LEAP Assessment Guide, Mathematics Grade 3

This guide includes:

I. Purpose of Assessment Guide

This document is designed to assist Louisiana educators in understanding the LEAP mathematics assessment for grade 3, which will be administered in spring 2016.

II. Introduction to LEAP

All students in grades 3–8 will take the LEAP ELA and mathematics assessments. In order for Louisiana to maintain comparability between assessments administered in spring 2015 and spring 2016, a percentage of the items (not more than 49.9%) for the LEAP assessments comes from the Partnership for Assessment of Readiness for College and Careers (PARCC). PARCC is a group of states working together to develop high-quality assessments. The remaining percentage of items for the LEAP assessments comes from the College and Career Readiness Item Bank belonging to Data Recognition Corporation, winner of the LEAP mathematics and ELA test development contract.

The LEAP assessments will offer the following:

- Consistency with the rigor and types of questions used in the spring 2015 Louisiana assessments
- Measurement of the full range of Louisiana content standards in ELA and mathematics
- Ability to measure the full range of student performance, including the performance of high- and low-performing students

- Flexibility in test administration, both paper- and computer-based testing available
- Information for educators and parents about student readiness in ELA and mathematics and whether students are “on track” for college and careers
- Comparison of Louisiana student performance with the performance of students in other states

III. Overview of Mathematics Task Types and Reporting Categories

Each item on the LEAP assessment is referred to as a task and is identified by one of three types: Type I, Type II, and Type III. As shown in the table below, each of the three task types is aligned to one of four reporting categories (also called sub-claims): major content, additional and supporting content, reasoning, and modeling. Each task type is designed to align with at least one of the Standards for Mathematical Practice (MP).

Task Type	Description	Sub-Claim	Mathematical Practice(s)
Type I	conceptual understanding, fluency, and application	**Sub-Claim A:** solve problems involving the major content for grade 3 **Sub-Claim B:** solve problems involving the additional and supporting content for grade 3	can involve any or all practices
Type II	written arguments/ justifications, critique of reasoning, or precision in mathematical statements	**Sub-Claim C:** express mathematical reasoning by constructing mathematical arguments and critiques	primarily MP.3 and MP.6, but may also involve any of the other practices
Type III	modeling/application in a real-world context or scenario	**Sub-Claim D:** solve real-world problems engaging particularly in the modeling practice	primarily MP.4, but may also involve any of the other practices

These reporting categories are the same as the reporting categories on the spring 2015 mathematics student reports and 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 subcategories, which may help identify when students need additional support or more challenging work; and
- how well schools and districts are helping students achieve higher expectations.

IV. Design of LEAP Mathematics Assessments

The LEAP mathematics assessment in grade 3 contains a total of 62 points. The table below shows the breakdown of task types and point values.

Grade 3 Mathematics Test Design				
Test Session	**Type I (points)**	**Type II (points)**	**Type III (points)**	**Total (points)**
Session 1: No Calculator	14	4	3	21
Session 2: No Calculator	14	3	3	20
Session 3: No Calculator	12	3	6	21

V. Assessable Content

The tasks on the LEAP mathematics test are aligned directly to the Louisiana Mathematics Standards for all sub-claims. Type I tasks, designed to assess conceptual understanding, fluency, and application, are aligned to the major content for grade 3 (reported in sub-claim A) and additional and supporting content for grade 3 (reported in sub-claim B). Type II tasks are designed to assess student reasoning ability of the major content for grade 3 in applied contexts (reported in sub-claim C). Type III tasks are designed to assess student modeling ability of selected content for grades 2 or 3 in applied contexts (reported in sub-claim D). Type II and III tasks are further aligned to PARCC evidence statements for sub-claims C and D. See the table in the Appendix (section VIII of this document) for a listing of assessable content of the Louisiana Mathematics Standards and PARCC evidence statements.

VI. LEAP Test Administration Policies

Administration Schedule

The spring LEAP ELA and mathematics assessments will be administered during **one** testing window and will be available to districts as paper-based tests (PBT) and computer-based tests (CBT). The table below lists the PBT administration schedule for the spring ELA, mathematics, and science assessments.

