Spring Lake Elementary Schools Curriculum Map

6th Grade Math

The following CCSS's are embedded throughout the year, and are present in all units applicable: CCSS Math Practices: 1 Make sense of problems and persevere in solving them. 2 Reason abstractly and quantitatively. 3 Construct viable arguments and critique the reasoning of others. 4 Model with mathematics. 5 Use appropriate tools strategically. 6 Attend to precision. 7 Look for and make use of structure 8 Look for and express regularity in repeated reasoning. School wide assessments: • Moby Max – Fall and Spring • Discovery Ed. Benchmark Assessment – Test A (Fall), Test B (Winter) Test C (Spring)				
Unit/Essential Question	**CCSS**	**Learning Target**	**Resources/ Mentor Texts**	**Assessment**
Chapter 1- Numerical Expressions and Factors	• **CCSS.Math.Content.6.NS.B.2** Fluently divide multi-digit numbers using the standard algorithm. • **CCSS.Math.Content.6.NS.B.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)… • **CCSS.Math.Content.6.EE.A.1** Write and evaluate numerical expressions involving whole-number exponents. • **CCSS.Math.Content.6.EE.A.2** Write, read, and evaluate expressions in which letters stand for numbers.	**I can fluently divide multi-digit numbers using the standard algorithm.** **I can find the greatest common factor for numbers less than or equal to 100.** **I can find the least common multiple of two whole numbers less than or equal to 12.** **I can use the Distributive Property to factor out the greatest common factor from an addition expression with two whole numbers.**	***Big Ideas* Textbook** ***Big Ideas* Record and Practice Journal** ***Big Ideas* online resources**	**Quiz 1.1-1.3** **Quiz 1.4- 1.6** **Chapter 1 Test A**

	• **CCSS.Math.Content.6.EE.A.2b** 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.	**I can write and evaluate expressions involving exponents.** **I can identify the operations of an expression and explain that a quantity (parenthesis) is both a number by itself and two numbers with an operation.**		

Unit/Essential Question	CCSS	Learning Target	Resources/ Mentor Texts	Assessment
Chapter 2 – Fractions and Decimals	• **CCSS.Math.Content.6.NS.A.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 lb 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? • **CCSS.Math.Content.6.NS.B.3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	**I can compute and solve word problems involving division of fractions.** **I can fluently add multi-digit decimals using the standard algorithm for each operation.** **I can fluently subtract multi-digit decimals using the standard algorithm for each operation.** **I can fluently multiply multi-digit decimals using the standard algorithm for each operation.** **I can fluently divide multi-digit decimals using the standard algorithm for each operation.**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Quiz 2.1-2.3** **Quiz 2.4-2.6** **Chapter 2 Test A**

Unit/Essential Question	CCSS	Learning Target	Resources/ Mentor Texts	Assessment
Chapter 3 – Algebraic Expressions and Properties	• **CCSS.Math.Content.6.NS.B.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)… • **CCSS.Math.Content.6.EE.A.2** Write, read, and evaluate expressions in which letters stand for numbers. • **CCSS.Math.Content.6.EE.A.2a** 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. • **CCSS.Math.Content.6.EE.A.2b** 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. • **CCSS.Math.Content.6.EE.A.2c** 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, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas V = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2.	**I can find the greatest common factor for numbers less than or equal to 100.** **I can find the least common multiple of two whole numbers less than or equal to 12.** **I can use the Distributive Property to factor out the greatest common factor from an addition expression with two whole numbers.** **I can write and evaluate expressions involving exponents.** **I can write an expression with variables.** **I can identify the operations of an expression and explain that a quantity (parenthesis) is both a number by itself and two numbers with an operation.** **I can evaluate an expression/equation using order of operations when given the value of a variable.**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Quiz 3.1-3.2** **Quiz 3.3-3.4** **Chapter 3 Test A**

