

**COMMON CORE ESSENTIAL ELEMENTS
AND RANGE OF COMPLEXITY
*FIFTH GRADE***

Fifth Grade Mathematics Standards: Operation and Algebraic Thinking

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
Write and interpret numerical expressions		
<p>5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p> <p>5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.</i></p>	EE5.OA.1-2. N/A	AA Student Will:

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Analyze patterns and relationships		
<p>5.OA.3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. <i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</i></p>	<p>EE5.OA.3. Identify and extend numerical patterns.</p>	<p>AA Student Will:</p> <p>EE5.OA.3. When given a rule, generate the pattern. Ex. Show me a pattern that increases by two and starts at 0 (i.e., 0, 2, 4, 6, . . .). Ex. Show me a pattern that increases by five and starts with 0 (i.e., 0, 5, 10, 15, . . .).</p> <p>EE5.OA.3. Identify and extend numerical patterns. Ex. Identify the following pattern as counting by twos and extend the pattern: 2, 4, 6, __ __ __. Ex. Identify the following pattern as counting by tens and extend the pattern: 23, 33, 43, __ __.</p> <p>EE5.OA.3. Extend a picture pattern. Ex. Given red, red, blue, red, red, ____, identify the missing color. Ex. Square, circle, triangle, square, ____, triangle. Identify the missing shape.</p> <p>EE5.OA.3. Repeat a pattern. Ex. Teacher claps twice, student claps twice. Ex. Activate a switch or indicate which choice shown repeats the pattern shown.</p>

Fifth Grade Mathematics Standards: *Number and Operations in Base Ten*

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<i>Understand the place value system</i>	AA Student Will:	
<p>5.NBT.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p>	<p>EE5.NBT.1. Compare numbers to each other based on place value groups by composing and decomposing to 99.</p>	<p>EE5.NBT.1. Compare numbers by composing and decomposing in two different ways. Ex. Decompose numbers by place value and compare by hundreds, tens, and ones (with the understanding that one 100, two 10s, and three ones combined is 123 ones). Ex. Compose numbers based on place value and compare to another number on the number line. Ex. Compare two numbers with different numbers in the tens place (e.g., 20 compared to 60 on the number line and explain 20 has two 10s or 20 ones and 60 is made of six 10s or 60 ones as it is written).</p> <p>EE5.NBT.1. Compare numbers to each other based on place value groups by composing and decomposing to 99. Ex. Compare two numbers with different numbers in the tens place (e.g., 20 compared to 60 on the number line). Ex. Demonstrate the difference between two numbers using dimes (e.g., 10 compared to 50). Ex. Decompose a number into tens and ones, given two different numbers (with the understanding that two 10s and three ones combined is 23 ones). Ex. Compare numbers on a table of ones and tens, given two different numbers.</p> <p>EE5.NBT.1. Compare numbers to 20. Ex. Using a number line and given two numbers, indicate where on the number line the numbers belong between the 10 markers. Ex. Given two numbers, indicate which one is greater, or less, or which comes first or last.</p> <p>EE5.NBT.1. Compare numbers 0-10. Ex. Given two numbers, indicate if numbers are same or different. Ex. Find two numbers that are the same/ or two that are different.</p>

