Ohio Mathematics - Extended Learning Standards

Grade 6

Ratio and Proportional Relationships

Understand ratio concepts and use ratio reasoning to solve problems.

1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote that candidate A received, candidate C received nearly three votes.” 6.RP.1

Complexity a

a Given a visual model, represent two quantities as a ratio using whole numbers (e.g., In an image of 2 bananas and 3 oranges, what is the ratio of bananas to oranges?). 6.RP.1.A

Complexity b

b Given a visual model or manipulative, identify ratios involving whole numbers (e.g., The ratio of bananas to oranges is 2 to 3. Which shows the correct ratio of bananas to oranges?). 6.RP.1.B

Complexity c

c Given a manipulative, identify the units to be compared (e.g., Two bananas and three oranges are displayed. What two units are being compared?). 6.RP.1.C

Learning Progression

- Content works in conjunction with 6.RP.2-3. 6.RP.1.LP.A
- Count physical objects up to 10. 6.RP.1.LP.B
- Sort a collection of two types of objects using a given criteria (bananas and oranges). 6.RP.1.LP.C
- Count the number of objects in a given group (bananas and oranges). 6.RP.1.LP.D
- Identify differences in two types of objects. 6.RP.1.LP.E
- Engagement Statements (demonstration of engaged in the topic) 6.RP.1.LP.F
- Interact with physical objects. 6.RP.1.LP.G

2 Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar.” “We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.” 6.RP.2

Complexity a

a Solve problems involving unit rates (e.g., If it took 2 hours to mow 6 lawns, how many lawns could be mowed in 8 hours at the same rate? At what rate were lawns being mowed?). 6.RP.2.A

Complexity b

b Solve for a unit rate (e.g., It took James 2 hours to drive 100 miles. How fast did he drive per one hour?). 6.RP.2.B

Complexity c

c Identify a unit rate in a word problem (e.g., James drives 65 miles per hour on the highway. How many miles does James drive in one hour?). 6.RP.2.C

Learning Progression

- Content works in conjunction with 6.RP.1 and 6.RP.3. 6.RP.2.LP.A
- Recognize and understand common units of measure. 6.RP.2.LP.B
- Time: hours and minutes 6.RP.2.LP.C
- Length: feet and miles; meters and kilometers 6.RP.2.LP.D
- Liquid Capacity: cups and gallons; ounces and cups 6.RP.2.LP.E
- Weight: ounces and pounds 6.RP.2.LP.F
- Explore measurements in hours and minutes; feet and miles; meters and kilometers; cups and gallons; ounces and pounds. 6.RP.2.LP.G
- Use different types of time measurements tools to measure time in hours and minutes. 6.RP.2.LP.H
- Use different types of length measurement tools to measure distance in feet and miles or meters and kilometers 6.RP.2.LP.I
- Use different types of containers to measure liquid capacity in cups and gallons or ounces and cups. 6.RP.2.LP.J
- Use different types of scales to measure weight of objects in ounces and pounds. 6.RP.2.LP.K
- Engagement Statements (demonstration of engaged in the topic) 6.RP.2.LP.L
- Interact with measurement tools for time, length, liquid capacity, and weight. 6.RP.2.LP.M

3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole number measurements; find missing values in the tables; and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? c. Find a percent of a quantity as a rate per 100, e.g., 30% of a quantity means 30/100 times the quantity; solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. 6.RP.3

Complexity a

a1 Find a missing value in a ratio table. Students may use manipulatives to find the answer. 6.RP.3.A1

a2 Find the percent of a number using a model. 6.RP.3.A2

Complexity b

b1 Build equal ratios with manipulatives and record information in a table. 6.RP.3.B1

b2 Find the 10%, 20%, and 30% of a number using a model. 6.RP.3.B2

Complexity c

c1 Build equal ratios with manipulatives. 6.RP.3.C1

c2 Identify or represent a percent as a rate per 100 when given a model of 100 units (e.g., Mike gave away 20 of his 100 marbles. What percent of the marbles did he give away?). 6.RP.3.C2

Learning Progression

- Content works in conjunction with 6.RP.1-2. 6.RP.3.LP.A
- Count physical objects up to 100 by ones and tens. 6.RP.3.LP.B
- Count the number of objects in a given group (bananas and oranges). 6.RP.3.LP.C
- Demonstrate understanding of the word “equal”. 6.RP.3.LP.D
- Use a physical representation to skip count by 2s, 3s, 4s, 5s and 10s. 6.RP.3.LP.E
- Multiply one-digit numbers by 2s, 3s, 4s, 5s, and 10s. 6.RP.3.LP.F
- Record the number of tens and ones in a group of objects or drawings. 6.RP.3.LP.G
- Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. 6.RP.3.LP.H
- Understand the following as special cases: 10 can be thought of as a bundle of ten ones — called a “ten;” 6.RP.3.LP.I
- Understand the following as special cases: 100 can be thought of as a bundle of ten tens – called a “hundred” 6.RP.3.LP.J
- Understand the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). 6.RP.3.LP.K
- Represent a number of objects up to 100 on a hundred grid. 6.RP.3.LP.L
- Engagement Statements (demonstration of engaged in the topic) 6.RP.3.LP.M
- Interact with physical objects. 6.RP.3.LP.N

The Number System

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/ bc.) How much chocolate will each person get if 3 people share 1/2 pound of chocolate equally? How many 3/4 cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi? 6.NS.1

Complexity a

a Use visual models to show the relationship between the multiplication and division of fractions. 6.NS.1.A

