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| **Prerequisite Skills** | **Trimester 1**  **Grade 1** | **Looking Ahead** |
| Count to 100.  Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 | Number and Operations in Base Ten 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.   * I can count to 120 starting with a given number. | Read and write to 120.  (Trimester 2) |
| Compare two sets to determine greater, less than, or equal to. | Number and Operations in Base Ten 3: Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.   * I can identify the value of each digit in a two-digit number. * I can explain what each symbol means (>, <, =). * I can use >, <, = symbols to compare two 2 digit numbers **within 20.** | Compare within 100.  (Trimester 3)  Continue practicing this skill in Daily Math Review during Trimester 2. |
| Use addition and subtraction within 10 to solve word problems. | Operations and Algebraic Thinking 1: Use addition and subtraction within 20 to solve word problems involving situations 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.   * I can solve word problems. * I can use equations to represent a problem. * I can use a symbol (e.g. ?, x) to represent an unknown number in a problem. * I can determine the operation to solve word problem.   **Note: Word problems with sums within 10.** | Word problems with sums within 20.  (Trimester 2) |
| Count to 100 by ones and by tens.  Count forward beginning from a given number. | Operations and Algebraic Thinking 5: Relate counting to addition and subtraction ( by counting on 2 to add 2).   * I can count on from a given number and explain how it relates to addition. | I can count back from a given number and how it relates to subtraction.  (Trimester 2) |
| Fluently add and subtract within 5.  Decompose numbers less than or equal to 10. | Operations and Algebraic Thinking 6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use 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).   * I can add and subtract within 20. * I can use strategies to add and subtract within 20. * I can add and subtract fluently within 10. * I can subtract fluently within 10. * I can decompose numbers within 10. | Fluently add and subtract within 20 using mental strategies. By the end of grade 2, know from memory all sums of two one-digit numbers.  (Grade 2)  Students will continue practice with this standard in Trimester 2 and Trimester 3. |

