

Utah Core Essential Elements and Range of Complexity Examples for Mathematics

Third Grade

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<http://schools.utah.gov/sars/Significant-Cognitive-Disabilities.aspx>

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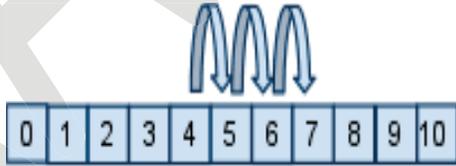
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COMMON CORE ESSENTIAL ELEMENTS AND COMPLEXITY EXAMPLES FOR THIRD GRADE

Third Grade Mathematics Standards: Operations and Algebraic Thinking

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples									
<p>Represent and solve problems involving multiplication and division.</p> <p>3.OA.1. Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. <i>For example, describe a context in which a total number of objects can be expressed as 5×7.</i></p> <p>3.OA.2. Interpret whole-number quotients of whole numbers (e.g., interpret $56 \div 8$ 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). <i>For example, describe a context in which a number of shares or a number of groups can be</i></p>	<p>EE3.OA.1-2. Use repeated addition and equal groups to find the total number of objects to find the sum.</p>	<p>Students will: EE3.OA.1-2. Use repeated addition to find the total number of objects arranged in a square or rectangular array. Ex. Using tiles in a template, identify the total number of tiles by adding the tiles in the template.</p> <div style="text-align: center;"> <table border="1" style="margin: auto;"> <tr><td>1</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>1</td></tr> </table> <p>$3 + 3 + 3 = 9$</p> </div> <p>Ex. Fill space of squares and rectangles with 1-inch tiles, add tiles in rows or columns to determine total number of tiles it takes to fill the shape (square/rectangle). Ex. Use an abacus to find the total.</p> <p>Students will: EE3.OA.1-2. Use repeated addition and equal groups to find the total number of objects to find the sum. Ex. Two birds + two birds + two birds = six birds. Ex. Given a repeated addition number sentence, use a number line to find the sum.</p> <div style="text-align: center;"> <p>$3 + 3 + 3 = 9$</p>  </div> <p>Students will:</p>	1	1	1	1	1	1	1	1	1
1	1	1									
1	1	1									
1	1	1									

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<p><i>expressed as $56 \div 8$.</i></p>		<p>EE3.OA.1-2. Use addition to find the total number of objects. Ex. Three apples + four apples = six apples. Ex. Add to find the total number of stars.</p>  <p>Ex. Skip count by twos to tell how many.</p> <p>Students will: EE3.OA.1-2. Identify which group has more or less when objects are added or taken away. Ex. When an object is added to a group of three, “Is this more?” and “Is this less?” Ex. When an object is taken from a group of three, “Is this more?” and “Is this less?”</p>
<p>3.OA.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.</p>	<p>EE3.OA.3. See EE3.OA.1. for repeated addition, a foundational skill for multiplication and division. (Multiplication begins in grade 4 and division begins in grade 5).</p>	
<p>3.OA.4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number that</i></p>	<p>EE3.OA.4. Solve addition and subtraction problems when result is unknown with number 0-30.</p>	<p>Students will: EE3.OA.4. Solve addition and subtraction problems when any number in the problem is unknown (result, start, change, difference) with numbers to 50. Ex. Using base-10 pieces, add and subtract two-digit numbers to find the sum and the difference. Ex. Use pictures of numbers to add and subtract two-digit numbers to find</p>

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<p><i>makes the equation true in each of the equations $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$</i></p>		<p>the sum and the difference.</p>  <p>Students will: EE3.OA.4. Solve addition and subtraction problems when result is unknown with number 0-30. Ex. Using base-10 pieces or counters, add and subtract. Ex. Use a 100s chart to find the sum or difference of given problems. Ex. Use count on strategies to add (e.g., When asked what is $5 + 2$, the student says 5 . . . 6 . . . 7).</p> <p>Students will: EE3.OA.4. Solve addition and subtraction problems with numbers 0-10. Ex. Use counters to add and subtract. Ex. Use number lines to add or subtract.</p>  <p>$4 + 3 = 7$</p> <p>Ex. Match the symbol to more or less than. Ex. Add one to a number by indicating the next number when asked (e.g., when the teacher says 3, 4, 5, the student says 6).</p> <p>Students will: EE3.OA.4. Identify numbers 1 to 9. Ex. Given a set of five, match it to the number.</p>