Complexity b

b Recognize that dividing a whole number by a fraction is separating the whole into the required fractional parts and counting how many parts are in the total (e.g., Given one yard of fabric divided into pieces that are 2/3 of a yard, how many pieces will there be? Use a model of solve.). 6.NS.1.B

Complexity c

c Recognize a fraction as the division of the numerator by the denominator using unit fractions (e.g., Use a model to show that 1/4 means dividing a whole into 4 equal parts). 6.NS.1.C

Learning Progression

- Recognize the symbols for division (÷) and equals (=). 6.NS.1.LP.A
- Understand a fraction represents division (3 ÷ 4 = 34). 6.NS.1.LP.B
- Understand that 34 can be read as 3 divided by 4. 6.NS.1.LP.C
- Engagement Statements (demonstration of engaged in the topic) 6.NS.1.LP.D
- Interact with area (rectangles) and length (number lines) fraction models. 6.NS.1.LP.E

Compute fluently with multi-digit numbers and find common factors and multiples.

2 Fluently divide multi-digit numbers using a standard algorithm. 6.NS.2

Complexity a

a Divide multi-digit whole numbers (up to 3-digit numbers) by 1- or 2-digit numbers in problems with and without remainders. 6.NS.2.A

Complexity b

b Divide a 2-digit number up to 100 by a 1-digit number with and without remainders using models. 6.NS.2.B

Complexity c

c Divide a 2-digit whole number up to 20 by a 1-digit whole number without remainder using models. 6.NS.2.C

Learning Progression

- Identify 2, 3, 4, 5, 6, and 10 blocks. 6.NS.2.LP.A
- Identify groups of blocks 2s, 3a, 4s, 5s, 6s, and 10s. 6.NS.2.LP.B
- Share up to 20 objects equally between 2, 3, 4, 5, 6, and 10 people (without remainders). 6.NS.2.LP.C
- Build groups of blocks into rows and columns (arrays). 6.NS.2.LP.D
- Count the number of blocks in a given array 6.NS.2.LP.E
- Identify the number of blocks in each row and each column. 6.NS.2.LP.F
- Recognize factors in an array. 6.NS.2.LP.G
- Relate a picture or objects to a number sentence. 6.NS.2.LP.H
- Identify a number sentence. 6.NS.2.LP.I
- Recognize the symbols for multiplication (×), division (÷), and equals (=). 6.NS.2.LP.J
- Read and interpret a traditional one-step number sentence (6 ÷ 3 = x). 6.NS.2.LP.K
- Know that a symbol x can represent a missing value. 6.NS.2.LP.L
- Recognize related multiplication and division number sentences. 6.NS.2.LP.M
- Write the number sentence to express the total as a product of two factors. 6.NS.2.LP.N
- Solve 1-step number sentences involving multiplication or division. 6.NS.2.LP.O
- Engagement Statements (demonstration of engaged in the topic) 6.NS.2.LP.P
- Interact with physical objects (blocks) or drawings representing multiplication and division. 6.NS.2.LP.Q

3 Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation. 6.NS.3

Complexity a

a Add, subtract, and multiply multidigit decimals using place value models. 6.NS.3.A

Complexity b

b Add and subtract multi-digit decimals using place value models. 6.NS.3.B

Complexity c

c Add decimals to the tenths place using place value models. 6.NS.3.C

Learning Progression

- Explore place values using place value models. (Base-10 blocks, Cuisenaire rods, pennies, nickels, dimes, quarters, etc.) 6.NS.3.LP.A
- Know the names and values of pennies, nickels, dimes, and quarters. 6.NS.3.LP.B
- Know the symbols for dollars ($), cents (¢), and decimal point (.). 6.NS.3.LP.C
- Match a collection of pennies and dimes to the visual model of the decimal. 6.NS.3.LP.D
- Record the value of a collection of pennies or dimes using dollar or cent notation. 6.NS.3.LP.E
- Represent a value of a collection of coins on a place value chart. 6.NS.3.LP.F
- Recognize the value of a decimal to tenths using a place value chart. 6.NS.3.LP.G
- Use language of tenths in real-world contexts. 6.NS.3.LP.H
- Add collections of coins (pennies and dimes). 6.NS.3.LP.I
- Write the number sentence for the addition of two collections of coins. 6.NS.3.LP.J
- Engagement Statements (demonstration of engaged in the topic) 6.NS.3.LP.K
- Interact with linear models or place value models. (Base10 blocks, Cuisenaire rods, pennies, dimes, etc.) 6.NS.3.LP.L

4 Find the greatest common factor of two whole numbers less than or equal to 100, and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2). 6.NS.4

Complexity a

a1 Identify the greatest common factor of two whole numbers (up to 20). 6.NS.4.A1

a2 Use a factor and distributive property to rewrite the sum of two whole numbers (up to 50). Models may be used. 6.NS.4.A2

Complexity b

b Identify factors of whole numbers (up to 50). 6.NS.4.B

Complexity c

c Identify factors of whole numbers (up to 20). 6.NS.4.C

Learning Progression

- Identify a number sentence. 6.NS.4.LP.A
- Count the number of objects in an array. 6.NS.4.LP.B
- Recognize the symbols for addition (+), subtraction, (–), multiplication (×), division (÷), and equals (=). 6.NS.4.LP.C
- Read and interpret a traditional one-step number sentence (2 × 3 = x). 6.NS.4.LP.D
- Relate a picture or objects to a number sentence. 6.NS.4.LP.E
- Know that a symbol x can represent a missing value. 6.NS.4.LP.F
- Count to 30. 6.NS.4.LP.G
- Count physical objects up to 30. 6.NS.4.LP.H
- Identify groups of blocks 2s, 5s, and 10s. 6.NS.4.LP.I
- Build groups of blocks into rows and columns (arrays). 6.NS.4.LP.J
- Count the number of blocks in a given array. 6.NS.4.LP.K
- Build an array and count the number of blocks. 6.NS.4.LP.L
- Identify the number of blocks in each row and each column. 6.NS.4.LP.M
- Match an array to its factors. 6.NS.4.LP.N
- Engagement Statements (demonstration of engaged in the topic) 6.NS.4.LP.O
- Interact with physical objects (blocks) or drawings representing addition, subtraction, or multiplication word problems. 6.NS.4.LP.P

Apply and extend previous understandings of numbers to the system of rational numbers.