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| **Prerequisite Skills**  **(K)** | **Trimester 1 (Continued)**  **Grade 1** | **Looking Ahead** |
| Decompose numbers less than or equal to 10 | Operations and Algebraic Thinking 7: Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *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 can explain the meaning of an equal sign. * I can compare the values on each side on an equal sign. * I can determine if the equation is true or false. | Use addition and subtraction within 100 to solve one and two step word problems.  (Grade 2)  Daily Math Review in Trimester 2 and Trimester 3. |
| Operations and Algebraic Thinking 8: Determine the unknown number in a whole-number addition or subtraction equation. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = – 3, 6 + 6 = .*   * I can recognize part-part-whole relationships of three numbers. | Identify the missing value. (Trimester 3).  Continued practice in Daily Math Review in Trimester 2. |
| Describe several measurable attributes of a single object.  Correctly name shapes regardless of location or size. | Geometry 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 to possess defining attributes.   * I can classify shapes by their attributes. * I can identify attributes that do and do not make a shape. * I can build and draw shapes to show attributes. * I can draw shapes to show attributes | Recognize and draw shapes having specified attributes.  (Grade 2) |
| Identify 2D and 3D shapes. | Geometry 2: Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or 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.   * I can create composite shapes. * I can compose new shapes from a composite shape. * I can recognize that shapes can be composed and decomposed to make new shapes. * I can describe attributes of original and composite shapes (combined shapes). * I can determine how the original and created composite shapes (combined shapes) are alike and different. | Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.5 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.  (Grade 2) |
| Geometry 3: Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.   * I can partition circles and rectangles into equal shares. * I can describe shares using half of, fourth of , and quarter of. | Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.  (Grade 2) |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Number and Operations in Base Ten 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. | * I can count to 120 starting with a given number. |  |  | | --- | | **What does this standard mean the students will know and be able to do?** | | * Rote count forward to 120 by *Counting On* from any number less than 120 * Count from different starting points (e.g., start at 83; count to 120). * See patterns between numbers on the hundreds chart (ex. all of the numbers in a column on the hundreds chart have the same digit in the ones place) * Write and represent a number of objects with a written numeral (number form or standard form) * Represent a number of objects with cubes, place value (base 10) blocks, pictorial representations or other concrete materials. * Use objects, words, and/or symbols to express their understanding of numbers * Develop accurate counting strategies (counting by 1s, 2s, 5s or 10s) * Build an understanding of how the numbers in the counting sequence are related—each number is one more (or one less) than the number before (or after) * After counting objects, students write the numeral or use numeral cards to represent the number. * Given a numeral, students read the numeral, identify the quantity that each digit represents using numeral cards, and count out the given number of objects.   **Strategies:**   * Students use materials to count by ones and tens to a build models that represent a number, then they connect this model to the number word and its representation as a written numeral. * Students learn to use numerals to represent numbers by relating their place-value notation to their models. * They build on their experiences with numbers 0 to 20 in Kindergarten to create models for 21 to 120 with groupable and pregroupable materials. * Students represent the quantities shown in the models by placing numerals in labeled hundreds, tens and ones columns. They eventually move to representing the numbers in standard form, where the group of hundreds, tens, then singles shown in the model matches the left-to-right order of digits in numbers. * Listen as students orally count to 120 and focus on their transitions between decades and the century number. These transitions will be signaled by a 9 and require new rules to be used to generate the next set of numbers. * Students need to listen to their rhythm and pattern as they orally count so they can develop a strong number word list. |  |  | | --- | | **Supplemental Resources for Number and Operations in Base Ten 1** | | Teachers will use Investigations materials to teach this standard. If more practice is needed teams of teachers may find or create more experiences with this concept. |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning1.