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		Ex .Given a set of three, identify the number of objects on number lines.
<p>Understand properties of multiplication and the relationship between multiplication and division.</p> <p>3.OA.5. Apply properties of operations as strategies to multiply and divide.⁸ <i>Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive</i></p>	<p>EE3.OA.5. N/A (Multiplication begins at grade 4.)</p>	

⁸ Students need not use formal terms for these properties.

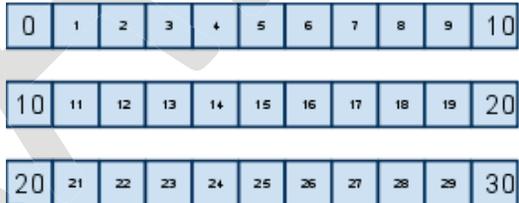
CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<i>property.)</i>		
<p>3.OA.6. Understand division as an unknown-factor problem. <i>For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</i></p>	<p>EE3.OA.6. N/A (Division begins at grade 5.)</p>	
<p>Multiply and divide within 100.</p> <p>3.OA.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of grade 3, know from memory all products of two one-digit numbers.</p>	<p>EE3.OA.7. N/A (Multiplication begins grade 4 and division begins in grade 5.)</p>	
<p>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p> <p>3.OA.8. Solve two-step word problems using the four operations. Represent</p>	<p>EE3.OA.8. Add to solve real-world one-step story problems from 0-30.</p>	<p>Students will:</p> <p>EE3.OA.8. Add to solve real world one-step story problems with sums up to 50 using various problem-solving models.</p> <p>Ex. Solve by adding (e.g. “There are 25 birds in a tree and 10 more joined them. How many birds are in a tree?”).</p> <p>Ex. Solve by adding (e.g., “I have 15 snacks on the cart and 25 snacks in the cupboard, how many snacks do I have all together?”).</p> <p>Ex. Solve by adding (e.g., “Add the pencils in two boxes and tell how many</p>

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<p>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.⁹</p>		<p>pencils we have”).</p> <p>Students will: EE3.OA.8. Add to solve real-world one-step story problems from 0-30. Represent the problem in pictures or with objects. Ex. Solve by adding (e.g., “Here are 10 pencils. We need 10 more for each person to get a pencil. How many will we need in all?”) Ex. Solve by adding (e.g., “Connie had five marbles. Juan gave her eight more marbles. How many marbles does Connie have all together?”) Ex. Solve by adding (e.g., “Add the crayons in these two boxes and show me how many we have in all.”)</p> <p>Students will: EE3.OA.8. Add to solve word problems identified through symbol representation. Ex. Complete word problems that have pictures rather than words. Ex. Solve by adding (e.g., “There are three ducks in the pond, two more joined. How many ducks are in the pond?” [picture representation]).</p> <p>Students will: EE3.OA.8. Identify the object(s) that appear in a real-world one-step story problem. Ex. Given a simple word problem and asked “What is the problem about?” point to an object from a choice of two that represents what the problem was about (e.g., box, toy). Ex. Indicate which object a word problem is about from an array of two choices.</p>
<p>3.OA.9. Identify arithmetic</p>	<p>EE3.OA.9. Identify</p>	<p>Students will:</p>

⁹ This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order.