5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values, e.g., temperature above/ below zero, elevation above/ below sea level, credits/ debits, positive/negative electric charge. Use positive and negative numbers to represent quantities in realworld contexts, explaining the meaning of 0 in each situation. 6.NS.5

Complexity a

a Represent real-world problems involving integers (e.g., temperatures, elevations, and distances from a fixed point (map reading). 6.NS.5.A

Complexity b

b Identify the opposites of realworld examples of integers (e.g., opposite of gaining 40 yards is losing 40 yards). 6.NS.5.B

Complexity c

c Identify or explain positive or negative regions in real-world models (e.g., sea elevations, yardage on football field, thermometer, etc.). 6.NS.5.C

Learning Progression

- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 6.NS.5.LP.A
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 6.NS.5.LP.B
- Understand a coordinate grid is formed by a vertical and horizontal number line. 6.NS.5.LP.C
- Recognize the horizontal number line as the x-axis. 6.NS.5.LP.D
- Recognize the vertical number line as the y-axis. 6.NS.5.LP.E
- Recognize the intersection of the x-axis and y-axis as the origin. 6.NS.5.LP.F
- Location of the origin is at point 0,0 on the coordinate place. 6.NS.5.LP.G
- Engagement Statements (demonstration of engaged in the topic) 6.NS.5.LP.H
- Interact with coordinate grid. 6.NS.5.LP.I

6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., −(−3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. 6.NS.6

Complexity a

a1 Place 3 rational numbers on a number line. 6.NS.6.A1

a2 Identify the quadrants in terms of their sign; (+,+), (+,-), (-,-),(- ,+). 6.NS.6.A2

Complexity b

b1 Find an integer and its opposite on a number line. 6.NS.6.B1

b2 Explain the directionality of the xand y- axis (horizontal vs. vertical). 6.NS.6.B2

Complexity c

c1 Locate a given positive or negative number on a number line. 6.NS.6.C1

c2 Identify the quadrants of a coordinate plane as Quadrant I, Quadrant II, Quadrant III, Quadrant IV. 6.NS.6.C2

Learning Progression

- Know what a number line is. 6.NS.6.LP.A
- Know the order of the numbers from 0 to 10. 6.NS.6.LP.B
- Identify a whole number on a number line marked with whole numbers up to 10. 6.NS.6.LP.C
- Identify 0 on a number line. 6.NS.6.LP.D
- Identify a missing whole number value on a number line marked with whole number up to 10. 6.NS.6.LP.E
- Compare distances of objects using a vertical or horizontal number line. 6.NS.6.LP.F
- Understand that 2 is the distance from 0 to 2 and 3 is the distance from 0 to 3 using standard units for all lengths from 1 to 10. 6.NS.6.LP.G
- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 6.NS.6.LP.H
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 6.NS.6.LP.I
- Understand a coordinate grid is formed by a vertical and horizontal number line. 6.NS.6.LP.J
- Recognize the horizontal number line as the x-axis. 6.NS.6.LP.K
- Recognize the vertical number line as the y-axis. 6.NS.6.LP.L
- Recognize the intersection of the x-axis and y-axis as the origin. 6.NS.6.LP.M
- Location of the origin is at point 0,0 on the coordinate place. 6.NS.6.LP.N
- Engagement Statements (demonstration of engaged in the topic) 6.NS.6.LP.O
- Interact with coordinate grid. 6.NS.6.LP.P

7 Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number

line diagram. For example, interpret -3 > -7 as a statement that -3 is located to the right of -7 on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write -3°C > -7°C to express the fact that -3°C is warmer than -7 °C. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write |-30| = 30 to describe the size of the debt in dollars. d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars. 6.NS.7

Complexity a

a On a number line, order rational numbers from smallest to largest (limit to 3 rational numbers). 6.NS.7.A

Complexity b

b On a number line, order integers from smallest to largest (limit to 5 whole numbers). 6.NS.7.B

Complexity c

c On a number line, order whole numbers from smallest to largest (limit to 3 whole numbers). 6.NS.7.C

Learning Progression

- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 6.NS.7.LP.A
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 6.NS.7.LP.B
- Understand a coordinate grid is formed by a vertical and horizontal number line. 6.NS.7.LP.C
- Recognize the horizontal number line as the x-axis. 6.NS.7.LP.D
- Recognize the vertical number line as the y-axis. 6.NS.7.LP.E
- Recognize the intersection of the x-axis and y-axis as the origin. 6.NS.7.LP.F
- Location of the origin is at point 0,0 on the coordinate place. 6.NS.7.LP.G
- Engagement Statements (demonstration of engaged in the topic) 6.NS.7.LP.H
- Interact with coordinate grid. 6.NS.7.LP.I

