

A photograph of a classroom with two wooden desks. Each desk has a black top and a white sheet of paper. A pencil lies on each desk. In the background, there is a whiteboard and a colorful abacus.

DRAFT New Louisiana
Standards for 2016-2017
Correlation to *Eureka Math*

Grade 1
April 2016
Draft

**EUREKA
MATH™**

Grade 1 Mathematics

The majority of the Grade 1 Louisiana Standards for Mathematics are fully covered by the Grade 1 *Eureka Math* curriculum. The primary areas where the Grade 1 Louisiana Standards for Mathematics and Eureka Math do not align are in the domains of Measurement and Data and Number and Operations in Base Ten. Standards for Measurement and Data will require use of Eureka Math content from other grade levels. Standards for Number and Operations in Base Ten will require supplemental material on written explanations of reasoning. A detailed analysis of alignment is provided in the table below. With strategic placement of supplemental materials, Eureka Math can ensure students are successful in achieving the proficiencies of the Louisiana Standards for Mathematics while benefiting from the coherence and rigor of *Eureka Math*.

Indicators

-  Green indicates that the Louisiana standard is fully addressed in *Eureka Math*.
-  Yellow indicates that the Louisiana standard may not be completely addressed in *Eureka Math*.
-  Red indicates that the Louisiana standard is not addressed in *Eureka Math*.
-  Blue indicates there is a discrepancy between the grade level at which this standard is addressed in the Louisiana standards and in *Eureka Math*.

Standards for Mathematical Practice

Aligned Components of *Eureka Math*

1. Make sense of problems and persevere in solving them.

In first grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” They are willing to try other approaches.

Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 1, which is specifically addressed in the following modules:

- G1 M5: Identifying, Composing, and Partitioning Shapes
- G1 M6: Place Value, Comparison, Addition and Subtraction to 100

2. Reason abstractly and quantitatively.

Younger students recognize that a number represents a specific quantity. They connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities.

Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 2, which is specifically addressed in the following modules:

- G1 M1: Sums and Differences to 10
- G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20
- G1 M3: Ordering and Comparing Length Measurements as Numbers

3. Construct viable arguments and critique the reasoning of others.

First graders construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also practice their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” “Explain your thinking,” and “Why is that true?” They not only explain their own thinking, but listen to others’ explanations. They decide if the explanations make sense and ask questions.

Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 3, which is specifically addressed in the following modules:

- G1 M3: Ordering and Comparing Length Measurements as Numbers
- G1 M4: Place Value, Comparison, Addition and Subtraction to 40
- G1 M6: Place Value, Comparison, Addition and Subtraction to 100

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4. Model with mathematics.

In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.

Lessons in every module engage students in modeling with mathematics as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 4, which is specifically addressed in the following modules:

- G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20
- G1 M6: Place Value, Comparison, Addition and Subtraction to 100

5. Use appropriate tools strategically.

In first grade, students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, first graders decide it might be best to use colored chips to model an addition problem.

Lessons in every module engage students in using appropriate tools strategically as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 5, which is specifically addressed in the following modules:

- G1 M4: Place Value, Comparison, Addition and Subtraction to 40
- G1 M6: Place Value, Comparison, Addition and Subtraction to 100

6. Attend to precision.

As young children begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and when they explain their own reasoning.

Lessons in every module engage students in attending to precision as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 6, which is specifically addressed in the following modules:

- G1 M1: Sums and Differences to 10
- G1 M3: Ordering and Comparing Length Measurements as Numbers
- G1 M4: Place Value, Comparison, Addition and Subtraction to 40
- G1 M5: Identifying, Composing, and Partitioning Shapes

Standards for Mathematical Practice

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7. Look for and make use of structure.

First graders begin to discern a pattern or structure. For instance, if students recognize $12 + 3 = 15$, then they also know $3 + 12 = 15$. (Commutative property of addition.) To add $4 + 6 + 4$, the first two numbers can be added to make a ten, so $4 + 6 + 4 = 10 + 4 = 14$.

Lessons in every module engage students in looking for and making use of structure as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 7, which is specifically addressed in the following modules:

- G1 M1: Sums and Differences to 10
- G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20
- G1 M3: Ordering and Comparing Length Measurements as Numbers
- G1 M4: Place Value, Comparison, Addition and Subtraction to 40
- G1 M5: Identifying, Composing, and Partitioning Shapes

8. Look for and express regularity in repeated reasoning.

In the early grades, students notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract “ten” and multiples of “ten” they notice the pattern and gain a better understanding of place value. Students continually check their work by asking themselves, “Does this make sense?”

