| Course Name: | 6th Grade Math | | |
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| Credits: | N/A | | |
| Prerequisites: | N/A | | |
| Description: | In Grade 6, instructional time focuses on these 6 critical areas: 1.) Understanding the concept of a ratio and using ratio language to describe a ratio relationship between two quantities.  2.)  Interpreting and computing quotients of fractions, and solving word problems involving division of fractions by fraction. 3.) Fluently adding, subtracting, multiplying, and dividing multi-digit decimals using the standard algorithm for each operation.  4.) Writing, reading, and evaluating expressions in which letters stand for numbers.  5.) Identifying when two expressions are equivalent and 6.)  Finding the areas of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; and applying these techniques in the context of solving real world and mathematical problems. | | |
| Academic Standards: | Wisconsin State Standards in Mathematics (2011) | | |
| Units: | Unit Length: | Unit Standards: | Unit Outcomes: |
| Rates, Ratios, and Proportions | 21 days | CC.6.RP.1, CC.6.RP.2, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9 | This unit introduces rates and ratios by connecting rate and ratio to whole number multiplication and division and using concepts of rate and ratio to solve problems. |
| Area of Polygons | 13 days | CC.6.G.1, CC.6.G.3, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.3, CC.6.EE.6 | Students explore formulas for the area of different polygons in this unit. They compose and decompose rectangles and parallelograms as they derive formulas. |
| Operations with Whole Numbers, Fractions, and Decimals | 24 days | CC.6.NS.1, CC.6.NS.2, CC.6.NS.3, CC.6.NS.4 | Unit 3 builds upon the concept of place value and its relationship to multiplication and division of whole numbers and decimals. |
| Surface Area of Prisms and Pyramids | 10 days | CC.6.G.1, CC.6.G.4, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.6 | Hands-on activities help students explore the properties of prisms and pyramids. They use the area concepts they learned in Unit 2 to find the surface area of these figures. |
| Expressions and Equations | 24 days | CC.6.EE.2, CC.6.EE.2b, CC.6.EE.2c, CC.6.EE.1, CC.6.EE.2a, CC.6.EE.4, CC.6.G.1, CC.6.G.4, CC.6.EE.3, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9, CC.6.EE.5, CC.6.EE.7, CC.6.EE.8 | Students write and evaluate algebraic expressions and analyze their underlying structures. They also learn to use the properties of arithmetic to recognize and write equivalent expressions. Students learn to find solutions for equations and inequalities. |
| Volume of a Rectangular Prism | 8 days | CC.6.G.1, CC.6.G.2, CC.6.G 4, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.6 | Students bring their prior knowledge to this unit as they explore volume for prisms that have fractional edge lengths. |

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| **Ratios and Rates with Fractions, Decimals, and Percents** | 20 days | CC.6.RP.1, CC.6.RP.2,, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.EE.6, CC.6.EE.7, CC. 6.RP.3c, CC.RP.3d, CC.6.EE.9, CC.6.G.1, CC.6.G.4 | Unit 7 builds upon the concepts of rates, ratios, and proportions introduced in Unit 1. The concept of unit rate is extended to all ratios, and unit rates are used to solve proportions, including those with non whole-number solutions. |
| **Analyzing Statistics** | 19 days | CC.6.SP.1, CC.6.SP.4, CC.6.SP.5, CC.6.SP.5a, CC.6.SP.2, CC.6.SP.3, CC.6.SP.5c, CC.6.SP.5d, CC.6.SP.5b | Students begin to think statistically as they make sense of data. They explore measures of center and variability as ways to describe data. |
| **Rational Numbers and the Coordinate Plane** | 15 days | CC.6.NS.5, CC.6.NS.6, CC.6.NS.6a, CC.6.NS.6b, CC.6.NS.6c, CC.6.NS.7, CC.6.NS.7a, CC.6.NS.7.b, CC.6.NS.7c, CC.6.NS.7d, CC.6.NS.8 | This unit extends our base-ten number system to include positive and negative rational numbers, using both number lines and the coordinate plane. |