8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. 6.NS.8

Complexity a

a Plot whole number ordered pairs in a realworld example (e.g., mapping locations). 6.NS.8.A

Complexity b

b Plot whole number ordered pairs. 6.NS.8.B

Complexity c

c Identify the x- and y-axis, and plot an ordered pair in quadrant 1 of a coordinate plane. 6.NS.8.C

Learning Progression

- Content works in conjunction with 6.EE.9. 6.NS.8.LP.A
- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 6.NS.8.LP.B
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 6.NS.8.LP.C
- Understand a coordinate grid is formed by a vertical and horizontal number line. 6.NS.8.LP.D
- Recognize the horizontal number line as the x-axis. 6.NS.8.LP.E
- Recognize the vertical number line as the y-axis. 6.NS.8.LP.F
- Recognize the intersection of the x-axis and y-axis as the origin. 6.NS.8.LP.G
- Location of the origin is at point 0,0 on the coordinate place. 6.NS.8.LP.H
- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 6.NS.8.LP.I
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 6.NS.8.LP.J
- Understand a coordinate grid is formed by a vertical and horizontal number line. 6.NS.8.LP.K
- Recognize the horizontal number line as the x-axis. 6.NS.8.LP.L
- Recognize the vertical number line as the y-axis. 6.NS.8.LP.M
- Recognize the intersection of the x-axis and y-axis as the origin. 6.NS.8.LP.N
- Location of the origin is at point 0,0 on the coordinate place. 6.NS.8.LP.O
- Engagement Statements (demonstration of engaged in the topic) 6.NS.8.LP.P
- Interact with coordinate grid. 6.NS.8.LP.Q

Expressions and Equations

Apply and extend previous understandings of arithmetic to algebraic expressions.

1 Write and evaluate numerical expressions involving whole-number exponents. 6.EE.1

Complexity a

a Write and evaluate numerical expressions involving exponents of squares and cubes only (e.g., 52 + 43 evaluate). No variables should be used. 6.EE.1.A

Complexity b

b Write and/or evaluate expressions with integers (e.g., a model of 10 apples and giving 2 away). No variables or exponents should be used. 6.EE.1.B

Complexity c

c Identify a model that is equivalent to a numerical expression. 6.EE.1.C

Learning Progression

- Content works in conjunction with 6.EE.2-9. 6.EE.1.LP.A
- Identify a number sentence. 6.EE.1.LP.B
- Identify a physical object or drawing. 6.EE.1.LP.C
- Know the operations for each of the symbols (+, -, ×, ÷, =) 6.EE.1.LP.D
- Read and interpret a traditional number sentence (2 × 2 = 4) 6.EE.1.LP.E
- Relate a picture or objects to a number sentence. 6.EE.1.LP.F
- Group or partition sets of numbers into equal groups to determine the missing number. 6.EE.1.LP.G
- Record a number sentence to express the total as the sum of equal addends. 6.EE.1.LP.H
- Identify a numerical expression without unknowns or exponents. 6.EE.1.LP.I
- Engagement Statements (demonstration of engaged in the topic) 6.EE.1.LP.J
- Interact with physical objects (blocks) or drawings that represents an expression. 6.EE.1.LP.K

Apply and extend previous understandings of arithmetic to algebraic expressions.

2 Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as 5 − y. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2(8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, using the algebraic order of operations when there are no parentheses to specify a particular order. For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length s = 1/2. 6.EE.2

Complexity a

a Given a context, student will write an algebraic expression for a context with 2 or 3 terms involving variables. 6.EE.2.A

Complexity b

b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient) in simple expressions. 6.EE.2.B

Complexity c

c Evaluate an algebraic expression with 2 to 3 terms. (The value of the variables to be substituted into the expression should be limited to whole numbers.) 6.EE.2.C

Learning Progression

- Content works in conjunction with 6.EE.1 and 6.EE.3-9. 6.EE.2.LP.A
- Identify a number sentence. 6.EE.2.LP.B
- Know the operations for each of the symbols (+, -, ×, ÷, =) 6.EE.2.LP.C
- Read and interpret a traditional one-step number sentence (2 × 3 = _). 6.EE.2.LP.D
- Relate a picture or objects to a number sentence. 6.EE.2.LP.E
- Know that a letter or a symbol can represent a missing value. 6.EE.2.LP.F
- Recognize a numerical expression with and without variables. 6.EE.2.LP.G
- Identify a numerical expression without exponents. 6.EE.2.LP.H
- Engagement Statements (demonstration of engaged in the topic) 6.EE.2.LP.I
- Interact with physical objects (blocks) or drawings that represents an expression. 6.EE.2.LP.J

3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3(2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to

produce the equivalent expression 6(4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y. 6.EE.3

Complexity a

a Identify equivalent algebraic expressions using distributive property (e.g., 2(x+3) is equivalent to 2x+6). 6.EE.3.A

Complexity b

b Identify equivalent algebraic expressions using commutative property (e.g., x+3 is equivalent to 3+x). 6.EE.3.B

Complexity c

c Identify equivalent numerical expressions using the commutative property (e.g., 2+3 is equivalent to 3+2). 6.EE.3.C