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Number and Operations in Base Ten 3:  Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. | * I can identify the value of each digit in a two-digit number. * I can explain what each symbol means (>, <, =). * I can use >, <, = symbols to compare two 2 digit numbers within 20. |  |  |  | | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | * This standardbuilds on the work of NBT.1 and NBT.2**.** * Compare two numbers by examining the amount of tens and ones in each number. * Understand the symbols and vocabulary greater than (>), less than (<) and equal to (=). | | | **Example: 42 \_\_\_\_\_ 45** | | | Student 1:  42 has 4 tens and 2 ones. 45 has 4 tens and 5 ones. They have the same number of tens, but 45 has more ones than 42. So, 45 is greater than 42. So. 42 < 45. | Student 2  42 is less than 45. I know this because when I count up I say 42 before I say 45. So 42 < 45. |  |  |  |  | | --- | --- | --- | | **Supplemental Resources for Number and Operations in Base Ten 3** | | | | [Guess My Number](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Guess%20My%20Number.pdf) | [Khan Video](http://www.youtube.com/watch?v=KMwzeYAtJDc&safe=active) | [Raceway Number Values](http://www.abcya.com/comparing_number_values_jr.htm) |  |  |  |  |  | | --- | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision2.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning1.html) | |
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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Operations and Algebraic Thinking 1:  Use addition and subtraction within 20 to solve word problems involving situations 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. | * I can solve word problems. * I can use equations to represent a problem. * I can use a symbol (e.g. ?, x) to represent an unknown number in a problem. * I can determine the operation to solve word problem.   Note: word problems with sums within 10 |  |  |  | | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | * Builds on the work in Kindergarten by having students use a variety of mathematical representations (e.g., objects, drawings, and equations) during their work. The unknown symbols should include boxes or pictures, and not letters.   **Strategies:**   * Teachers should be cognizant of the three types of problems: Result Unknown, Change Unknown, and Start Unknown. Students use objects or drawings to represent the different situations. * Use informal language (and, minus/subtract, the same as) to describe joining situations (putting together) and separating situations (breaking apart). * Use the addition symbol (+) to represent joining situations, the subtraction symbol (-) to represent separating situations, and the equal sign (=) to represent a relationship regarding quantity between one side of the equation and the other. * A helpful strategy is for students to recognize sets of objects in common patterned arrangements (0-6) to tell how many without counting (subtizing). * Contextual problems that are closely connected to students’ lives should be used to develop fluency with addition and subtraction. | | | **Examples:** | | | **Take From**  Abel has 9 balls. He gave 3 to Susan. How many balls does Abel have now? | **Compare**  Abel has 9 balls. Susan has 3 balls. How many more balls does Abel have than Susan?  A student will use 9 objects to represent Abel’s 9 balls and 3 objects to represent Susan’s 3 balls. Then they will compare the 2 sets of objects. |  |  |  |  | | --- | --- | --- | | **Supplemental Lessons and Resources for Operations and Algebraic Thinking 1** | | | | Kathy Richardson: 1:3-10, Grow and Compare, page 158 | Kathy Richardson: 1:3-13, Stack, Tell, Spin & Win, page 161 -162 | Kathy Richardson: 1:3-18, Comparing Handfuls, page 168-169 |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | | | [1. Make sense of problems and persevere in solving them.](http://elementarymath.dmschools.org/1-make-sense-of-problems-and-persevere-in-solving-them5.html) | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [3. Construct viable arguments and critique the reasoning of others.](http://elementarymath.dmschools.org/3-construct-viable-arguments-and-critique-the-reasoning-of-others5.html) | [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics4.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision2.html) | |