Lessons in every module engage students in looking for and expressing regularity in repeated reasoning as required by this standard. This standard is analogous to the CCSSM Standard for Mathematical Practice 8, which is specifically addressed in the following modules:

- G1 M1: Sums and Differences to 10
- G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20

Domain

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Domain	Standards	Aligned Components of <i>Eureka Math</i>
<p>Operations and Algebraic Thinking</p>	<p>Cluster A: Represent and solve problems involving addition and subtraction.</p> <p>1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situation of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem).</p>	<p>G1 M1: Sums and Differences to 10</p> <p>G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20</p> <p>G1 M3 Lesson 9: Answer <i>compare with difference unknown</i> problems about lengths of two different objects measured in centimeters.</p> <p>G1 M3 Lessons 12–13: Ask and answer varied word problem types about a data set with three categories.</p> <p>G1 M4 Topic E: Varied Problem Types Within 20</p> <p>G1 M6 Topic A: Comparison Word Problems</p> <p>G1 M6 Topic F: Varied Problem Types Within 20</p>
	<p>1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p>	<p>G1 M2 Lesson 1: Solve word problems with three addends, two of which make ten.</p> <p>G1 M2 Lesson 2: Use the associative and commutative properties to make ten with three addends.</p>

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<p>Cluster B: Understand and apply properties of operations and the relationship between addition and subtraction.</p>		
	<p>1.OA.B.3 Apply properties of operations to add and subtract. <i>Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)</i></p>	<p>G1 M1 Topic E: The Commutative Property of Addition and the Equal Sign</p> <p>G1 M1 Topic F: Development of Addition Fluency Within 10</p> <p>G1 M2 Topic A: Counting On or Making Ten to Solve <i>Result Unknown</i> and <i>Total Unknown</i> Problems</p> <p>G1 M2 Topic B: Counting On or Taking from Ten to Solve <i>Result Unknown</i> and <i>Total Unknown</i> Problems</p> <p>G1 M4 Topic D: Addition of Tens or Ones to a Two-Digit Number</p>
	<p>1.OA.B.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</i></p>	<p>G1 M1 Topic G: Subtraction as an Unknown Addend Problem</p> <p>G1 M1 Topic H: Subtraction Word Problems</p> <p>G1 M2 Lesson 16: Relate counting on to making ten and taking from ten.</p> <p>G1 M2 Lesson 19: Compare efficiency of counting on and taking from ten.</p> <p>G1 M2 Lesson 21: Share and critique peer solution strategies for <i>take from with result unknown</i> and <i>take apart with addend unknown</i> word problems from the teens.</p> <p>G1 M2 Topic C: Strategies for Solving <i>Change or Addend Unknown</i> Problems</p>

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	<p>Cluster C: Add and subtract within 20.</p> <p>1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p>1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p>	<p>G1 M1 Lesson 3: See and describe numbers of objects using 1 <i>more</i> within 5-group configurations.</p> <p>G1 M1 Topic B: Counting On from Embedded Numbers</p> <p>G1 M1 Topic D: Strategies for Counting On</p> <p>G1 M1 Topic G: Subtraction as an Unknown Addend Problem</p> <p>G1 M1 Lesson 33: Model 0 less and 1 less pictorially and as subtraction number sentences.</p> <p>G1 M1: Sums and Differences to 10</p> <p>G1 M2: Introduction to Place Value Through Addition and Subtraction Within 20</p>

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	<p>Cluster D: Work with addition and subtraction equations.</p> <p>1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</i></p> <p>1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \square$.</i></p>	<p>G1 M1 Lessons 17–18: Understand the meaning of the equal sign by pairing equivalent expressions and constructing true number sentences.</p> <p>G1 M2 Lesson 25: Strategize and apply understanding of the equal sign to solve equivalent expressions.</p> <p>This standard is addressed throughout Grade 1, but the following topics and lesson particularly emphasize it:</p> <p>G1 M1 Topic C: Addition Word Problems</p> <p>G1 M1 Lesson 16: Count on to find the unknown part in missing addend equations such as $6 + \underline{\quad} = 9$. Answer, “How many more to make 6, 7, 8, 9, and 10?”</p> <p>G1 M1 Topic H: Subtraction Word Problems</p> <p>G1 M4 Topic E: Varied Problem Types Within 20</p>
<p>Number and Operations in Base Ten</p>	<p>Cluster A: Extend the counting sequence.</p> <p>1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p>	<p>G1 M4 Lesson 1: Compare the efficiency of counting by ones and counting by tens.</p> <p>G1 M6 Lesson 7: Count and write numbers to 120. Use Hide Zero cards to relate numbers 0 to 20 to 100 to 120.</p> <p>G1 M6 Lesson 9: Represent up to 120 objects with a written numeral.</p>

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	<p>Cluster B: Understand place value.</p>	
	<p>1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p>	
	<p>a. 10 can be thought of as a bundle of ten ones—called a “ten.”</p>	<p>G1 M2 Topic D: Varied Problems with Decompositions of Teen Numbers as 1 Ten and Some Ones</p> <p>G1 M4 Topic A: Tens and Ones</p> <p>G1 M4 Lesson 23: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.</p> <p>G1 M6 Lesson 3: Use the place value chart to record and name tens and ones within a two-digit number up to 100.</p> <p>G1 M6 Lesson 4: Write and interpret two-digit numbers to 100 as addition sentences that combine tens and ones.</p>
	<p>b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</p>	<p>G1 M2 Topic D: Varied Problems with Decompositions of Teen Numbers as 1 Ten and Some Ones</p> <p>G1 M4 Topic A: Tens and Ones</p> <p>G1 M4 Lesson 23: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.</p>

