<tr><td>Short Answer</td><td>4</td><td>7.NS.A.3</td></tr>
<tr><td>Keypad Input</td><td>$-\frac{5}{8}$ (or equivalent)</td><td>7.EE.B.4a</td></tr>
<tr><td>TEI: Drag-and-Drop</td><td>
<table>
<tr><td>Soup B: 2 cans for $5.00
Does not have the same price per can as Soup A</td><td>Soup C: 3 cans for $4.50
Has the same price per can as Soup A</td><td>Soup D: 5 cans for $5.50
Does not have the same price per can as Soup A</td><td>Soup E: 6 cans for $9.00
Has the same price per can as Soup A</td></tr>
</table>
</td><td>7.RP.A.2a</td></tr>
<tr><td>TEI: Dropdown Menu</td><td>From 10 a.m. to 2 p.m., the temperature at Sam's house [increased] by [8]° Fahrenheit.</td><td>7.NS.A.3</td></tr>
<tr><td>TEI: Match Interaction</td><td>
<table>
<tr><th></th><th>Unit Rate Less than Ed's Unit Rate</th><th>Unit Rate Equal to Ed's Unit Rate</th><th>Unit Rate Greater than Ed's Unit Rate</th></tr>
<tr><td>Farmer A: $0.50 for $\frac{1}{2}$ pound</td><td>☐</td><td>☐</td><td>☑</td></tr>
<tr><td>Farmer B: $0.75 for 1 pound</td><td>☐</td><td>☑</td><td>☐</td></tr>
<tr><td>Farmer C: $1.75 for $2\frac{1}{2}$ pounds</td><td>☑</td><td>☐</td><td>☐</td></tr>
<tr><td>Farmer D: $6.00 for 8 pounds</td><td>☐</td><td>☑</td><td>☐</td></tr>
</table>
</td><td>7.RP.A.2b</td></tr>
</table>

Item Type	Key	Alignment
Type II Constructed-Response	See Rubric	LEAP.II.7.6
Type III Constructed-Response	See Rubric	LEAP.III.7.1

Type II Constructed-Response Rubric

Score	Description
3	Student response includes each of the following 3 elements. ● Computation component: 1 point ○ Correctly determines the constant of proportionality as 1.25 or equivalent ● Reasoning component: 2 points ○ Correctly explains why the student's reasoning is incorrect ○ Correct work or explanation for calculating the constant of proportionality Sample Student Response: The student's reasoning is incorrect because he or she used subtraction between only one quantity to find the constant of proportionality. Since the table is proportional, the ratio between y and x values will be the same. This will be the constant of proportionality. y/x = 10/8 = 1.25 y/x = 7.5/6 = 1.25 The constant of proportionality is 1.25. Note: One example of correct work is sufficient for credit.
2	Student response includes 2 of the 3 elements.
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.

Type III Constructed-Response Rubric

Score	Description
3	Student response includes each of the following 3 elements. ● Computation component: 1 point ○ Correctly calculates how much money was earned on Monday: $158 ● Modeling component: 2 points ○ Correctly models a process for determining the total number of hours worked Note: It is not necessary to show the total hours of 9.25 if the two correct subtotals are given. ○ Correctly models a process for determining the total dollar amount earned, including overtime Sample Student Response: Rita worked from 8:15 a.m. to 12:45 p.m., or 4 ½ hours before lunch. She worked from 1:30 p.m. to 6:15 p.m., or 4 ¾ hours after lunch. The total time Rita worked on Monday was 4 ½ + 4 ¾ = 9 ¼ hours. Rita worked 1 ¼ hours beyond 8 hours, so she is paid overtime for that time. Rita is paid $16 per hour for the first 8 hours she worked and ($16)(1 ½) = $24 per hour for the 1 ¼ overtime hours she worked. The total dollar amount she earned on Monday is $16 (8) + $24 (1 ¼) = $128 + $30 = $158. Notes: ● The student may receive a total of 2 modeling points if the modeling processes are correct but the student makes one or two computational errors resulting in an incorrect answer. ● The student may receive a total of 1 modeling point if the modeling processes are correct but the student makes more than two computational errors resulting in an incorrect answer.
2	Student response includes 2 of the 3 elements.
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.