Fifth Grade Mathematics Standards: *Number and Operations in Base Ten*

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<i>Understand the place value system</i>		AA Student Will:
<p>5.NBT.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p>	<p>EE5.NBT.2. Recognize patterns in the number of zeros when multiplying a number by powers of 10.</p>	<p>EE5.NBT.2. Extend patterns in the number of zeros when multiplying by the powers of 10 up to 1,000, order numbers to 100. Ex. Place numbers in order. Ex. Given a range of numbers (e.g. 200-300-253), arrange in order. Ex. Indicate (e.g. head stick, pointing) correct order up to 100. Ex. Given 20 dimes, count from 10 to 100 by tens and indicate that it is \$2.</p> <p>EE5.NBT.2. Recognize patterns in the number of zeros when multiplying a number by powers of 10. Ex. Presented with lists of number sentences (e.g., $10 \times 1 = 10$, $10 \times 2 = 20$, $10 \times 3 = 30$), identify the pattern. Ex. Arrange numbers in order when presented with tens place value number cards out of order. Ex. Presented numbers 10, 20, 30, 40, __, indicate the next correct number in the sequence. Ex. Given 10 dimes, count from 10 to 100 by tens and indicate that is \$1.</p> <p>EE5.NBT.2. Order multiples of ten ranging from 0-50 in sequential order least to greatest. Ex. Presented a range of numbers 0-50, indicate whether they are in correct order. Ex. Presented a range of numbers (e.g., 30-50), indicate if numbers are in correct order. Ex. Given five dimes, count from 10 to 50 by tens and indicate that is 50 cents.</p> <p>EE5.NBT.2. Indicate the sequential order of numbers to 10. Ex. Indicate if numbers 1-10 are in correct order when presented (in and out of order). Ex. Indicate where on number line each number belongs. Ex. Given 10 pennies, count to 10.</p>
<p>5.NBT.3. Read, write, and compare decimals to 1000ths.</p> <ul style="list-style-type: none"> ▪ Read and write decimals to 1000^{ths} using base-ten numerals, number names, and expanded 	<p>EE5.NBT.3. Round two-digit whole numbers to the nearest 10 from 0—90.</p>	<p>EE5.NBT.3. Round three-digit whole numbers to hundreds place. Ex. Choose card with correct answer on it after being presented a three-digit number and told to round to nearest hundreds place value. Ex. Given a three-digit number, generate (speaks, types, etc.) the answer for rounding to the nearest hundreds place value.</p> <p>EE5.NBT.3. Round two-digit whole numbers to the nearest 10 from 0-90. Ex. Given a number between 1-89 and cards with the answer on one, pick correct number when ask to round to nearest 10.</p>

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<p>Understand the place value system</p> <p>form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.</p> <ul style="list-style-type: none"> Compare two decimals to 1000ths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. 		<p>AA Student Will:</p> <p>Ex. Using a number line, round to nearest 10.</p> <p>EE5.NBT.3. Determine if a single-digit number is closer to zero or 10. Ex. Given a number between one and nine, indicate if the number is closer to zero or 10. Ex. Using a number line, indicate if given number is closer to 10 or zero.</p> <p>EE5.NBT.3. Indicate more or less than five. Ex. Using a pegboard with pegs placed in the holes divided into two different sets, indicate which has more or less. Ex. Presented with a set of five, and another set, indicate if second set is more or less than five. Ex. Presented with three pennies or five pennies, choose which is more. Ex. Given a number line, indicate if two or four is closer to five.</p>
<p>5.NBT.4. Use place value understanding to round decimals to any place.</p>	<p>EE5.NBT.4. Round money to a nearest dollar.</p>	<p>EE5.NBT.4. Round money to the nearest dime. Ex. Round cents to the nearest tenth of a dollar (e.g., 0.82 is closer to 0.80). Ex. Using advertisements with costs of items, identify how many whole dollars it would take to purchase the item (e.g., if an item costs \$3.65, is \$3.64 would it take \$3.60 or \$3.70 to pay for it?).</p> <p>EE5.NBT.4. Round money to the nearest dollar. Ex. Round coins to the nearest dollar. Ex. Identify how many whole dollars it would take to purchase an item (e.g., if an item costs three dollars and three quarters (\$3.75), it would take \$4, not \$3 to pay for it. Ex. Pick an item from an ad and tell how many dollars it would take to buy the item.</p> <p>EE5.NB.4. Round money to the nearest dime. Ex. Given 12 pennies, indicate whether one dime or two is closest. Ex. Using pennies earned, exchange for dimes.</p> <p>EE5.NB.4. Indicate which money amount is more. Ex. Given three pennies or a quarter, indicate the quarter is more. Ex. Offered three pennies and one dime, indicate the dime is more. Ex. Offered a dime and a quarter, indicate the quarter is more.</p>