\*Links coming soon

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Operations and Algebraic Thinking 5:  Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | * I can count on from a given number and explain how it relates to addition. * I can count back from a given number and how it relates to subtraction. |  |  |  |  |  | | --- | --- | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | | | * Make a connection between counting and adding and subtraction * Use various counting strategies, including **counting all, counting on, and counting back** with numbers up to 20 * Move beyond counting all and become comfortable at counting on and counting back * Students are able to hold the ―start number‖ in their head and count on from that number   **Strategies:**   * Help students make connections when counting on 3 from 4, they should write this as 4 + 3 = 7. When students count back (3) from 7, they should connect this to 7 – 3 = 4. Students often have difficulty knowing where to begin their count when counting backward. | | | | | **Examples:** | | | | | **Counting All**  5 + 2 = \_\_\_\_  The student counts five counters. The student adds two more. The student counts 1, 2, 3, 4, 5, 6, 7 to get the answer. | **Counting On**  5 + 2 = \_\_\_\_  The student counts five counters. The student adds the first counter and says 6, then adds the second counter and says 7. The student knows the answer is 7 because they counted on 2. | **Counting All**  12 – 3 = \_\_\_\_  The student counts twelve counters. The student removes 3 of them. The student counts 1, 2, 3, 4, 5, 6, 7, 8, 9 to get the answer. | **Counting Back**  12 – 3 = \_\_\_\_  The student counts 12 counters. The student removes a counter and says 11, removes another counter and says 10, removes another counter and says 9. The student knows the answer is 9, since they counted back 3. |  |  |  |  | | --- | --- | --- | | **Supplemental Lessons and Resources for Operations in Algebraic Thinking 5** | | | | [One More, One Less](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/One%20More,%20One%20Less.pdf) | [Hiding One More, Hiding One Less](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Hiding%20One%20More%20Hiding%20One%20Less.pdf) | [Towers, Towers, Towers](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Towers.pdf) | | [Frogs and Lily Pads](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Frogs%20and%20Lily%20Pads.pdf) | [Piggy Banks](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Piggy%20Banks.pdf) |  |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning1.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Operations and Algebraic Thinking 6:  Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use 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). | * I can add and subtract within 20. * I can use strategies to add and subtract within 20. * I can add and subtract fluently within 10. * I can subtract fluently within 10. * I can decompose numbers within 10. |  |  |  |  |  | | --- | --- | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | | | * Fluently add and subtract numbers to 10. Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly (use of different strategies), accurately, and efficiently. * Experience adding and subtracting within 20 * Use a **variety** of strategies when adding and subtracting numbers within 20. Students should have ample experiences modeling these operations before working on fluency.   **Strategies:**   * Differentiate using smaller numbers. * Move beyond the strategy of counting on because it can become a hindrance when working with larger numbers. | | | | | **Examples:** | | | | | **Making 10 and Decomposing a Number**  **8 + 7 = \_\_\_\_\_**  I know that 8 plus 2 is 10, so I decomposed (broke) the 7 up into 2 and 5. First, I added 8 and 2 to get 10, and then added the 5 to get 15.  8+7=(8+2) +5=10 +5=15 | **Creating an Easier Problem with Known Sums**  **14 – 6 = \_\_\_\_\_**  I know that 8 is 7+1. I also know that 7 and 7 equal 14 and I added 1 more to get 15.  8+7=(7+7)+1=15 | **Decomposing the number you subtract**  **14 – 6 = \_\_\_\_\_**  I know that 14 minus 4 is 10 so I broke the 6 up into a 4 and a 2. 14 minus 4 is 10. Then I take away 2 more to get 8.  14-6=(14-4)-2=10-2=8 | **Relationship between addition and subtraction**  **14 – 6 = \_\_\_\_\_**  6 +\_\_\_\_=14. I know that 6 plus 8 is 14, so that means that 14-6=8.  6+8=14 so 14-6=8 |  |  |  | | --- | --- | | **Supplemental Lessons and Resources for Operations in Algebraic Thinking 6** | | | [Adding and Subtracting on the Number Line](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Adding%20and%20Subtracting%20on%20the%20Number%20Line.pdf) | [Unifex Trains](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Unifex%20Trains.pdf) |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning1.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Operations and Algebraic Thinking 7:  Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *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 can explain the meaning of an equal sign. * I can compare the values on each side on an equal sign. * I can determine if the equation is true or false. |  |  | | --- | | **What does this standard mean the students will know and be able to do?** | | * Determine whether equations are true or false (understand sentences other than a + b = c as true (a = a, c = a + b, a = a + 0, a + b = b + a). * Understand that the equal sign does not mean ― answer comes next, but rather the relationship between the left and right side of the equation. * Interchange the language of equal to, same as, not equal, not the same as. * Compare expressions with cubes, counters, drawings, etc. rather than calculating. * Understand various representations of equations (e.g. 13=5+8 and 5+2=4+3).   \*\*These key skills are hierarchical in nature and need to be developed over time. At all times students should justify their answers, make conjectures (e.g., if you add a number and then subtract that same number, you always get zero), and make estimations. |  |  | | --- | | **Supplemental Lessons and Resources for Operations and Algebraic Thinking 7** | | Teachers will use Investigations materials to teach this standard. If more practice is needed teams of teachers may find or create more experiences with this concept. |  |  |  |  |  | | --- | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [3. Construct viable arguments and critique the reasoning of others.](http://elementarymath.dmschools.org/3-construct-viable-arguments-and-critique-the-reasoning-of-others5.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision2.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Operations and Algebraic Thinking 8:  Determine the unknown number in a whole-number addition or subtraction equation. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 =? .