Unit/Essential Question **Chapter 4 – Areas of Polygons**	**CCSS** • **CCSS.Math.Content.6.G.A.1** Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. • **CCSS.Math.Content.6.G.A.1** Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	**Learning Target** **I can find the area of triangles, quadrilaterals, and polygons by decomposing shapes to help me find the area in a real-world problem.** **I can draw polygons on a coordinate plane and use the coordinates to find the lengths of the side(s) to help me solve real world problems.**	**Resources/ Mentor Texts** **Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Assessment** **Quiz 4.1 – 4.2** **Quiz 4.3-4.4** **Chapter 4 Test A**

Unit/Essential Question	CCSS	Learning Target	Resources/ Mentor Texts	Assessment
Chapter 5 – Ratios and Rates	• **CCSS.Math.Content.6.RP.A.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 candidate A received, candidate C received nearly three votes." • **CCSS.Math.Content.6.RP.A.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."1 • **CCSS.Math.Content.6.RP.A.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. • **CCSS.Math.Content.6.RP.A.3a** 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.	**I can use ratios to compare data.** **I can identify unit rates.** **I can create a table of equivalent ratios, find missing values, and then plot on a coordinate plane.** **I can solve unit rate problems.** **I can understand percent as a rate per hundred and solve problems involving finding the whole if given a part and the percent.** **I can use ratios to convert or change quantities to appropriate measurement units.**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Quiz 5.1- 5.4** **Quiz 5.6-5.7** **Chapter 5 Test A**

	• **CCSS.Math.Content.6.RP.A.3b** 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? • **CCSS.Math.Content.6.RP.A.3c** 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. • **CCSS.Math.Content.6.RP.A.3d** Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.			

Unit/ Essential Question	CCSS	Learning Target	Resources/ Mentor Texts	Assessment
Chapter 6 – Integers and the Coordinate Plane	• **CCSS.Math.Content.6.NS.C.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 real-world contexts, explaining the meaning of 0 in each situation.** • **CCSS.Math.Content.6.NS.C.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. • **CCSS.Math.Content.6.NS.C.6a** 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. • **CCSS.Math.Content.6.NS.C.6b** 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. • **CCSS.Math.Content.6.NS.C.6c** 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. • **CCSS.Math.Content.6.NS.C.7** Understand ordering	**I can understand and use positive and negative numbers to represent quantities in real-world situations.** **I can name the opposites of numbers.** **I can understand and plot pairs of positive and negative numbers on a coordinate plane, including reflections of those points.** **I can find and position integers on a number line and a coordinate plane.** **I can find the position of numbers or variables on a number line when given an inequality.** **I can write, interpret, and explain an inequality using integers in real-world situations (using a number line model).** **I understand absolute value as a distance from zero in real-world situations.** **I can compare absolute values of positives and negatives to**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Quiz 6.1-6..4** **Quiz 6.4-6.5** **Chapter 6 Test A**

	and absolute value of rational numbers. • **CCSS.Math.Content.6.NS.C.7a** 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*. • **CCSS.Math.Content.6.NS.C.7b** Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 ^{o}C > –7 ^{o}C to express the fact that –3^{o}C is warmer than –7 ^{o}C.* • **CCSS.Math.Content.6.NS.C.7c** 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*. • **CCSS.Math.Content.6.NS.C.7d** 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*. • **CCSS.Math.Content.6.NS.C.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.	**determine which number is farther from zero.** **I can solve real-world and mathematical problems by graphing coordinate pairs on a 4 quadrant coordinate plane and use absolute value to find the distance between two points on the same X or Y axis.**		