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<p>patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>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.</i></p>	<p>arithmetic patterns.</p>	<p>EE3.OA.9. Complete a complex arithmetic pattern. Ex. Complete the pattern using more than two numbers (i.e., A, B, C, A, B, C). Ex. Using a 100s number chart, complete the pattern identified.</p> <p>Students will: EE3.OA.9. Identify arithmetic patterns. Ex. When provided arithmetic patterns on a 100s chart, identify the next number in the pattern. Ex. When given two number stamps, stamp an arithmetic pattern.</p> <p>Students will: EE3.OA.9. Identify a pattern. Ex. Make pattern jumps on a number line. Ex. Sing songs and identify the pattern in the song.</p> <p>Students will: EE3.OA.9. Follow patterns. Ex. Sing “Head, Shoulders, Knees, and Toes” and mimic the pattern. Ex. Using tactile objects (fur, sand, sand, fur) in a pattern, repeat the pattern. Ex. Using manipulatives, mimic the teacher to create a pattern.</p>

Third Grade Mathematics Standards: Number and Operations in Base Ten

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<p>Use place value understanding and properties of operations to perform multi-digit arithmetic.¹⁰</p> <p>3.NBT.1. Use place value understanding to round whole numbers to the nearest 10 or 100.</p>	<p>EE3.NBT.1. Identify the two 10s a number comes in between on a number line (numbers 0-30).</p>	<p>Students will:</p> <p>EE3.NBT.1. Identify the two 10s a number comes in between and tell which is closest (numbers 0-50). Ex. Use a color beaded number line to identify the number and round to the closest 10. Ex. Given a number line separated into tens (0-10, 10-20, etc.), stand on a number and identify the 10 that is closer.</p> <p>Students will:</p> <p>EE3.NBT.1. Identify the two 10s a number comes in between on a number line (numbers 0-30). Ex. Use a color beaded number line to identify the two 10s a number falls between. Ex. Given the number 14, they would identify 10 and 20.</p>  <p>Students will:</p> <p>EE3.NBT.1. Identify tens on a number line. Ex. Given a number line, circle the tens. Ex. Stand on a number chart on 10, 20, 30, etc.</p> <p>Students will:</p>

¹⁰ A range of algorithms may be used.

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		<p>EE3.NBT.1. Identify a number.</p> <p>Ex. Point to any number from one to three on a number line.</p> <p>Ex. Participate in a cake walk. When the music stops, look to see if they are on the number that is called out.</p> <p>Ex. Identify a number when point to or presented on a card.</p> <p>Ex. Given a number from one to three, point to the number symbol.</p>
<p>3.NBT.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.</p>	<p>EE3.NBT.2. Identify place value to tens.</p>	<p>Students will:</p> <p>EE3.NBT.2. Identify place value to 50.</p> <p>Ex. Build numbers with place value pieces.</p> <p>Ex. Identify the number in the ones and tens place value (e.g., the price of an item).</p> <p>Ex. Write the number in expanded form – $43 = 40 + 3$.</p> <p>Students will:</p> <p>EE3.NBT.2. Identify place value to tens.</p> <p>Ex. When given two-digit number cards, identify the number in the tens place value.</p> <p>Ex. When given a group of 10 frame models, arrange and count the value of the number.</p> <div data-bbox="1045 959 1346 1133" data-label="Image"> </div> <p>I saw three groups of 10 and five extras, so three groups of 10 = 30 and 5 more makes 35.</p> <p>Students will:</p> <p>EE3.NBT.2. Count to 10 using one-to-one correspondence.</p> <p>Ex. Given a bag of Skittles, pull 10 Skittles out of the bag.</p> <p>Ex. Select a domino and tell what number the dots represent.</p> <p>Ex. Shown a set of 10 objects, create a duplicate collection.</p> <p>Ex. Given a container of pennies, count out 10 from the container.</p>