Fifth Grade Mathematics Standards: *Number and Operations in Base Ten*

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<p><i>Perform operations with multi-digit whole numbers and with decimals to hundredths</i></p>		
<p>5.NBT.5. Fluently multiply multi-digit whole numbers using the standard algorithm.</p>	<p>EE5.NBT.5. Multiply whole numbers up to 5x5.</p>	<p>AA Student Will:</p> <p>EE5.NBT.5. Identify basic multiplication facts for numbers greater than five. Ex. Identify 36 as the answer to 6×6. Ex. When shown a flash card with 7×3, identify 21 as the answer.</p> <p>EE5.NBT.5. Multiply whole numbers up to 5×5. Ex. Choose correct answer for 3×3. Ex. When asked what 4×4 equals, identify 16 from an array of choices.</p> <p>EE5.NBT.5. Use repeated addition to show multiplication with single digits 1-5. Ex. Add $2 + 2 + 2$ to justify 2×3. Ex. When given a picture of a garden with two rows of five carrot plants in each, identify $5 + 5$.</p> <p>EE5.NBT.5. Use concrete representations to show numbers 1-5. Ex. Given pictures of five cars, arrange them into one row. Ex. Count four chairs in a row.</p>
<p>5.NBT.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>5.NBT.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value,</p>	<p>EE5.NBT.6-7. Illustrate the concept of division using fair and equal shares.</p>	<p>EE5.NBT.6-7. Apply the concept of fair share and equal shares to solve a division problem. Ex. Divide a snack equally among classmates. Ex. Divide a square piece of paper equally among classmates. Ex. Divide themselves into equal teams. Ex. Divide a quantity into equal shares (e.g., "If I find 20 dollars, how could five people share this?" $20/5=4$ (division structure partitive/fair shares).</p> <p>EE5.NBT.6-7. Illustrate the concept of division using fair and equal shares. Ex. Fold paper in equal shares.</p>  <p>Ex. Given 10 counting cubes divided among three students, recognize when students have the same number (equal share) and when students do not have the same number (not equal share).</p>

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<i>Perform operations with multi-digit whole numbers and with decimals to hundredths</i>		
properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.		<p>AA Student Will:</p> <p>EE5.NBT.6-7. Construct equal sets. Ex. Using sorting tray and colored blocks to construct equal sets. Ex. Given 16 pencils, share equally onto four students. Ex. Use an organizer to group or partition objects into two or more sets. Ex. Create a model of equal sets by counting the objects in each set.</p> <p>EE5.NBT.6-7. Replicate an equal set from a model. Ex. Count out three objects after teacher counts out three objects. Ex. Given a set of three objects, finding a matching set.</p>

Fifth Grade Mathematics Standards: *Number and Operations--Fractions*

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<i>Use equivalent fractions as a strategy to add and subtract fractions</i>		
5.NF.1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d =$</i>	EE5.NF.1. Differentiate between halves, fourths, and eighths.	<p>AA Student Will:</p> <p>EE5.NF.1. Differentiate fractional parts less than 1/4. Ex. With fraction bars labeled 1/4, compare the 1/4 to fraction bars to those less than 1/4 and identify the fraction using numerals. Ex. Using squares, fold it in 1/4, and then 1/8, and tell which is more and which is less. Ex. Divide a square into 1/4 and then 1/8 and tell which is more. Ex. Divide a circle into the correct fractions when shown the numerical representation of 1/2, 1/4, or 1/8.</p> <p>EE5.NF.1. Differentiate between halves, fourths, and eighths. Ex. With pictures cut into halves, pictures cut into fourths, and pictures cut in eighths, sort the pictures. Ex. Using fraction bars, identify the bar that is 1/2, 1/4, or 1/8 of the whole using a template. Ex. Given a partitioned shape, shade it to show 1/2, 1/4, or 1/8 when asked. Ex. Using an analog clock, shade the clock to show the quarter hour.</p> <p>EE5.NF.1. Differentiate between whole and a part. Ex. Given a whole sandwich, cut the sandwich in half (e.g., cut horizontally, vertically, and diagonally), indicate which is half and which is whole.</p>