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	<p>c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).</p>	<p>G1 M4 Topic A: Tens and Ones</p> <p>G1 M4 Topic B: Comparison of Pairs of Two-Digit Numbers</p> <p>G1 M4 Lesson 23: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.</p> <p>G1 M6 Lesson 3: Use the place value chart to record and name tens and ones within a two-digit number up to 100.</p> <p>G1 M6 Lesson 4: Write and interpret two-digit numbers to 100 as addition sentences that combine tens and ones.</p> <p>G1 M6 Lesson 8: Count to 120 in unit form using only tens and ones. Represent numbers to 120 as tens and ones on the place value chart.</p>
	<p>1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.</p>	<p>G1 M4 Topic B: Comparison of Pairs of Two-Digit Numbers</p> <p>G1 M6 Lesson 6: Use the symbols $>$, $=$, and $<$ to compare quantities and numerals to 100.</p>

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	<p>Cluster C: Use place value understanding and properties of operations to add and subtract.</p>	
	<p>1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10.</p>	
	<p>a. Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a number sentence; justify the reasoning used with a written explanation.</p>	<p>G1 M4: Place Value, Comparison, Addition and Subtraction to 40</p> <p>G1 M6 Topic C: Addition to 100 Using Place Value Understanding</p> <p>G1 M6 Topic D: Varied Place Value Strategies for Addition to 100</p> <p>Note: Students justify their reasoning orally in lesson debriefs throughout the curriculum. Module 4 Lesson 18 specifically focuses on sharing and critiquing strategies. Consider extending lessons to include written explanations.</p>
	<p>b. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.</p>	<p>G1 M4: Place Value, Comparison, Addition and Subtraction to 40</p> <p>G1 M6 Topic C: Addition to 100 Using Place Value Understanding</p> <p>G1 M6 Topic D: Varied Place Value Strategies for Addition to 100</p>

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	<p>1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.</p>	<p>G1 M4 Lesson 5: Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number.</p> <p>G1 M4 Lesson 6: Use dimes and pennies as representations of tens and ones.</p> <p>G1 M6 Lesson 5: Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number within 100.</p>
	<p>1.NBT.C.6 Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<p>G1 M4 Lesson 11: Add and Subtract Tens from a Multiple of 10.</p> <p>G1 M6 Lesson 5: Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number within 100.</p> <p>G1 M6 Lesson 10: Add and subtract multiples of 10 from multiples of 10 to 100, including dimes.</p>
<p>Measurement and Data</p>	<p>Cluster A: Measure lengths indirectly and by iterating unit lengths.</p>	
	<p>1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p>	<p>G1 M3 Topic A: Indirect Comparison in Length Measurement</p> <p>G1 M3 Lesson 6: Order, measure, and compare the length of objects before and after measuring with centimeter cubes, solving <i>compare with difference unknown</i> word problems.</p>

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	<p>1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i></p>	<p>G1 M3 Topic B: Standard Length Units G1 M3 Topic C: Non-Standard and Standard Length Units</p>
	<p>Cluster B: Tell and write time.</p>	
	<p>1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>	<p>G1 M5 Topic D: Application of Halves to Tell Time</p>
	<p>Cluster C: Represent and interpret data.</p>	
<p>1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p>	<p>G1 M3 Topic D: Data Interpretation</p>	

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	<p>Cluster D: Work with Money</p> <p>1.MD.D.5 Determine the value of a collection of coins up to \$.50. (Pennies, nickels, dimes, and quarters in isolation; not to include a combination of different coins.)</p>	<p>G1 M6 Lesson 10: Add and subtract multiples of 10 from multiples of 10 to 100, including dimes.</p> <p>G1 M6 Topic E: Coins and Their Values</p> <p>G2 M7 Topic B: Problem Solving with Coins and Bills</p> <p>Note: Students also find the value of a group of coins through fluency activities in various lessons across Grade 1 Module 4 and Module 6. Consider extending Grade 1 lessons to include counting quarters and nickels up to fifty cents.</p>
Geometry	<p>Cluster A: Reason with shapes and their attributes.</p> <p>1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes that possess defining attributes.</p> <p>1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) and three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.</p>	<p>G1 M5 Topic A: Attributes of Shapes</p> <p>G1 M5 Topic B: Part–Whole Relationships Within Composite Shapes</p>

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	<p>1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>, and use the phrases <i>half of</i>, <i>fourth of</i>, and <i>quarter of</i>. Describe the whole as two of or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.</p>	<p>G1 M5 Topic C: Halves and Quarters of Rectangles and Circles</p> <p>G1 M5 Topic D: Application of Halves to Tell Time</p>