Paper-Based Test Administration Schedule: Grade 3		
Day 1 April 25	English Language Arts Session 1: Research Simulation Task	75 minutes
	Mathematics Session 1: No Calculator	75 minutes
Day 2 April 26	English Language Arts Session 2: Literary Analysis Task **OR** Narrative Writing Task + 1 passage set	75 minutes
	Mathematics Session 2: No Calculator	75 minutes
Day 3 April 27	English Language Arts Session 3: Reading Literary and Informational Texts	60 minutes
	Mathematics Session 3: No Calculator	75 minutes
Day 4 April 28	Science Session 1: Multiple-Choice	Suggested time: 60 minutes
	Science Session 2: Task	Suggested time: 30 minutes
Day 5 April 29	Make-Up Sessions	Depends on session

The table below lists the CBT administration schedule and policies for the spring ELA and mathematics assessments.

Computer-Based Test Administration Schedule: Grade 3		
Test Window: April 11, 2016 – May 6, 2016		
English Language Arts	Session 1: Research Simulation Task	75 minutes
Mathematics	Session 1: No Calculator	75 minutes
English Language Arts	Session 2: Literary Analysis Task **OR** Narrative Writing Task + 1 passage set	75 minutes
Mathematics	Session 2: No Calculator	75 minutes
English Language Arts	Session 3: Reading Literary and Informational Texts	60 minutes
Mathematics	Session 3: No Calculator	75 minutes
Computer-Based Test Administration Policies: For the administration of the computer-based tests, schools must follow the policies below.		
• Sessions must be completed in the order listed above. • No more than two sessions can be scheduled per day (one English Language Arts and one Mathematics). • Students must be provided breaks between sessions. • All students in a particular grade must be tested on the same session at the same time as or as close to the same time as possible. If not possible, schools should have procedures in place to isolate students who have tested from those who are waiting to test. • Make-up sessions must be administered as soon as a student returns to school.		

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

Paper-Based Tests

Students taking the paper-based tests, except those using braille test materials, will enter all answers in their test booklets. There will be no separate answer documents. Each session of the mathematics test booklet will be sealed; day indicator bars will appear on the outside margin of each page. Instructions for how to manage the test booklets, including how to break the seals, will be outlined in the Test Administration Manual.

Multiple-Choice tasks have three or four options. Students will shade the bubble of the correct answer.

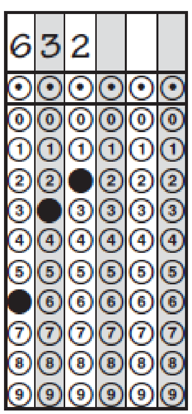
- (A) Option A
- (B) Option B
- (C) Option C
- (D) Option D

Multiple-Select tasks for grade 3 have five or six options. Students will fill in the number of correct answers identified in the stem of the question. The number of correct answers will vary from task to task. The sample below asks for two correct answers.

- (A) Option A
- (B) Option B
- (C) Option C
- (D) Option D
- (E) Option E
- (F) Option F

Fill-in-the-Blank Grids

For fill-in-the-blank tasks on paper-based tests, students will write the number (whole number) in the boxes at the top of the grid, starting with the first box on the left. Numbers are entered **without** commas. Students will then shade the bubble in the column that corresponds to the entry (digit) in the top row. Blank spaces within the answer are not allowed. Grade 3 students will not be required to enter responses with decimals, and should ignore the decimal row.



Note: Should a student mistakenly start in a column other than column 1, the entry will be scored as correct under the following conditions:

- There are no spaces within the answer.
- The answer fits within the remaining columns.

Fractional Answers

Type I tasks with potential fractional answers in PBT forms will be presented in multiple-choice or multiple-select formats. Students will be expected to be able to correctly write and apply fractions in Type II (reasoning) and Type III (modeling) constructed-response tasks.

Answering Type II and Type III Tasks

When answering Type II (reasoning) and Type III (modeling) tasks, students need to make sure to write their explanations and/or to show their work in the box provided for each question. Any information written outside the box or which has been scratched out will not be scored.

The following information presents guidelines for marking/writing in the mathematics test booklet.