| Unit Name: **Rates, Ratios, and Proportions** | **Length:** 21 days |
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| **Standards:**<br>CC.6.RP.1, CC.6.RP.2, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9 | **Outcomes:**<br>This unit introduces rates and ratios by connecting rate and ratio to whole number multiplication and division and using concepts of rate and ratio to solve problems. |
| **Essential Questions:**<br>How do ratios and proportions relate to multiplication and division?<br>What is a constant rate and how does it apply to a rate table?<br>How can a graph of a rate table aid in understanding if a rate is a constant rate?<br>How do ratio tables relate to rate tables?<br>How do ratios relate to proportions? | **Learning Targets:**<br>Students can solve a ratio problem.<br>Students can use ratio language to describe a ratio relationship between two quantities. |
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| Topic 1: **Multiplication and Rates** | **Length:** 7 days |
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| **Standard(s):**<br>CC.6.RP.2, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b | **Academic Vocabulary:**<br>column, row, Factor Puzzle, factors, product, multiple, rate table, unit rate, ratio, rate, constant rate, every, each, per, scrambled rate table |
| Lesson Frame:<br>Factor Puzzles and the Multiplication Table | I can relate Factor Puzzles to four numbers in the Multiplication table.<br>I can use various strategies to solve Factor Puzzles. |
| Lesson Frame:<br>Solving Factor Puzzles | I can solve and make Factor Puzzles. |
| Lesson Frame:<br>Rate Situations and Rate Tables | I can understand rate situations as involving a constant increase.<br>I can make a table to show a rate situation for many multiples of the situation. |
| Lesson Frame:<br>Rate Situations and Unit Rate Language | I can understand unit rate and totals made from rates.<br>I can understand unit rate language. |
| Lesson Frame:<br>Unit Rates, Products, and Rate Tables | I can decide if a constant rate is reasonable for a given situation.<br>I can identify rate tables and make up rate situations.<br>I can find the unit rate and use it to make a rate table.<br>I can make drawings to show a unit rate situation. |
| **Performance Tasks:**<br>Unit 1: Quick Quiz 1, Daily Quick Practice Assessments | Notes: |
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| Topic 2: **Special Rate Situations and Graphing** | **Length:** 3 days |
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| **Standard(s):**<br>CC.6.RP.2, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.EE.6, CC.6.EE.9 | **Academic Vocabulary:**<br>unit price, coordinate plane, x-axis, y-axis, ordered pair, coordinates, x-coordinate, y-coordinate, unit rate triangle, speed, distance, time |
| Lesson Frame:<br>Unit Pricing | I can determine missing values in a rate table.<br>I can solve unit pricing problems. |

| Lesson Frame:<br>Constant Speed | I can solve constant speed problems.<br>I can graph a rate table in the coordinate plane.<br>I can make a rate table using a given graph. |
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| **Performance Tasks:**<br>Unit 1: Quick Quiz 2, Daily Quick Practice Assessments | Notes: |

| Topic 3: **Solve Problems with Ratio and Proportion** | **Length:** 5 days |
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| **Standard(s):**<br>CC.6.RP.1, CC.6.RP.2, CC.6.RP.3, CC.6.RP.3a | **Academic Vocabulary:**<br>ratio, rate, Linked Rate Table, ratio table, basic ratio, equivalent ratios, proportion, solving a proportion |
| Lesson Frame:<br>Ratio as Linked Rates | I can understand that a ratio table is made from two related rate tables.<br>I can make drawing to show ratios. |
| Lesson Frame:<br>Finding Linked Values in Ratio tables | I can use ratio language and the 2:3 written form.<br>I can understand basic ratios and equivalent ratios.<br>I can recognize ratio and non-ratio tables. |
| Lesson Frame:<br>Seeing Proportions in Ratio Tables | I can understand that a proportion is made up of two equal ratios.<br>I can solve a proportion problem by solving a Factor Puzzle. |
| Lesson Frame:<br>Identify and Solve Proportion Situations | I can tell the assumptions that must be stated to make a situation a proportion problem.<br>I can understand that a Factor Puzzle can have the rows or columns switched and still represent a proportion. |
| **Performance Tasks:**<br>Unit 1: Quick Quiz 3, Daily Quick Practice Assessments | Notes: |