Learning Progression

- Content works in conjunction with 6.EE.1-2 and 6.EE.4-9. 6.EE.3.LP.A
- Identify a number sentence. 6.EE.3.LP.B
- Know the operations for each of the symbols (+, -, ×, ÷, =) 6.EE.3.LP.C
- Read and interpret a traditional number sentence (2 × 3 = 6). 6.EE.3.LP.D
- Relate a picture or objects to a number sentence. 6.EE.3.LP.E
- Write the number sentence to express the total as a product of two factors. 6.EE.3.LP.F
- Know that a letter or a symbol can represent a missing value. 6.EE.3.LP.G
- Recognize a numerical expression with and without variables. 6.EE.3.LP.H
- Identify a numerical expression without exponents. 6.EE.3.LP.I
- Engagement Statements (demonstration of engaged in the topic) 6.EE.3.LP.J
- Interact with physical objects (blocks) or drawings that represents an expression. 6.EE.3.LP.K

4 Identify when two expressions are equivalent, i.e., when the two expressions name the same number regardless of which value is substituted into them. For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for. 6.EE.4

Complexity a

a Identify equivalent expressions (e.g., 2x + x is equivalent to 3x) with whole number coefficients. 6.EE.4.A

Complexity b

b Identify equivalent expressions (limit to variables with no coefficient) (e.g., x+x is equivalent to 2x). 6.EE.4.B

Complexity c

c Identify equivalent expressions (limit to whole number expressions) (e.g., 2+3 is equivalent to 5). 6.EE.4.C

Learning Progression

- Content works in conjunction with 6.EE.1-3 and 6.EE.5-9. 6.EE.4.LP.A
- Identify a number sentence. 6.EE.4.LP.B
- Know the operations for each of the symbols (+, -, ×, ÷, =) 6.EE.4.LP.E
- Read and interpret a traditional number sentence (2 × 3 = 6). 6.EE.4.LP.F
- Relate a picture or objects to a number sentence 6.EE.4.LP.G
- Write the number sentence to express the total as a product of two factors. 6.EE.4.LP.H
- Know that a letter or a symbol can represent a missing value. 6.EE.4.LP.I
- Recognize a numerical expression with and without variables. 6.EE.4.LP.J
- Identify a numerical expression without exponents. 6.EE.4.LP.K
- Engagement Statements (demonstration of engaged in the topic) 6.EE.4.LP.L
- Interact with physical objects (blocks) or drawings that represents an expression. 6.EE.4.LP.M

Reason about and solve one-variable equations and inequalities.

5 Understand solving an equation or inequality as a process of answering a question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. 6.EE.5

Complexity a

a Given an inequality statement in the form of x > c or x < c determines if a given value makes the inequality true. (For 3 > b, if b equals 5, is the inequality true?) 6.EE.5.A

Complexity b

b Given a onestep equation and set of values for the variable, determine which value makes the equation true. (For 3x = 9, does x = 2, 3, 4, or 6 make the equation true?) 6.EE.5.B

Complexity c

c Given a one-step equation and a value for the variable, determine if the value makes the equation true. (For 3x = 9, does x = 4 make the equation true?) 6.EE.5.C

Learning Progression

- Content works in conjunction with 6.EE.1-4 and 6.EE.6-9. 6.EE.5.LP.A
- Identify a number sentence. 6.EE.5.LP.B
- Know the operations for each of the symbols (+, -, ×, ÷, =) 6.EE.5.LP.C
- Read and interpret a traditional one-step number sentence (2 × 3 = _). 6.EE.5.LP.D
- Relate a picture or objects to a number sentence. 6.EE.5.LP.E
- Know that a letter or a symbol can represent a missing value. 6.EE.5.LP.F
- Recognize a numerical expression with and without variables. 6.EE.5.LP.G
- Identify a numerical expression without exponents. 6.EE.5.LP.H
- Engagement Statements (demonstration of engaged in the topic) 6.EE.5.LP.I
- Interact with physical objects (blocks) or drawings that represents an expression. 6.EE.5.LP.J

6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 6.EE.6

Complexity a

a Represent the missing information with a variable in a realworld problem. 6.EE.6.A

Complexity b

b Identify the missing information in real-world problem. 6.EE.6.B

Complexity c

c Identify a variable in an equation. 6.EE.6.C

Learning Progression

- Content works in conjunction with 6.EE.1-5 and 6.EE.7-9. 6.EE.6.LP.A
- Identify a number sentence. 6.EE.6.LP.B
- Know the operations for each of the symbols (+, -, ×, ÷, =) 6.EE.6.LP.C
- Read and interpret a traditional one-step number sentence (2 × 3 = _). 6.EE.6.LP.D
- Relate a picture or objects to a number sentence. 6.EE.6.LP.E
- Know that a letter or a symbol can represent a missing value. 6.EE.6.LP.F
- Recognize a numerical expression with and without variables. 6.EE.6.LP.G
- Identify a numerical expression without exponents. 6.EE.6.LP.H
- Engagement Statements (demonstration of engaged in the topic) 6.EE.6.LP.I
- Interact with physical objects (blocks) or drawings that represents an expression. 6.EE.6.LP.J

7 Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q, and x are all non-negative rational numbers. 6.EE.7

Complexity a

a Using real-world contexts, write and solve one-step equations using whole numbers. Models may be used (e.g., Jim has several balloons. He gives 2 balloons to his brother and now has 5 balloons left. How many balloons did Jim have to begin with?). 6.EE.7.A

Complexity b

b Solve a one-step equation using one of the 4 operations with whole numbers using models. 6.EE.7.B

Complexity c

c Solve a one-step equation using addition and subtraction with whole numbers using models. 6.EE.7.C

Learning Progression

- Content works in conjunction with 6.EE.1-6 and 6.EE.8-9. 6.EE.7.LP.A
- Know what a number line is. 6.EE.7.LP.B
- Know the order of the numbers from 0 to 50. 6.EE.7.LP.C
- Identify a whole number on a number line marked with whole numbers up to 50. 6.EE.7.LP.D
- Identify 0 on a number line. 6.EE.7.LP.E
- Identify a missing whole number value on a number line marked with whole number up to 50. 6.EE.7.LP.F