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		<p>Students will: EE3.NBT.2. Identify more or less. Ex. Given two collections of objects (group of 10, group of 20), indicate, “Which has more?” Ex. Given math manipulatives representing a single unit and multiple units, point to the multiple unit representation when asked “which is more?”</p>
<p>3.NBT.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.</p>	<p>EE3.NBT.3. Count by tens using money.</p>	<p>Students will: EE3.NBT.3. Compare the value of money based on place value. Ex. Use money (dimes and pennies) to represent place value. Ex. Given 15 pennies, create a one group of 10 and a group of five ones.</p> <p>Students will: EE3.NBT.3. Count by tens using money. Ex. Given three dimes, count by 10 to determine total. Ex. Given five dimes, count by 10 to determine total.</p> <p>Students will: EE3.NBT.3. Identify whole numbers to 10. Ex. Given sets of 10 pennies, pair with numbers. Ex. Given sets of 10 pennies, pair with dimes.</p> <p>Students will: EE3.NBT.3. Count pennies to 10.</p>

Third Grade Mathematics Standards: Number and Operations—Fractions¹¹

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<p>Develop understanding of fractions as numbers.</p> <p>3.NF.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 $1/b$.</p> <p>3.NF.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.</p> <ul style="list-style-type: none"> ▪ 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 	<p>EE3.NF.1-3. Differentiate a fractional part from a whole.</p>	<p>Students will:</p> <p>EE3.NF.1-3. Identify halves or fourths as related to the whole.</p> <p>Ex. Identify pictures or objects that are split into fourths.</p> <p>Ex. Fold a square piece of paper into four equal parts and identify it as four parts of a whole.</p> <p>Ex. Complete a picture of half an object with the other half to make the whole.</p> <p>Ex. Given a set of pictures, color a half of each whole.</p> <p>Ex. Shown four halves, assemble them into two wholes and state the number of wholes.</p> <p>Students will:</p> <p>EE3.NF.1-3. Differentiate a fractional part from a whole.</p> <p>Ex. Sort pictures of whole objects and parts into the appropriate category.</p> <p>Ex. Use a variety of real-world objects (pizza, segmented chocolate bar, etc.) to demonstrate that each piece represents a part of the whole.</p> <p>Ex. Shown four halves, assemble them into two wholes.</p> <p>Students will:</p> <p>EE3.NF.1-3. Recognize that fractions are part of a whole.</p> <p>Ex. Using a self-sticking non-adhesive shape, take apart and put together fractional parts of a whole.</p> <p>Ex. Utilize wooden shapes, separate into halves and put back together into whole.</p> <p>Students will:</p> <p>EE3.NF.1-3. Identify a whole.</p> <p>Ex. Given a part of and the whole real-world object (pizza, segmented</p>

¹¹ Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, 8.

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<p>number $1/b$ on the number line.</p> <ul style="list-style-type: none"> ▪ 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. <p>3.NF.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <ul style="list-style-type: none"> ▪ Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. ▪ 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. ▪ Express whole numbers 		<p>chocolate bar, segmented toy pie, etc.), point to the whole.</p> <p>Ex. Given a puzzle with missing pieces and a puzzle with complete pieces, identify the whole.</p>

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<p>as fractions, and recognize fractions that are equivalent to whole numbers. <i>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.</i></p> <ul style="list-style-type: none"> ▪ 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. 		

Third Grade Mathematics Standards: Measurement and Data

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<p>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</p> <p>3.MD.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.</p>	<p>EE3.MD.1. Tell time to the hour on a digital clock.</p>	<p>Students will: EE3.MD.1. Tell time to the half hour using a digital clock. Ex. Look at a digital clock and read the time. Ex. When looking at a schedule, identify the hour.</p> <p>Students will: EE3.MD.1. Tell time to the hour on a digital clock. Ex. Given a time written to the hour, write the digital time. Ex. Identify the time of a digital clock that is set to the hour. Ex. Given a time on a digital clock, say the time to the hour.</p> <p>Students will: EE3.MD.1. Identify which is the hour on a digital clock. Ex. Relate the hour with the time on their daily schedule. Ex. Given cards showing digital clocks (with one clock having the hour circled and one clock with the minutes circled), indicate the clock with the hour circled.</p> <p>Students will: EE3.MD.1. Differentiate a digital clock from other measurement tools as a tool for telling time. Ex. Given a digital clock and a measuring cup, identify the clock for telling time. Ex. Asked, “How do we know when it is time to go to lunch?”, indicate a clock.</p>
<p>3.MD.2. Measure and estimate liquid volumes and masses of objects using standard units of</p>	<p>EE3.MD.2. Identify standard units of measure for mass and liquid.</p>	<p>Students will: EE3.MD.2. Measure liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Ex. Measure out items in a recipe.</p>