- Students may use yellow highlighters to highlight text in the test booklet.
- Students may write and do scratch work in the test booklet, but must avoid making stray marks in the answer circles on the multiple-choice and multiple-select tasks or in the fill-in-the-blank grids.
- Highlighting text in options and placing an X to the right of the text in an option are recommended ways for students to eliminate options. However, crossing out options could create scoring issues if students mark through answer circles.

Computer-Based Tests

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. For example, for a multiple-choice task, a student will select the circle next to the correct answer. For fill-in-the-blank and constructed-response tasks on online test forms, students will type in the number (whole number) or text in the box using the typing tools provided. Some response boxes limit the length of the response that can be typed and whether numbers and/or text can be typed.

Computer-based tests allow for the use of technology-enhanced items (TEI) that use innovative, engaging ways to assess student understanding of material beyond the limitations of a traditional selected-response task. A TEI may require the student to sort shapes into categories by using a drag-and-drop tool, show a fraction or an area by selecting cells in a figure, or create angles by rotating rays.

The computer-based tests include the following online tools, which allow a student to select answer choices, “mark” tasks, eliminate answer options, take notes, enlarge the task, guide the reading of a task line by line, use a ruler, and use an equation builder for entering special characters (similar to what a student can do on the paper-based tests). A help tool is also featured to assist students as they use the online system.

- Pointer tool
- Highlighter tool
- Cross-Off tool
- Sticky Note tool
- Magnifying tool
- Line Guide
- Measurement tools
- Equation Builder
- Help tool

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

Permitted Testing Materials

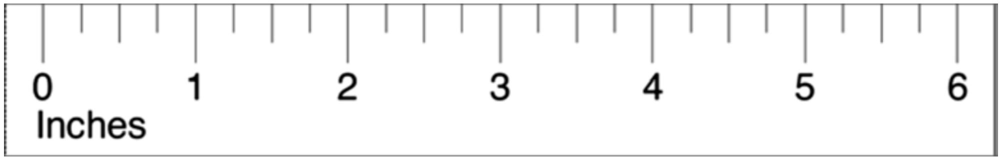
The chart that follows summarizes the tools and resources for the grade 3 mathematics assessment.

ASSESSMENT RESOURCES/TOOLS FOR GRADE 3

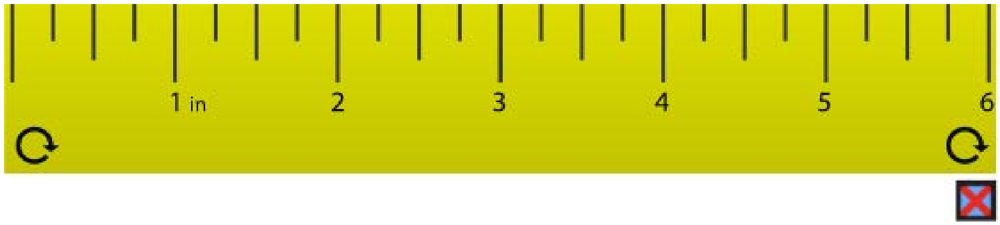
Provided (by vendor or part of online system)	Required (provided by school)	Other Allowable (may be used, not required)
${}^{1}/_{4}$ -inch ruler	Scratch paper (lined, graph, or un-lined)	Yellow highlighter

Provided tools are sent by the test vendor to the districts for the districts to distribute during testing; districts and students may **not** substitute their own tools for provided tools. Required tools must be supplied by the school and distributed to all testers during testing. Schools may give or permit students to bring *allowable* tools. If schools permit students to bring their own *allowable* tools, tools must be given to the test administrator prior to testing to ensure that the tools are appropriate for testing (e.g., tools do not have any writing on them).

Grade 3 ruler provided on the LEAP paper-based mathematics assessment (not actual size):



Grade 3 ruler provided on the LEAP computer-based mathematics assessment (not actual size):



To ensure accurate measurement, the size of the computer-based ruler, along with the object being measured, varies depending on the computer monitor's resolution. To practice with the computer-based ruler, please visit the Online Tools Training.

UPDATE: Clarification of Calculator Policy

Calculators

Students are not allowed to use calculators during the administration of any mathematics test in grade 3.