Unit/Essential Question	CCSS	Learning Target	Resources/ Mentor Texts	Assessment
Chapter 7 – Equations and Inequalities	• **CCSS.Math.Content.6.RP.A.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. • **CCSS.Math.Content.6.RP.A.3a** 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. • **CCSS.Math.Content.6.EE.B.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. • **CCSS.Math.Content.6.EE.B.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. • **CCSS.Math.Content.6.EE.B.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 nonnegative rational numbers.	**I can create a table of equivalent ratios, find missing values, and then plot on a coordinate plane.** **I can explain if a value from a set makes an inequality or equation true/false.** **I can write an expression or equation using a variable that helps me solve a real-world problem.** **I can solve a real-world and mathematical problems by evaluating an expression or equation when the variable is a positive rational number.** **I can write an inequality about a real-world situation and recognize that it has infinite solutions. I can graph that inequality on a number line.** **I can write an equation involving dependent and independent variables and evaluate that equation.**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources** **Hands-on Equations Kits**	**Quiz 7.1-7.4** **Quiz 7.5-7.7** **Chapter 7 Test A**

	• **CCSS.Math.Content.6.EE.B.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. • **CCSS.Math.Content.6.EE.C.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.			

<u>Unit/Essential Question</u>	**<u>CCSS</u>**	**<u>Learning Target</u>**	**<u>Resources/ Mentor Texts</u>**	**<u>Assessment</u>**
Chapter 8– Surface Area and Volume	• **CCSS.Math.Content.6.G.A.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 $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. • **CCSS.Math.Content.6.G.A.4** Represent three-dimensional 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.	**I can find the volume of right rectangular prisms expressed as a proper or improper fraction in various real-world and mathematical situations.** **I can represent 3D shapes using nets and use the net to help find the surface area of the figure.**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Quiz 8.1-8.2** **Quiz 8.3-8.4** **Chapter 8 Test A**

Unit/Essential Question	CCSS	Learning Target	Resources/ Mentor Texts	Assessment
Chapter 9– Statistical Measures	• **CCSS.Math.Content.6.SP.A.1** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *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 one anticipates variability in students' ages*. • **CCSS.Math.Content.6.SP.A.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. • **CCSS.Math.Content.6.SP.A.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. • **CCSS.Math.Content.6.SP.B.4** Display numerical data in plots on a number line, including dot plots, histograms, and box plots. • **CCSS.Math.Content.6.SP.B.5** Summarize numerical data sets in relation to their context, such as by: • **CCSS.Math.Content.6.SP.B.5a** Reporting the number of observations. • **CCSS.Math.Content.6.SP.B.5b** Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.	**I can write a statistical question that has more than one right answer.** **I can describe a set of data using its center (mode, median or mean) its spread (range or M.A.D) and its shape.** **I can describe a measure of center and a measure of variation for a data set.** **I can display data on a number line, dot plot (line plot), histogram, and box and whisker plot.** **I can tell how many items are in a data set.** **I can describe how data was collected and in what unit of measure.** **I can find the median, mean, interquartile range, mean absolute deviation (average distance from the mean) and outliers in a set of data.**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Quiz 9.1-9.3** **Quiz 9.4-9.5** **Chapter 9 Test A**

	• **CCSS.Math.Content.6.SP.B.5c** Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.			

Unit/Essential Question	CCSS	Learning Target	Resources/ Mentor Texts	Assessment
Chapter 10 – Statistics and Probability	• CCSS.Math.Content.6.SP.A.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. • CCSS.Math.Content.6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots. • CCSS.Math.Content.6.SP.B.5 Summarize numerical data sets in relation to their context, such as by: • CCSS.Math.Content.6.SP.B.5c Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. • CCSS.Math.Content.6.SP.B.5d Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	**I can describe a set of data using its center (mode, median or mean) its spread (range or M.A.D) and its shape.** **I can display data on a number line, dot plot (line plot), histogram, and box and whisker plot.** **I can find the median, mean, interquartile range, mean absolute deviation (average distance from the mean) and outliers in a set of data.** **I can choose the measure of center that best describes the date based on the context in which it was gathered.**	**Big Ideas Textbook** **Big Ideas Record and Practice Journal** **Big Ideas online resources**	**Quiz 10.1-10.2** **Quiz 10.3-10.4** **Chapter 10 Test A**