* | * I can recognize part-part-whole relationships of three numbers |  |  |  | | --- | --- | | **What does this standard mean the students will know and be able to do?** | | | * Understand addition and subtraction as related operations for situations with an unknown * Understand the meaning of the equal sign and know that the quantity on one side of the equal sign must be the same quantity on the other side of the equal sign.   **Strategies:**   * Experience with problems where the unknown in different positions. * Students create word problems for given equations will help them make sense of the equation and develop strategic thinking. * Students need to communicate and justify their thinking. | | | **Examples:** | | | *8 + ? = 11*: ―8 and some number is the same as 11. 8 and 2 is 10 and 1 more makes 11. So the answer is 3.‖ | *5 =* ? *– 3*: ―This equation means I had some cookies and I ate 3 of them. Now I have 5. How many cookies did I have to start with? Since I have 5 left and I ate 3, I know I started with 8 because I count on from 5. . . 6, 7, 8.‖ |  |  |  |  |  | | --- | --- | --- | --- | | **Supplemental Lessons and Resources for Operations and Algebraic Thinking 8** | | | | | [Double Flap Cards](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Double%20Flap%20Cards.pdf) | [Double Flap Number Cards](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Double%20Flap%20Number%20Cards.pdf) | [Addition and Subtraction Puzzles](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Addition%20and%20Subtraction%20Number%20Puzzles.pdf) | [True or False?](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/True%20or%20False.pdf) |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision2.html) | [8. Look for and express regularity in repeated reasoning.](http://elementarymath.dmschools.org/8-look-for-and-express-regularity-in-repeated-reasoning1.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Geometry 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 to possess defining attributes. | * I can classify shapes by their attributes. * I can identify attributes that do and do not make a shape. * I can build and draw shapes to show attributes. * I can draw shapes to show attributes. |  |  | | --- | | **What does this standard mean the students will know and be able to do?** | | * Determine the difference between defining (always present) and non-defining (not always present) attributes * Use appropriate language to describe a three-dimensional shape: number of faces, number of vertices/points, number of edges * Students should compare and contrast two-and three-dimensional figures using defining attributes.   **Examples:**   * List two things that are the same and two things that are different between a triangle and a cube. * Given a circle and a sphere, students identify the sphere as being three-dimensional but both are round. * Given a trapezoid, find another two-dimensional shape that has two things that are the same. | | **Examples:** | | All triangles must be closed figures and have 3 sides. These are *defining* attributes. Triangles can be different colors, sizes and be turned in different directions, so these are *non-defining*.     * Given a circle and a sphere, students identify the sphere as being three-dimensional but both are round. * Given a trapezoid, find another two-dimensional shape that has two things that are the same. |  |  |  |  |  | | --- | --- | --- | --- | | **Supplemental Lessons and Resources for Geometry 1** | | | | | [Independent Practice](https://sharepoint.dmps.k12.ia.us/sites/divisions/curr/Public%20Curriculum%20Documents/Mathematics/Elementary%20Math%202013%20-%202014/1st%20Grade/Independent%20Practice.pdf) | [Properties Everywhere:](http://illuminations.nctm.org/LessonDetail.aspx?ID=L750) | [Amazing Attributes](http://illuminations.nctm.org/LessonDetail.aspx?ID=L751) | [Attribute Blocks](http://nlvm.usu.edu/en/nav/frames_asid_270_g_1_t_4.html?open=instructions&from=search.html) |  |  |  |  |  | | --- | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | | [1. Make sense of problems and persevere in solving them.](http://elementarymath.dmschools.org/1-make-sense-of-problems-and-persevere-in-solving-them5.html) | [3. Construct viable arguments and critique the reasoning of others.](http://elementarymath.dmschools.org/3-construct-viable-arguments-and-critique-the-reasoning-of-others5.html) | [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics4.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Geometry 2:  Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or 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. | * I can recognize that shapes can be composed and decomposed to make new shapes. * I can describe attributes of original and composite shapes (combined shapes). * I can determine how the original and created composite shapes (combined shapes) are alike and different. * I can create composite shapes * I can compose new shapes from a composite shape |  |  | | --- | | **What does this standard mean the students will know and be able to do?** | | This standardcalls for students to compose (build) a two-dimensional or three-dimensional shape from two shapes. This standard includes shape puzzles in which students use objects (e.g., pattern blocks) to fill a larger region.  The ability to describe, use and visualize the effect of composing and decomposing shapes is an important mathematical skill. It is not only relevant to geometry, but is related to children’s ability to compose and decompose numbers.  **Examples:**   * Show the different shapes that you can make by joining a triangle with a square. * Show the different shapes you can make joining a trapezoid with a half-circle. * Show the different shapes you can make with a cube and a rectangular prism.   Students may use pattern blocks, plastic shapes, tangrams, or computer environments to make new shapes. The teacher can provide students with cutouts of shapes and ask them to combine them to make a particular shape.  **Example:**   * What shapes can be made from four squares?   Students can make three-dimensional shapes with clay or dough, slice into two pieces (not necessarily congruent) and describe the two resulting shapes. For example, slicing a cylinder will result in two smaller cylinders. |  |  |  | | --- | --- | | **Supplemental Lessons and Resources for Geometry 2** | | | [Building Shapes](http://mathforum.org/varnelle/kgeo3.html) | [What’s So Special About Triangles, Anyway?](http://illuminations.nctm.org/LessonDetail.aspx?ID=L794) |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [1. Make sense of problems and persevere in solving them.](http://elementarymath.dmschools.org/1-make-sense-of-problems-and-persevere-in-solving-them5.html) | [4. Model with mathematics.](http://elementarymath.dmschools.org/4-model-with-mathematics4.html) | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) | |