For students with the approved accommodation, a hand-held four-function calculator is allowed for all sessions.

- Square root, percent, memory, and +/- keys are also allowed but not required.
- A hand-held calculator is necessary for both the PBT and CBT; an online calculator will not be available.
- 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.
- 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, as detailed above.

Reference Sheets

Students in grade 3 will **not** have a reference sheet because the Louisiana Mathematics Standards for this grade do not require one.

For more information about accessibility and accommodations, please refer to the 2015–2016 LEAP Accessibility Features and Accommodations Overview.

VII. Resources

UPDATE:
Links to More Resources

- Grades 3–5 Math Guidebook: offers comprehensive information to support teachers in creating yearly, unit, and daily instructional plans for students
- Third Grade Teacher 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
- 2014–2015 Grade 3 Practice Test: 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 Grade 3 Math Released Items: provides teachers and students with actual test items from the PARCC 2015 test, including rubrics, alignment, and scoring information
- 2015–2016 Grade 3 LEAP Practice Test and Scoring Guide: offers samples of paper-based grade-level practice tests to help prepare students for the spring assessments
- 2015-2016 Grade 3 Online LEAP Practice Test, Scoring Guide, and Answer Sheet: offers samples of computer-based grade-level practice tests to help prepare students for the spring assessments; the online practice test is accessed through INSIGHT
- Online Tools Training: 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
- 2015-2016 LEAP Mathematics Practice Test Guidance: provides teachers with information about test structure, recommended uses, general cautions, item types, and scoring of the paper-based and computer-based LEAP tests
- Guide to the LEAP Online Equation Builder Grades 3-5: provides teachers with information on using the equation builder within the open-response boxes on the CBT
- Guide to Administering the Online Practice Tests: provides information regarding the administration and scoring process needed for the online practice tests

VIII. Appendix

Assessable Content for Sub-Claim A (Major Content)

Sub-Claim A: Major Content	
3.OA.A	**Represent and solve problems involving multiplication and division.**
3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*
3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*
3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.[1]
3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?*
3.OA.B	**Understand properties of multiplication and the relationship between multiplication and division.**
3.OA.B.5	Apply properties of operations as strategies to multiply and divide.[2] *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*
3.OA.B.6	Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*
3.OA.C	**Multiply and divide within 100.**
3.OA.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.D	**Solve problems involving the four operations, and identify and explain patterns in arithmetic.**
3.OA.D.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.[3]
3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
3.NF.A	**Develop understanding of fractions as numbers.[4]**
3.NF.A.1	Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.

[1] See Louisiana Mathematics Standards Table 2, p. 12.
[2] Students need not use formal terms for these properties.
[3] This standard is limited to problems posed with whole numbers and having whole-number answer; students should know how to perform operations in conventional order when there are no parentheses to specify a particular order (Order of Operations).
[4] Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.

3.NF.A.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line. b. Represent a fraction *a*/*b* on a number line diagram by marking off a lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line.
3.NF.A.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model. c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram*. d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
3.MD.A	**Solve problems involving measurement and estimation.**
3.MD.A.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
3.MD.A.2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[5] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.[6]
3.MD.C	**Geometric measurement: understand concepts of area and relate area to multiplication and to addition.**
3.MD.C.5	Recognize area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.
3.MD.C.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
3.MD.C.7	Relate area to the operations of multiplication and addition. a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

[5] Excludes compound units such as cm^3 and finding the geometric volume of a container

[6] Excludes multiplicative comparison problems (problems involving notions of "times as much"; see Louisiana Mathematics Standards Table 2, p. 12)

Assessable Content for Sub-Claim B (Additional and Supporting Content)

Sub-Claim B: Additional and Supporting Content	
3.NBT.A	**Use place value understanding and properties of operations to perform multi-digit arithmetic.**[7]
3.NBT.A.1	Use place value understanding to round whole numbers to the nearest 10 or 100.
3.NBT.A.2	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.NBT.A.3	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.
3.MD.B	**Represent and interpret data.**
3.MD.B.3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets*.
3.MD.B.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
3.MD.D	**Geometric measurement: recognize perimeter.**
3.MD.D.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
3.G.A	**Reason with shapes and their attributes.**
3.G.A.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.A.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape*.