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<p>grams (g), kilograms (kg), and liters (l).¹² 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.¹³</p>		<p>Ex. Compare the mass of two items using a two-pan balance (balance scale). Ex. Given a standard unit scale, weigh 10 grams of sand.</p> <p>Students will: EE3.MD.2. Identify standard units of measure for mass and liquid. Ex. Sort the following real-world items as being measured by grams or liters when shown the measurement tools (apple measured in grams and juice in liters). Ex. When shown pictures of the tool, identify what would be measured grams or liters.</p> <p>Students will: EE3.MD.2. Select the appropriate tool to measure a solid or a liquid. Ex. When provided two pictures, one showing a ruler and one showing a scale, identify which tool measures mass. Ex. When provided two tools, a measuring cup and a scale, identify which tool measures liquid. Ex. Select from a variety of tools the appropriate tool to measure either mass or volume. Ex. Given a rock and a glass of water, identify which would be measured using a measuring cup.</p> <p>Students will: EE3.MD.2. Determine if an object is a solid and a liquid. Ex. Place objects from the room into the appropriate measurement category (solid or liquid). Ex. Given a rock and a glass of water, identify which is solid.</p>
Represent and interpret	EE3.MD.3. Use picture or	Students will:

¹² Excludes compound units such as cm³ and finding the geometric volume of a container.

¹³ Excludes multiplicative comparison problems (problems involving notions of “times as much.”)

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<p>data.</p> <p>3.MD.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. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i></p>	<p>bar graph data to answer questions about data.</p>	<p>EE3.MD.3. Interpret data to answer questions. Ex. Identify how they know there were no rainy days that week based on the chart. Ex. State two facts about the data on a graph.</p> <p>Students will: EE3.MD.3. Use picture or bar graph data to answer questions about data. Ex. Identify from a picture or bar graph how many students in the class were identified as wearing blue shirts. Ex. State how many days were sunny as charted on a weather chart.</p> <p>Students will: EE3.MD.3. Organize data. Ex. Take data collected from the lunch choices and place data into appropriate categories. Ex. Place data on a chart to represent the data collected.</p> <p>Students will: EE3.MD.3. Collect data. Ex. Using two posters, one for the students with brown hair, and one for the students with “yellow” hair, place their picture on the poster board that indicates what color hair they have. Ex. Use a daily survey to collect data on different interest.</p>
<p>3.MD.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</p>	<p>EE3.MD.4. Measure length of objects using standard tools, such as rulers, yardsticks, and meter sticks.</p>	<p>Students will: EE3.MD.4. Measure length of objects using standard tools, such as rulers, yardsticks, and meter sticks, by repeating the use of the measurement tool/unit. Ex. Given a row of three tile squares on the floor, measure the length of the tiles by repeating a ruler end to end. Ex. Given a hallway from the classroom to the bathroom across the hall, measure the distance with a yardstick by repeating the yardstick from end to end. Ex. Give one ruler length of yarn to each classmate for a project.</p>