- Compare distances of objects using a vertical or horizontal number line. 6.EE.7.LP.G
- Understand that 2 is the distance from 0 to 2 and 3 is the distance from 0 to 3 using standard units for all lengths from 1 to 50. 6.EE.7.LP.H
- Represent a number with a set of physical objects or a drawing. 6.EE.7.LP.I
- Understand addition is the combining of two (or more) sets of objects. 6.EE.7.LP.J
- Understand subtraction is taking away of one amount of objects from another. 6.EE.7.LP.K
- Understand that addition and subtraction are opposites. 6.EE.7.LP.L
- Recognize the symbols for addition (+), subtraction, (–), and equals (=). 6.EE.7.LP.M
- Relate counting to addition and subtraction, e.g., by counting on 2 to add 2. 6.EE.7.LP.N
- Add and subtract within 10 using strategies. Strategies may include: 6.EE.7.LP.O
- Counting on 6.EE.7.LP.P
- Making ten (8 + 6 = 8 + 2 + 4 = 10 + 4 = 14) 6.EE.7.LP.Q
- Decomposing a number leading to a ten (13 − 4 = 13 − 3 − 1 = 10 − 1 = 9) 6.EE.7.LP.R
- Using the relationship between addition and subtraction; knowing that 6.EE.7.LP.S
- 8 + 4 = 12, one knows 12 − 8 = 4 and 6.EE.7.LP.T
- Creating equivalent but easier or known sums (adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). 6.EE.7.LP.U
- Engagement Statements (demonstration of engaged in the topic) 6.EE.7.LP.V
- Interact with physical objects (blocks) or drawings (may include 100s chart) representing whole numbers within 50. 6.EE.7.LP.W

8 Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams. 6.EE.8

Complexity a

a Identify an inequality that is represented on a number line using a variable (e.g.,) 6.EE.8.A

Complexity b

b Identify an inequality that represents a realworld or mathematical problem (e.g., Jane is 23 years old. Sally is 19 years old. Which inequality correctly compares Jane and Sally's ages? 23>19). 6.EE.8.B

Complexity c

c Identify an inequality that compares two whole numbers using the >, <, and =. 6.EE.8.C

Learning Progression

- Content works in conjunction with 6.EE.1-7 and 6.EE.9. 6.EE.8.LP.A
- Recognize the numerals from 1 to 100. 6.EE.8.LP.B
- Represent numbers from 1 to 100 using physical objects. 6.EE.8.LP.C
- Know the word names for the numbers 1-100. 6.EE.8.LP.D
- Write numerals from 0 to 100. 6.EE.8.LP.E
- Know the order of numbers from 1 to 100. 6.EE.8.LP.F
- Relate the understanding of order to the concept of greater than or less than. 6.EE.8.LP.G
- 5 apples is less than 7 apples 6.EE.8.LP.H
- Explore place value tools. 6.EE.8.LP.I
- Base-10 blocks 6.EE.8.LP.J
- Place value chart 6.EE.8.LP.K
- 100's chart 6.EE.8.LP.L
- Engagement Statements (demonstration of engaged in the topic) 6.EE.8.LP.M
- Interact with physical objects (blocks) or drawings. 6.EE.8.LP.N

Represent and analyze quantitative relationships between dependent and independent variables.

9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time. 6.EE.9

Complexity a

a Complete a table given a one-step equation and graph the coordinates. 6.EE.9.A

Complexity b

b Find the outputs (dependent variable) given an equation and the inputs in table form. 6.EE.9.B

Complexity c

c Identify the input and output in a table. 6.EE.9.C

Learning Progression

- Content works in conjunction with 6.NS.8 and 6.EE.1-8. 6.EE.9.LP.A
- Explore a chart or a table. 6.EE.9.LP.B
- Know the meaning of the words input and output. 6.EE.9.LP.C
- Relate input and output to a function machine. 6.EE.9.LP.D
- Understand that a table is made up of columns and rows. 6.EE.9.LP.E
- Engagement Statements (demonstration of engaged in the topic) 6.EE.9.LP.F
- Interact with a chart or table. 6.EE.9.LP.G

Geometry

Solve real-world and mathematical problems involving area, surface area, and volume.

1 Through composition into rectangles or decomposition into triangles, find the area of right triangles, other triangles, special quadrilaterals, and polygons; apply these techniques in the context of solving real-world and mathematical problems. 6.G.1

Complexity a

a Demonstrate that the area of a right triangle is 1/2 × length × height (e.g., Two same right triangles combined make a rectangle, and the area of a triangle is half the area of the rectangle it can be composed into). Demonstrate these techniques in real-world and mathematics problems. 6.G.1.A

Complexity b

b Demonstrate that the area of all rectangles is length × width (e.g., Multiply side lengths to find the area of rectangles with whole-number side lengths). Demonstrate these techniques in real-world and mathematics problems. 6.G.1.B

Complexity c

c Find the area of rectangles with whole-number side lengths by counting unit squares. Demonstrate these techniques in real-world and mathematics problems. 6.G.1.C