Fifth Grade Mathematics Standards: *Number and Operations--Fractions*

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<p>Use equivalent fractions as a strategy to add and subtract fractions</p>		<p>AA Student Will:</p>
<p><i>(ad + bc)/bd).</i></p>		<p>Ex. Draw a square on a dry erase board; then draw a line to cut the square in half. Ex. When playing a game in which the class is divided into two teams, indicate that only half the class is on each team.</p> <p>EE5.NF.1. Recognize that fractions are part of a whole. Ex. Assemble a simple puzzle to demonstrate pieces of a whole. Ex. Using a self-sticking non-adhesive shape, take apart and put together fractional parts of a whole.</p>
<p>5.NF.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</i></p>	<p>EE5.NF.2. Solve two-step word problems using addition and subtraction of whole numbers.</p>	<p>EE5.NF.2. Solve two-step word problems using addition and subtraction of numbers after showing the problem in numerals. Ex. Susan has 35 compact disks. She bought three more and gave four to her little brother, Dylan. How many compact discs does Susan have now? Show the problem and explain why the answer is reasonable. Ex. Johnny has a bag of 36 cookies. He ate four of them and gave two to Amy. How many cookies does he have? Show the problem and explain why answer is reasonable.</p> <p>EE5.NF.2. Solve two-step word problems using addition and subtraction of whole numbers. Ex. Billy jumped rope for 10 minutes, played basketball for 15 minutes, and ran for five minutes. How many minutes did he spend exercising? Ex. Jenny has 30 text messages left on her cell phone plan. She sent 10 messages to Gary and received eight messages from her mom. How many text messages are left on her plan?</p> <p>EE5.NF.2. Solve one-step problems using addition and subtraction. Ex. Connie had five marbles. Juan gave her eight more marbles. How many marbles does Connie have all together? Ex. You have eight pennies. Give me two pennies. How many pennies do you have now?</p> <p>EE5.NF.3. Recognize words that are used for addition and subtraction. Ex. Using flash cards, indicate whether the word is used for addition or subtraction (e.g., more, increased, less, take away, decreased). Ex. Build a wall of words used for addition—sum, all together, add, more, increased, etc. Ex. Build a wall of words used for subtraction—difference, decreased, take away, less, spent, etc. Ex. Indicate the concept of more (addition) and less (subtraction).</p>

Fifth Grade Mathematics Standards: Number and Operations--Fractions

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<i>Apply and extend previous understandings of multiplication and division to multiply and divide fractions</i>		
<p>5.NF.3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i></p>	EE5.NF.3. N/A (See EE5.NF.1)	
<p>5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <ul style="list-style-type: none"> ▪ Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. <i>For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)</i> ▪ Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. <p>5.NF.5. Interpret multiplication as scaling (resizing), by:</p> <ul style="list-style-type: none"> ▪ Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. ▪ Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1. 	EE5.NF.4-5. N/A	
<p>5.NF.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p>	EE5.NF. 6-7. N/A	

Fifth Grade Mathematics Standards: Number and Operations--Fractions

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
Apply and extend previous understandings of multiplication and division to multiply and divide fractions		
<p>5.NF.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.¹⁸</p> <ul style="list-style-type: none"> ▪ Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. <i>For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.</i> ▪ Interpret division of a whole number by a unit fraction, and compute such quotients. <i>For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.</i> ▪ Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, how much chocolate will each person get if 3 people share $1/2$ lb. of chocolate equally? How many $1/3$-cup servings are in 2 cups of raisins?</i> 		

Fifth Grade Mathematics Standards: Measurement and Data

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
Convert like measurement units within a given measurement system		
<p>5.MD.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these</p>	<p>EE5.MD.1.a. Tell time using an analog or digital clock to the half or quarter hour.</p>	<p>AA Student Will:</p> <p>EE5.MD.1.a. Tell time using a digital clock to the minute and an analog clock to the nearest five minutes. Ex. Tell time to the minute on a digital clock. Ex. Place hand on a clock within five minutes of the stated time.</p> <p>EE5.MD.1.a. Tell time using an analog or digital clock to the half or quarter hour. Ex. Indicate time to the quarter hour on a digital clock. Ex. Place clock hands to show the half hour on an analog clock.</p> <p>EE5.MD.1.a. Tell time to the half hour using a digital clock and to the half hour using an analog clock.</p>

¹⁸ Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.