[7] A range of algorithms may be used.

Assessable Content for Sub-Claim C (Reasoning Applications)

Sub-Claim C: Reasoning Applications
Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in • 3.OA.B.5– Students need not use formal property names. Products and related quotients are limited to the 10x10 multiplication table.[8] • 3.OA.D.9– Students need not use formal property names. • 3.MD.C.7 – Tasks may include those with and without real-world contexts. Students need not use formal property names.
Base explanations/reasoning on the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in • 3.OA.B.6 – Products and related quotients are limited to the 10x10 multiplication table.
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. Content Scope: Knowledge and skills articulated in • 3.NF.A.3b, 3.NF.A.3d – Tasks may present realistic or quasi-realistic images of a contextual situation (e.g., a drawing of a partially filled graduated cylinder). However, tasks do not provide the sort of abstract drawings that help the student to represent the situation mathematically (e.g., a number line diagram or other visual fraction model). Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8. Fractions equivalent to whole numbers are limited to 0 - 5.
Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in • 3.MD.C.5, 3.MD.C.6, 3.MD.C.7 – Tasks may include those with and without real-world contexts. Tasks with a context may present realistic or quasi-realistic images of a contextual situation (e.g., a drawing of a meadow). However, tasks do not provide the sort of abstract drawings that help the student to represent the situation mathematically (e.g., a tiling of the meadow).
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.) Content Scope: Knowledge and skills articulated in • 3.OA.B.5 – Students need not use formal property names. Products and related quotients are limited to the 10x10 multiplication table. • 3.OA.B.6 - Products and related quotients are limited to the 10x10 multiplication table. • 3.OA.D.8 - Tasks do not require a student to write a single equation with a letter standing for the unknown quantity in a two-step problem, and then solve that equation. Tasks may require students to write an equation as part of their work to find a solution, but students are not required to use a letter for the unknown.[9] • 3.NF.A.3b, 3.NF.A.3d - Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8. Fractions equivalent to whole numbers are limited to 0 - 5. • 3.MD.C.7 – Tasks may include those with and without real-world contexts. • 3.OA.D.9 • 2.NBT – Tasks may have scaffolding.[10]

[8] For example, 2 x 4 x 5, would be acceptable as students can use the associative property to rewrite the expression as 8 x 5 which falls within the content limits of grade 3. The problem 7 x 4 x 5 would exceed the content limits of grade 3 because any use of the associative property would result in a 2-digit multiplier.

[9] Addition, subtraction, multiplication and division situations in these problems may involve any of the basic situation types with unknowns in various positions (see Louisiana Mathematics Standards, Table 1, Common addition and subtraction situations, p. 11; Table 2, Common multiplication and division situations, p. 12; and the University of Arizona Institute for Mathematics and Education document *K-5 Progression on Counting and Cardinality and Operations and Algebraic Thinking*).

[10] 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. Both scaffolded and unscaffolded tasks will be included in reasoning and modeling items.

Present solutions to two-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 two-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in • 3.OA.D.8 - Tasks do not require a student to write a single equation with a letter standing for the unknown quantity in a two-step problem, and then solve that equation. Tasks may require students to write an equation as part of their work to find a solution, but students are not required to use a letter for the unknown.[9]
Present solutions to multi-step[11] 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 • 3.MD.C.7b, 3.MD.C.7d - Tasks may include those with and without real-world contexts.
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 • 3.NF.A.2 - Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8. Fractions equivalent to whole numbers are limited to 0 - 5. • 3.MD.A.1

Assessable Content for Sub-Claim D (Modeling Applications)

Sub-Claim D: Modeling Applications
Solve multi-step[11] contextual word problems with degree of difficulty appropriate to Grade 3, requiring application of knowledge and skills articulated in Sub-claim A[12]. Tasks may have scaffolding.[10]
Solve multi-step[11] 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. Tasks may have scaffolding.[10]

[11] Multi-step must have at least three steps.
[12] Standards 3.OA.B.5 and 3.OA.D.9 are not assessable as Modeling.