Learning Progression

- Identify surfaces where an area can be measured. 6.G.1.LP.A
- Lay unit squares on a flat surface. 6.G.1.LP.B
- Count unit squares on a flat surface. 6.G.1.LP.C
- Arrange unit squares into rows and columns. 6.G.1.LP.D
- Identify surfaces where a perimeter can be measured. 6.G.1.LP.E
- Lay inch squares around a flat surface. 6.G.1.LP.F
- Count inch squares all the way around a flat surface. Measure length and width with units and record the measurement. 6.G.1.LP.G
- Engagement Statements (demonstration of engaged in the topic) 6.G.1.LP.H
- Interact with flat two-dimensional surfaces. 6.G.1.LP.I

2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = \ell \cdot w \cdot h$ and $V = B \cdot h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. 6.G.2

Complexity a

a Recognize that the volume of a right rectangular prism can be found by multiplying the height by the area of the base (using whole numbers) (e.g., show that $V = \ell \cdot w \cdot h$ and $V = B \cdot h$). Limited to whole number edge lengths. 6.G.2.A

Complexity b

b Demonstrate that unit cubes can be used to build figures that have volume, and determine the volume of a figure. Limit to whole number edge lengths. 6.G.2.B

Complexity c

c Find the volume of a right rectangular prism (e.g., count the number of unit cubes it takes to fill a rectangular prism) (up to 25 cubes). Limit to whole number edge lengths. 6.G.2.C

Learning Progression

- Identify and describe shapes (squares, rectangles, cubes, rectangular prisms). 6.G.2.LP.A
- Identify shapes as two-dimensional (lying in a plane, “flat”) or three dimensional (“solid”). 6.G.2.LP.B
- Recognize a cube and a rectangular prism. 6.G.2.LP.C
- Recognize a unit cube. 6.G.2.LP.D
- Understand 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. 6.G.2.LP.E
- Engagement Statements (demonstration of engaged in the topic) 6.G.2.LP.F
- Interact with linear models or physical objects (blocks). 6.G.2.LP.G

3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. 6.G.3

Complexity a

a Find the length(s) of the side(s) of a polygon drawn in quadrant 1 of the coordinate plane. 6.G.3.A

Complexity b

b Plot points of a polygon in quadrant 1 of the coordinate plane and identify the name of the shape. 6.G.3.B

Complexity c

c Given a graph of plotted vertices, connect the vertices forming a polygon and identify the name of the shape that is created. 6.G.3.C

Learning Progression

- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 6.G.3.LP.A
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 6.G.3.LP.B
- Understand a coordinate grid is formed by a vertical and horizontal number line. 6.G.3.LP.C

- Recognize the horizontal number line as the x-axis. 6.G.3.LP.D
- Recognize the vertical number line as the y-axis. 6.G.3.LP.E
- Recognize the intersection of the x-axis and y-axis as the origin. 6.G.3.LP.F
- Location of the origin is at point 0,0 on the coordinate place. 6.G.3.LP.G
- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 6.G.3.LP.H
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 6.G.3.LP.I
- Understand a coordinate grid is formed by a vertical and horizontal number line. 6.G.3.LP.J
- Recognize the horizontal number line as the x-axis. 6.G.3.LP.K
- Recognize the vertical number line as the y-axis. 6.G.3.LP.L
- Recognize the intersection of the x-axis and y-axis as the origin. 6.G.3.LP.M
- Location of the origin is at point 0,0 on the coordinate place. 6.G.3.LP.N
- Engagement Statements (demonstration of engaged in the topic) 6.G.3.LP.O
- Interact with coordinate grid. 6.G.3.LP.P

4 Represent threedimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. 6.G.4

Complexity a

a Given a net and a threedimensional figure, find the surface area of prisms, pyramids, and cubes. 6.G.4.A

Complexity b

b Identify a net given a threedimensional figure or identify threedimensional figure given a net. 6.G.4.B

Complexity c

c Identify cubes, rectangular prisms (e.g., cubes, rubber eraser, pyramids). 6.G.4.C

Learning Progression

- Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, rectangular prisms, and spheres). 6.G.4.LP.A
- Know the names of three-dimensional shapes (cubes, cones, cylinders, rectangular prisms, and spheres). 6.G.4.LP.B
- Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. 6.G.4.LP.C
- Correctly name shapes regardless of their orientations or overall size. 6.G.4.LP.D

- Identify shapes as two-dimensional (lying in a plane, “flat”) or three dimensional (“solid”). 6.G.4.LP.E
- Describe, compare, create, and compose shapes. 6.G.4.LP.F
- Describe and compare two- or three-dimensional shapes, in different sizes and orientations, using informal language to describe their commonalities, differences, parts, and other attributes. 6.G.4.LP.G
- Model shapes in the world by building shapes from components (such as sticks and clay balls) and drawing shapes. 6.G.4.LP.H
- Combine simple shapes to form larger shapes. 6.G.4.LP.I
- Engagement Statements (demonstration of engaged in the topic) 6.G.4.LP.J
- Interact with three-dimensional objects in their environment. 6.G.4.LP.K

Statistics and Probability

Develop understanding of statistical problem solving.