| Topic 4: **Identify, Solve, and Write Proportion Situations** | **Length:** 4 days |
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| **Standard(s):**<br>CC.6.RP.1, CC.6.RP.2, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.NS.4 | **Academic Vocabulary:**<br>greatest common factor, scale |
| Lesson Frame:<br>Solve Numeric Proportion Problems | I can solve numeric proportion problems.<br>I can create proportion problems for numeric proportions.<br>I can differentiate proportion from non-proportion problems. |
| Lesson Frame:<br>Basic Ratio Solution Strategies | I can solve proportion problems containing greater numbers.<br>I can use the greatest common factor to find a basic ratio. |
| Lesson Frame:<br>Write and Solve Proportion Problems | I can solve problems that use a basic ratio.<br>I can solve, explain, and edit proportion problems. |
| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful contexts. |

| Performance Tasks: Unit 1: Quick Quiz 4, Daily Quick Practice Assessments | Notes: |
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| Unit Name: **Area of Polygons** | **Length:** 13 days |
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| **Standards:**<br>CC.6.G.1, CC.6.G.3, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.3, CC.6.EE.6 | **Outcomes:**<br>Students explore formulas for the area of different polygons in this unit. They compose and decompose rectangles and parallelograms as they derive formulas. |
| **Essential Questions:**<br>How can you use a rectangle to find the area of a triangle, a parallelogram, and a trapezoid?<br>How could graphing a figure on a coordinate plane aid in finding the length of a side of that figure?<br>What does it mean to decompose a compound figure?<br>How does decomposing aid in the ability to find the area of a compound figure? | **Learning Targets:**<br>Students will be able to find the area of triangles.<br>Students will be able to find the area of quadrilaterals.<br>Students will be able to find the area of polygons.<br>Students will be able to find the area of compound figures. |
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| Topic 1: **Derive Area Formulas and Solve Problems: Parallelograms and Triangles** | **Length:** 5 days |
| **Standard(s):**<br>CC.6.G.1, CC.6.EE.2, CC.6.EE.2c | **Academic Vocabulary:**<br>perimeter, area, square unit, base, height, square inch, square foot, square centimeter, right triangle, perpendicular, related rectangle, right angle, parallelogram, rhombus, perpendicular, related parallelogram, acute triangle, obtuse triangle, vertex, dimensions |
| Lesson Frame:<br>Units of Area | I can express measurements using exponents.<br>I can use formulas to solve problems involving perimeter and area. |
| Lesson Frame:<br>Area of Any Right Triangle | I can derive formulas for the area of a right triangle.<br>I can use formulas to solve problems involving perimeter and area. |
| Lesson Frame:<br>Area of Any Parallelogram | I can derive formulas for the area of a parallelogram using a rectangle.<br>I can use formulas to solve problems involving perimeter and area. |
| Lesson Frame:<br>Area of Any Triangle | I can identify the height of any triangle.<br>I can recognize that the area of a triangle is always 1/2 the area of a parallelogram with the same height and base. |
| Lesson Frame:<br>Select the Needed Measurements | I can select or infer the dimensions needed to find the area and perimeter of triangles and parallelograms.<br>I can solve real-world problems. |
| **Performance Tasks:**<br>Unit 2: Quick Quiz 1, Daily Quick Practice Assessments | Notes: |
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| Topic 2: **Derive Area Formulas and Solve Problems: Trapezoids and Other Polygons** | **Length:** 6 days |
| **Standard(s):**<br>CC.6.G.1, CC.6.G.3, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.3, CC.6.EE.6 | **Academic Vocabulary:**<br>trapezoid, complex figures, pentagon, hexagon, octagon, polygon, regular polygon, ordered pair, regular polygon, coordinates |
| Lesson Frame:<br>Area of Trapezoid | I can derive the formula for the area of a trapezoid.<br>I can use formulas to solve problems involving perimeter and area. |