Fifth Grade Mathematics Standards: *Measurement and Data*

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
Convert like measurement units within a given measurement system		AA Student Will:
conversions in solving multi-step, real world problems.		<p>Ex. Identify which clock shows a stated time on a digital clock (3:30). Ex. Move hands on a clock to show a stated hour.</p> <p>EE5.MD.1.a. Identify morning and afternoon. Ex. Identify activity on schedule and relate to morning (before lunch) to afternoon (after lunch).</p>
	EE5.MD.1.b. Use customary units to measure weight and length of objects.	<p>EE5.MD.1.b. Use two customary units to measure weight and length of objects. Ex. Weigh an object in pounds and weigh again using ounces. Ex. Weigh objects in ounces and weigh again in pounds. Ex. Measure a variety objects in inches and measure again in feet. Ex. Measure an object using feet and measure again using inches.</p> <p>EE5.MD.1.b. Use customary units to measure weight and length of objects. Ex. Weigh a variety of objects in pounds. Ex. Weigh a variety of objects in ounces. Ex. Measure length of objects using feet. Ex. Measure length of objects using inches.</p> <p>EE5.MD.1.b. Identify customary units of measurement for weight and length. Ex. Given an object, choose pounds or inches to weigh a person. Ex. Shown a scale and a ruler, choose correct tool to measure weight of objects (use inch ruler if possible).</p> <p>EE5.MD.1.b. Identify which tools are used to weigh. Ex. Identify which tool you use to weigh a person. Ex. Indicate which tool is used to measure length. Ex. Indicate which tool is used to measure flour and sugar in a recipe.</p>
	EE5.MD.1.c. Indicate relative value of collections of coins.	<p>EE5.MD.1.c. Indicate relative value of coins and bills to each other. Ex. Given a quarter and a collection of nickels, select five nickels to trade for one quarter. Ex. Given a dollar and offered three quarters in exchange, indicate that the dollar is worth more. Ex. Given a dollar and a collection of dimes, select 10 dimes in exchange for the dollar.</p> <p>EE5.MD.1.c. Indicate relative value of collections of coins.</p>

Fifth Grade Mathematics Standards: *Measurement and Data*

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<i>Convert like measurement units within a given measurement system</i>		AA Student Will:
		<p>Ex. When asked what is worth five cents, chooses a nickel. When asked what is worth 25 cents, choose a quarter.</p> <p>Ex. Given two coins, identify the value of each and indicate which is more.</p> <p>Ex. Given 25 pennies and two dimes, indicate which set is worth more.</p> <p>EE5.MD.1.c. Identify coins (penny, nickel, dime, quarter) and their values.</p> <p>Ex. Given two coins, choose correct coin by name and value.</p> <p>Ex. Shown a coin, names coin.</p> <p>Ex. Show relative values of penny, nickel, dime, quarter by arranging them in order from least to most.</p> <p>EE5.MD.1.c. Match coins that are alike (penny, nickel, dime, quarter).</p> <p>Ex. Given a group of coins, match coins that are alike.</p> <p>Ex. Given a picture of a quarter, choose a quarter from a group of coins.</p>

Fifth Grade Mathematics Standards: *Measurement and Data*

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<i>Represent and interpret data</i>		AA Student Will:
<p>5.MD.2. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid</i></p>	<p>EE5.MD.2.a. Represent and interpret data on a picture, line plot, or bar graph given a model and a graph to complete.</p>	<p>EE5.MD.2.a. Collect, organize, and interpret data. Create a graph using a graph template, and display the data on the graph.</p> <p>Ex. Count number of students who like dogs and number who like cats. Show where on the graph to put the bar for dogs and for cats and where to indicate the number of votes and enter the results on the graph. Determine if the result shown seems reasonable and why (e.g., graph shows that students have more snakes as pets than dogs).</p> <p>Ex. Based on class observation (how many wore red today), determine how to graph data and show graph telling which was more, less, or the same.</p> <p>EE5.MD.2.a. Represent and interpret data on a picture, line plot, or bar graph given a model and a graph to complete.</p> <p>Ex. Given data, plot data points on a given graph. Determine which has more, less, or the same.</p> <p>Ex. Take given data from a survey and put the same data on a given graph using a model. Tell one</p>

Fifth Grade Mathematics Standards: *Measurement and Data*

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Represent and interpret data		AA Student Will:
<i>in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i>		thing the graph says about the survey. EE5.MD.2.a. Display data on a picture, line plot, or bar graph and answer questions about the graph. Ex. Indicate where data should go on the graph, and shade/color correct amount of spaces on given graph, answer a question about the graph (e.g., Is this about dogs?). Ex. Use objects to display data on graph and indicate type of graph. EE5.MD.2.a. Identify a simple graph. Ex. Identify a simple picture graph or schedule. Ex. Pick out a graph when presented with a graph and a non-graph.