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| |  |  | | --- | --- | | **Standard** | **Learner Objectives** | | Geometry 3:  Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. | * I can partition circles and rectangles into equal shares. * I can describe shares using half of , fourth of , and quarter of. |  |  | | --- | | **What does this standard mean the students will know and be able to do?** | | |  | | --- | | **1.G.3** is the first time students begin partitioning regions into equal shares using a context such as cookies, pies, pizza, etc... This is a foundational building block of fractions, which will be extended in future grades. Students should have ample experiences using the words, *halves, fourths,* and *quarters*, and the phrases *half of, fourth of,* and *quarter of*. Students should also work with the idea of the whole, which is composed of two halves, or four fourths or four quarters.  Example: How can you and a friend share equally (partition) this piece of paper so that you both have the same amount of paper to paint a picture? (show students a sheet of notebook paper)  Student 1: I would split the paper right down the middle. That gives us 2 halves. I have half of the paper and my friend has the other half.  Student 2: I would split it from corner to corner(diagonally). She gets half of the paper and I get of the paper See, if we cut here (along the Line), the parts are the same size.  Example:  Teacher: There is pizza for dinner. What do you notice about the slice on the pizza?  Student: There are two slices on the pizza. Each slice is the same size. Those are big slices!  Teacher: If we cut the same pizza into four slices (fourths) do you think the slices would be the same size, larger, or smaller as the slices on this pizza?  Student: When you cut the pizza into fourths. The slices are smaller than the other pizza. More slices mean that the slices get smaller and smaller. I want a slice from the first pizza!  Students need many experiences with different sized circles and rectangles to recognize that when they cut something into two equal pieces, each piece will equal one half of its original whole. Children should recognize that halves of two different wholes are not necessarily the same size. Also they should reason that decomposing equal shares into more equal shares results in smaller equal shares. | |  |  | | --- | | **Supplemental Lessons and Resources for Geometry 2** | | Teachers will use Investigations materials to teach this standard. If more practice is needed teams of teachers may find or create more experiences with this concept. |  |  |  |  | | --- | --- | --- | | **Emphasized Standards for Mathematical Practice** | | | | [2. Reason abstractly and quantitatively.](http://elementarymath.dmschools.org/2-reason-abstractly-and-quantitatively1.html) | [3. Construct viable arguments and critique the reasoning of others.](http://elementarymath.dmschools.org/3-construct-viable-arguments-and-critique-the-reasoning-of-others5.html) | [6. Attend to precision.](http://elementarymath.dmschools.org/6-attend-to-precision2.html) | | [7. Look for and make use of structure.](http://elementarymath.dmschools.org/7-look-for-and-make-use-of-structure3.html) |  |  | |