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| Lesson Frame:<br>Area of a Complex Figure | I can decompose complex figures into simpler figures.<br>I can solve problems involving perimeter and area. |
| Lesson Frame:<br>Area of Any Regular Polygon | I can decompose regular polygons into triangles.<br>I solve problems involving perimeter and area. |
| Lesson Frame:<br>Graph Polygons in the Coordinate Plane | I can draw polygons in the coordinate plane.<br>I can use coordinates to determine the side lengths of polygons. |
| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful contexts.<br>I can solve real world problems. |
| **Performance Tasks:**<br>Unit 2: Quick Quiz 2, Daily Quick Practice Assessments | Notes: |
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| Unit Name: **Operations with Whole Numbers, Fractions, and Decimals** | **Length**: 24 days |
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| **Standards:**<br>CC.6.NS.1, CC.6.NS.2, CC.6.NS.3, CC.6.NS.4 | **Outcomes:**<br>Unit 3 builds upon the concept of place value and its relationship to multiplication and division of whole numbers and decimals. |
| **Essential Questions:**<br>How can you use place value to help you solve a multidigit division problem?<br>How can estimating aid in solving division problems?<br>Is there a pattern when multiplying by 0.1 or 0.01? How can this pattern aid in multiplication and division problems?<br>What would you need to know to be able to compare fractions and decimals?<br>What is a common denominator and how can it aid in adding and subtracting fractions?<br>Are there predictable patterns that happen when you multiply or divide by fractions less than or greater than 1? How does this aid in solving multiplications and division problems involving fractions? | **Learning Targets:**<br>Students will be able to identify reciprocals.<br>Students will be able to divide fractions by whole numbers.<br>Students will be able to divide fractions by fractions.<br>Students will be able to divide fractions and mixed numbers.<br>Students will be able to solve world problems using the division of fractions.<br>Students will be able to add decimals.<br>Students will be able to subtract decimals.<br>Students will be able to multiply decimals.<br>Students will be able to divide decimals.<br>Students will be able to solve word problems containing decimal numbers. |
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| Topic 1: **Multiplication and Division of Whole Numbers and Decimals** | **Length:** 7 days |
| Standard(s):<br>CC.6.NS.2, CC.6.NS.3 | **Academic Vocabulary:**<br>dividend, divisor, quotient, remainder, ungrouping |
| Lesson Frame:<br>Place Value and Whole Number | I can explain the meaning of place value.<br>I can solve multi digit division with whole numbers |
| Lesson Frame:<br>Estimated Multipliers in Division | I can use appropriate strategies to estimate and adjust multipliers in division problems.<br>I can solve subtraction problems using regrouping strategies. |
| Lesson Frame:<br>Multiplying by a Decimal | I can observe patterns in multiplication by 0.1 and 0.01.<br>I can multiply by a decimal. |
| Lesson Frame:<br>Decimal Divisors | I can observe patterns in division by 0.1 and 0.01.<br>I can divide by a decimal. |
| Lesson Frame:<br>Multiplication or Division | I can can identify whether a situation requires multiplication or division.<br>I can place the decimal points in products and quotients. |
| **Performance Tasks:**<br>Unit 3: Quick Quiz 1, Daily Quick Practice Assessments | Notes: |
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| Topic 2: **Relating, Composing, and Decomposing Decimals and Fractions** | **Length:** 5 days |
| **Standard(s):**<br>CC.6.NS.3, CC.6.NS.4 | **Academic Vocabulary:**<br>numerator, denominator, equivalent fractions, simplifying, unsimplifying, common factor, and common denominator, least common multiple |
| Lesson Frame:<br>Comparing, Adding, and Subtracting with the Same Unit | I can compare fractions and decimals<br>I can add and subtract fractions, mixed numbers, and decimals. |