Fifth Grade Mathematics Standards: *Measurement and Data*

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition		AA Student Will:
5.MD.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. <ul style="list-style-type: none"> ▪ A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. ▪ A solid figure, which can be packed without gaps or overlaps using n unit cubes, is said to have a volume of n cubic units. 5.MD.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft., and improvised units. 5.MD.5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. <ul style="list-style-type: none"> ▪ Find the volume of a right rectangular prism with whole- 	EE5.MD.3-5. Determine volume of a cube by counting units of measure.	EE5.MD.3-5. N/A EE5.MD.3-5. Determine volume of a cube by counting units of measure. Ex. Given cubes that fill a box with no gaps (small number, how many), determine by counting the number of cubes needed to fill the box. Ex. Given a cube 4 x 4 x 4 inches constructed of one square inch cube, disassemble it to determine by counting how many cubes were required. EE5.MD.3-5. Identify objects that have volume. Ex. Given a group of pictures (cup, rock, fork), choose which one can be filled. Ex. Identify objects in the room that can be filled (e.g., cup, fish tank). Ex. Given a square and a cube, indicate cube. EE5.MD.3-5. Demonstrate solid or liquid, full or empty.

Fifth Grade Mathematics Standards: *Measurement and Data*

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<i>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition</i>		AA Student Will:
<p>number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.</p> <ul style="list-style-type: none"> ▪ Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. ▪ Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems. 		<p>Ex. Given a glass of water and a paper weight, indicate which one you can pour.</p> <p>Ex. Given a glass of water and a paper weight, demonstrate that the water is liquid by pouring into another container.</p> <p>Ex. Given a glass full of water and an empty glass, indicate which one is full and which one is empty.</p>

Fifth Grade Mathematics Standards: *Geometry*

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples				
<i>Graph points on the coordinate plane to solve real-world and mathematical problems</i>		AA Student Will:				
<p>5.G.1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the</p>	<p>EE5.G.1-5. Sort two-dimensional figures and describe the common attributes such as angles, number of sides, corners (dimension), and</p>	<p>EE5.G.1-5. Sort into quadrant tables and describe figures by two common attributes.</p> <p>Ex. Sort figures by color and shape.</p> <p>Ex. Sort figures by congruent and non-congruent.</p> <p>Ex. Sort figures by angle and number of sides.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td align="center">Blue circles</td> <td align="center">Red circles</td> </tr> <tr> <td align="center">Blue squares</td> <td align="center">Red squares</td> </tr> </table> <p>EE5.G.1-5. Sort two-dimensional figures and describe the common</p>	Blue circles	Red circles	Blue squares	Red squares
Blue circles	Red circles					
Blue squares	Red squares					

Fifth Grade Mathematics Standards: Geometry

CCSS Grade-Level Clusters	Common Core Essential Elements	Range of Complexity Examples
<i>Graph points on the coordinate plane to solve real-world and mathematical problems</i>		AA Student Will:
<p>coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p> <p>5.G.2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p> <p>5.G.3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</p> <p>5.G.4. Classify two-dimensional figures in a hierarchy based on properties.</p>	color.	<p>attributes such as angles, number of sides, corners (dimension), and color.</p> <p>Ex. Given shapes, sort by angles and indicate how you sorted them.</p> <p>Ex. Given shapes sorted based on the number of sides, sort them by another attribute.</p> <p>EE5.G.1-5. Sort figures based on a given attribute.</p> <p>Ex. Sort figures by shape.</p> <p>Ex. Sort figures by size.</p> <p>EE5.G.1-5. Indicate two-dimensional shapes named.</p> <p>Ex. Touch the rough triangle.</p> <p>Ex. Touch the circle.</p>