**Optional Lesson Progression**

Unit 1: Classroom Routines and Materials

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| **Investigation** | **Page Numbers** | **Primary Focus** | **Standard** |
| 1.1 | 26 – 31 | * I can count a set. (up to 20 for kindergarten review, can count a set up to 120 for 1st grade standard) * Setting up a daily routine and math workshop. |  |
| 1.2 | 32 – 37 |
| 1.3 | 38 – 42 |
| 1.4 | 43 – 48 |
| 2.1 | 54 – 59 | * I can count to 120 from a given number.   (Investigation only goes to 30 but extend beyond this to 120 (unit 6 M6 – M12 & \*\*\*\*) | NBT.1 |
| 2.2 | 60 – 64 | * I can read and represent numbers. | NBT. 1 |
| 2.3 | 65 – 70 | * I can write a numeral to represent a number of objects. | NBT.1 |
| 2.4 | 71 – 76 | * I can compare 2 single digit numbers using the symbols <, >, or =. * I can write a numeral to represent a number of objects. * I can read and represent numbers. | NBT.1  NBT. 3 |
| 2.5 | 77 | * I can compare 2 single digit numbers using the symbols <, >, or =. * I can write a numeral to represent a number of objects. | NBT.1  NBT.3 |
| 2.6 | 82 – 87 |
| 2.7 |  |
| 2.5A | CC4 - CC7 | * I can fluently add and subtract within 10. | OA.6 |
| 3.1 | 100 - 106 | * I can fluently add and subtract within 10. * I can compare 2 single digit numbers using the symbols <, >, or =. * I can show how to solve word problems. | OA.6  NBT.3  OA.2 |
| 3.2 | 107 – 111 |
| 3.3 | 112 - 118 | * I can show how to solve word problems. |  |
| 3.4 | 119 – 125 | * I can fluently add and subtract within 10. * I can compare 2 single digit numbers using the symbols <, >, or =. * I can show how to solve word problems. | OA.6  NBT.3  OA.2 |
| 3.5 | 126 – 130 |
| 3.6 | 131 - 136 | * I can fluently add and subtract within 10. * I can compare 2 single digit numbers using the symbols <, >, or =. | OA.6  NBT.3 |
| 3.7 | 137 – 141 | * I can 3 or more numbers to solve word problems. | OA.2 |
| 4.1 | 148 – 153 | * I can decompose a number within 10. | OA.6  OA.6  OA.6  OA.6  OA.6  OA.6 |
| 4.2 | 154 – 160 |
| 4.3 | 161 - 166 |
| 4.4 | 167 – 171 |
| 4.5 | 172 - 176 |
| 4.6 | 177 – 179 |
| 4.7 | 180 – 187 | * I can decompose a number within 10. * I can show how to solve word problems. | OA.6 |

**\*Unit length is approximate. Some lessons may take more than one day. Use teacher discretion based on student need when planning unit length.**

**Optional Lesson Progression**

Unit 2 – Making Shapes

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| **Investigation** | **Page Numbers** | **Primary Focus** | | **Standard** |
| 1.1 | 24 – 29 | * I can identify attributes that do make a shape * I can identify attributes that do not make a shape. * I can recognize that shapes can be composed and decomposed to make new shapes. | G.1  G.2 | |
| 1.2 | 30 – 35 |
| 1.3 | 36 – 43 |
| 1.4 | 44 – 47 |
| 1.5 | 48 – 53 |
| 1.6 | 54 – 60 |
| 2.1 | 70 – 76 | * I can classify shapes by their attributes. * I can identify attributes that do or do not make a shape. | G.1 | |
| 2.2 | 77 – 84 | * I can build and draw shapes to show attributes. * I can build and draw shapes to show attributes. | G.1  G.1 | |
| 2.3 | 85 – 89 |
| 2.4 | 90 – 94 | * I can build and draw shapes to show attributes. * I can classify shapes by their attributes. | G.1  G.2 | |
| 2.5 | 95 - 100 |

**\*Unit length is approximate. Some lessons may take more than one day. Use teacher discretion based on student need when planning unit length.**

Unit 3 – Investigation 1: Solving Story Problems – Combinations

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| **Investigation** | **Page Numbers** | **Primary Focus** | | **Standard** |
| 1.1 | 28 - 34 | * I can decompose a number within 10. | OA.6 | |
| 1.2 | 35 – 40 |
| 1.3 | 41 – 43 |
| 1.4 | 45 – 48 |
| 1.5 | 49 – 55 | * I can determine the missing value in an addition or subtraction problem. * I can decompose a number within 10 | OA.8  OA.6 | |
| 1.6 | 56 – 61 | * I can determine the missing value in an addition or subtraction problem. * I can decompose a number within 10 * I can count on from a given number and explain how it relates to addition. | OA.8  OA.6  OA.5 | |
| 1.7 | 62 – 65 | * I can count on from a given number and explain how it relates to addition. * I can show how to solve word problems. | OA.5  OA.2 | |
| 1.8 | 66 - 70 | * I can show how to solve word problems. | OA.2 | |
| 1.9 | 71 – 79 | * I can decompose numbers up to 10. * I can count on from a given number. |  | |
| 1.10A | CC15 - CC19 | * I can explain the meaning of the equal sign. * I can compare the values on each side on the equal sign and tell if they are true or false. | OA.7 | |

**\*Unit length is approximate. Some lessons may take more than one day. Use teacher discretion based on student need when planning unit length.**