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quarters.		<p>Students will: EE3.MD.4. Measure length of objects using standard tools, such as rulers, yardsticks, and meter sticks. Ex. Given an object and a measuring tool, use the tool to mark the length of the object. Ex. Given a ruler and snowfall, mark the depth of the snow with a ruler. Ex. Given a yardstick, measure different lengths or widths of the room and record the measurement.</p> <p>Students will: EE3.MD.4. Measure length with non-standard units of measurement. Ex. Identify the length of items in the classroom using a yardstick end-to-end and record as number of yardsticks. Ex. When provided two non-standard measuring units, identify which one is most appropriate for what is to be measured (pencil or long stick to measure the length of the classroom).</p> <p>Students will: EE3.MD.4. Place a standard measuring tool where one would begin to measure the length of an object. Ex. Given a string, place the ruler at the end of the string where one would begin a measure. Ex. Shown a picture of a boy standing against a height measure, and asked where you would look to find the boy’s height, indicate the top of the boy’s head. Ex. Given a bookshelf and a ruler, place the ruler on the lower left corner of the bookshelf front. (Anything with a definite lower left edge that will not allow the student to go beyond it will work.)</p>
Geometric measurement: understand concepts of	EE3.MD.5-7. N/A (Area begins at grade 6.)	

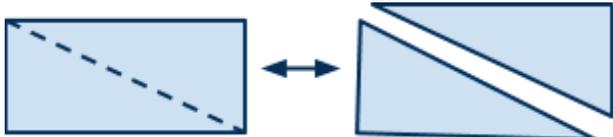
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<p>area and relate area to multiplication and to addition.</p> <p>3.MD.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.</p> <ul style="list-style-type: none"> ▪ A square with side length of 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area. ▪ 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. <p>3.MD.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).</p> <p>3.MD.7. Relate area to the operations of multiplication and addition.</p> <ul style="list-style-type: none"> ▪ Find the area of a 		

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<p>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.</p> <ul style="list-style-type: none"> ▪ 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. ▪ 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. ▪ Recognize area as additive. Find areas of 		

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<p>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.</p>		
<p>Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</p> <p>3.MD.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.</p>	<p>EE3.MD.8. N/A (Perimeter begins at grade 7.)</p>	

Third Grade Mathematics Standards: Geometry

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
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CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<p>Reason with shapes and their attributes.</p> <p>3.G.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.</p>	<p>EE3.G.1. Recognize that shapes in different categories can share attributes.</p>	<p>Students will:</p> <p>DD3.G.1. Identify the shared attributes of shapes in different categories. Ex. Given a Venn diagram, sort attributes of shapes (e.g., straight edges, curved edges, both). Ex. Trace the shared attributes of two different shapes.</p> <p>Students will:</p> <p>EE3.G.1. Recognize that shapes in different categories can share attributes. Ex. Shown different shapes answers, “What is the same?” Ex. Place in the appropriate category shapes with common attributes.</p> <p>Students will:</p> <p>EE3.G.1. Sort shapes by attributes. Ex. Given a sorting map, sort shapes by given attributes. Ex. Given a sorting map, sort different size same shapes into the same category (e.g., large and small triangle would go in the same category).</p> <p>Students will:</p> <p>EE3.G.1. Match shapes (e.g., squares, rectangles, circles, triangles). Ex. Match shapes to the shape of objects within the classroom. Ex. Match shapes that are the same.</p>
<p>3.G.2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. <i>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.</i></p>	<p>EE3.G.2. Recognize that shapes can be partitioned into equal areas.</p>	<p>Students will:</p> <p>3.G.2. Given shapes with multiple lines of symmetry, will be able to identify equal areas. Ex. Complete simple tangram puzzles with tangram pieces.</p> <p>Ex. Identify equal areas on complex shapes (i.e., stars, rectangle cut on the diagonal)</p> 

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		<p>Students will: EE3.G.2. Recognize that shapes can be partitioned into equal areas. Ex. Given a shape, cut the shape into equal areas. Ex. Cut a pizza into equal areas to hand out to students in the class.</p> <p>Students will: EE3.G.2. Create shapes. Ex. Work a pattern block puzzle that results in a shape. Ex. Given three small rectangles, rearrange them into a larger rectangle.</p> <p>Students will: EE3.G.2. Match shapes. Ex. Match a picture of a shape, to a shape in the classroom. Ex. Match two shapes from an array of three in which one is different.</p>