1 Develop statistical reasoning by using the GAISE model: a. Formulate Questions: Recognize and formulate a statistical question as one that anticipates variability and can be answered with quantitative data. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because of the variability in students’ ages. (GAISE Model, step 1) b. Collect Data: Design and use a plan to collect appropriate data to answer a statistical question. (GAISE Model, step 2) c. Analyze Data: Select appropriate graphical methods and numerical measures to analyze data by displaying variability within a group, comparing individual to individual, and comparing individual to group. (GAISE Model, step 3) d. Interpret Results: Draw logical conclusions from the data based on the original question. (GAISE Model, step 4) 6.SP.1

Complexity a

a Recognize a statistical question. 6.SP.1.A

Complexity b

b Identify when we might pose a statistical question. 6.SP.1.B

Complexity c

c Ask questions about a statistical situation. 6.SP.1.C

Learning Progression

- Identify a question. 6.SP.1.LP.A
- Know the meaning of the question mark (?). 6.SP.1.LP.B
- Organize, represent, and interpret data with up to four categories. 6.SP.1.LP.C
- Create picture graphs and bar graphs using whole number unit scales larger than one. 6.SP.1.LP.D
- Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. (limit to whole numbers). 6.SP.1.LP.E
- Understand the difference between a question and a statistical question. 6.SP.1.LP.F
- Engagement Statements (demonstration of engaged in the topic) 6.SP.1.LP.G
- Interact with data. 6.SP.1.LP.H

2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. 6.SP.2

Complexity a

a Given a data display, answer a statistical question about spread. 6.SP.2.A

Complexity b

b Given a data display, answer a statistical question about center. 6.SP.2.B

Complexity c

c Given a data display, answer a statistical question about shape. 6.SP.2.C

Learning Progression

- Identify information in a chart, table, or graph. 6.SP.2.LP.A
- Given a bar or picture graph build a graph based on student sorted data for example, votes for 4 different candidates or weather types, or occurrences of event or behavior). 6.SP.2.LP.B
- Interpret data from a given line, picture, or bar graph to solve a multi-step problem (limit to whole numbers). 6.SP.2.LP.C
- Interpret data represented in a graph by solving one-step “how many more” and “how many less” problems (limit to whole numbers). 6.SP.2.LP.D
- Engagement Statements (demonstration of engaged in the topic) 6.SP.2.LP.E
- Interact with data. 6.SP.2.LP.F

3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. 6.SP.3

Complexity a

a Find the mean using models according to the idea of “fair share.” Limit to 7 data points. 6.SP.3.A1

b Find the median of a data point. Limit to 7 data points. 6.SP.3.A2

Complexity b

c Find the median of a data set with an odd number of data points. Limit to 7 data points. 6.SP.3.B

Complexity c

- Identify the mode for a set of data. 6.SP.3.C

Learning Progression

- Identify numbers in a set of data. 6.SP.3.LP.A
- Identify the largest value in a data set. 6.SP.3.LP.B
- Identify information in a chart, table, or graph. 6.SP.3.LP.C
- Given a bar graph or picture graph, identify the largest/ tallest data point. 6.SP.3.LP.D
- Engagement Statements (demonstration of engaged in the topic) 6.SP.3.LP.E
- Interact with data. 6.SP.3.LP.F

Summarize and describe distributions.

4 Display numerical data in plots on a number line, including dot plots (line plots), histograms, and box plots. (GAISE Model, step 3) 6.SP.4

Complexity a

a Given pre-made axes, construct and interpret a histogram from a given or collected data set. 6.SP.4.A

Complexity b

b Given premade axes, construct and analyze a line plot from a given or collected data set. 6.SP.4.B

Complexity c

c Given pre-made axes, construct and analyze a bar graph from a given or collected data set. 6.SP.4.C

Learning Progression

- Identify information in a chart, table, or graph. 6.SP.4.LP.A
- Given a bar or picture graph build a graph based on student sorted data. 6.SP.4.LP.B
- Sort the categories by count. 6.SP.4.LP.C
- Interpret data from a given line, picture, or bar graph to solve a multi-step problem (limit to whole numbers). 6.SP.4.LP.D
- Interpret data represented in a graph by solving one-step “how many more” and “how many less” problems (limit to whole numbers). 6.SP.4.LP.E
- Engagement Statements (demonstration of engaged in the topic) 6.SP.4.LP.F
- Interact with data. 6.SP.4.LP.G

5 Summarize numerical data sets in relation to their context. a. Report the number of observations. b. Describe the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Find the quantitative measures of center (median and/or mean) for a numerical data set and recognize that this value summarizes the data set with a single number. Interpret mean as an equal or fair share. Find measures of variability (range and interquartile range), as well as informally describe the shape and the presence of clusters, gaps, peaks, and outliers in a distribution. d. Choose the measures of center and variability, based on the shape of the data distribution and the context in which the data were gathered. 6.SP.5

Complexity a

a Interpret information from a given or collected data set (e.g., Given a tally chart showing the number of pockets on students’ clothes in a class. Find the average number of pockets and the range of the data). 6.SP.5.A

Complexity b

b Interpret information from a given or collected data set (e.g., Given a tally chart showing the number of pets. Find the average number of

pets). 6.SP.5.B

Complexity c

c Interpret information from a given or collected data set (e.g., given a tally chart showing the favorite colors of the students in Joe's math class, determine which color was the most/ least favorite). 6.SP.5.C

Learning Progression

- Identify information in a chart, table, or graph. 6.SP.5.LP.A
- Given a bar or picture graph build a graph based on student sorted data. 6.SP.5.LP.B
- Sort the categories by count. 6.SP.5.LP.C
- Interpret data from a given line, picture, or bar graph to solve a multi-step problem (limit to whole numbers). 6.SP.5.LP.D
- Organize, represent, and interpret data with up to four categories. 6.SP.5.LP.E
- Create picture graphs and bar graphs using whole number unit scales larger than one. 6.SP.5.LP.F
- Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. (limit to whole numbers). 6.SP.5.LP.G
- Solve simple put together, take-apart, and compare problems with whole numbers in a graph. 6.SP.5.LP.H
- Engagement Statements (demonstration of engaged in the topic) 6.SP.5.LP.I
- Interact with data. 6.SP.5.LP.J