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| Lesson Frame:<br>Equivalent Fractions or Decimals | I can write equivalent fractions and decimals.<br>I can add, subtract, and compare fractions and decimals with different unit fractions or different numbers of decimal places. |
| Lesson Frame:<br>Finding a Common Unit Fraction | I can find common denominators when the denominators have no common factors and are not multiples. |
| Lesson Frame:<br>Mixed Problem Solving | I can discuss different strategies for finding a common denominator.<br>I can write equations to solve real world problems involving fractions and decimals. |
| **Performance Tasks:**<br>Unit 3: Quick Quiz 2, Daily Quick Practice Assessments | Notes: |
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| Topic 3: **Multiplying Fractions and Dividing with Fractions and Whole Numbers** | **Length:** 4 days |
| **Standard(s):**<br>CC.6.NS.1, CC.6.NS.3, CC.6.NS.4 | **Academic Vocabulary:**<br>reciprocal |
| Lesson Frame:<br>Multiplying with Fractions | I can multiply fractions and whole numbers.<br>I can multiply mixed numbers.<br>I can multiply fractions. |
| Lesson Frame:<br>Dividing with Fractions and Whole Numbers | I can divide fractions and whole numbers. |
| Lesson Frame:<br>Is It Multiplying or Dividing? | I can identify problems as multiplication or division situations. |
| **Performance Tasks:**<br>Unit 3: Quick Quiz 3, Daily Quick Practice Assessments | Notes: |
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| Topic 4: **Dividing a Fraction by a Fraction** | **Length:** 6 days |
| **Standard(s):**<br>CC.6.NS.1, CC.6.NS.3 | **Academic Vocabulary:**<br>inverse operations, unsimplify |
| Lesson Frame:<br>Dividing Numerators and Denominators | I can relate division to finding an unknown factor in a multiplication problem.<br>I can divide fractions by dividing numerators and dividing denominators. |
| Lesson Frame:<br>Dividing by Unsimplifying | I can understand the idea of dividing by unsimplifying.<br>I can connect dividing by unsimplifying to multiplying by the reciprocal. |
| Lesson Frame:<br>Dividing by Multiplying by the Reciprocal | I can divide fractions by multiplying by the reciprocal. |
| Lesson Frame:<br>Is it Multiplying or Dividing? | I can understand that numbers change in predictable ways when multiplied and divided by fractions less than 1 and fractions greater than 1. |
| Lesson Frame:<br>Mixed Practice with Decimals and Fractions | I can understand and apply decimal and fraction operations. |

| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful contexts. |
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| **Performance Tasks:**<br>Unit 3: Quick Quiz 4, Daily Quick Practice Assessments | Notes: |
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| Unit Name: **Surface Area of Prisms and Pyramids** | **Length:** 10 days |
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| **Standards:**<br>CC.6.G.1, CC.6.G.4, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.6 | **Outcomes:**<br>Hands-on activities help students explore the properties of prisms and pyramids. They use the area concepts they learned in Unit 2 to find the surface area of these figures. |
| **Essential Questions:**<br>What is a net and how can it be used to model a prism?<br>How can a net aid in finding the surface area of a prism?<br>How can the formula for finding the area of a triangle aid in finding the surface area of a pyramid? | **Learning Targets:**<br>Students will be able to use nets to model rectangular prisms.<br>Students will be able to use nets to model non rectangular prisms.<br>Students will be able to use nets to model pyramids.<br>Students will be able to find the surface area of prisms.<br>Students will be able to find the surface area of pyramids. |
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| Topic 1: **Nets and Surface Area of Prisms** | **Length:** 4 days |
| **Standard(s):**<br>CC.6.G.1, CC.6.G.4, CC.6.EE.2, CC.6.EE.2c | **Academic Vocabulary:**<br>face, lateral face, edge, vertex, base, congruent, prism, rectangular prism, net, surface area, cube |
| Lesson Frame:<br>Nets and Surface Area for Rectangular Prisms | I can use nets to model rectangular prisms. |
| Lesson Frame:<br>Nets and Surface Area for Non rectangular Prisms | I can use nets to model non rectangular prisms. |
| Lesson Frame:<br>Surface Area for Prisms | I can find the surface area of prisms. |
| **Performance Tasks:**<br>Unit 4: Quick Quiz 1, Daily Quick Practice Assessments | Notes: |
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| Topic 2: **Nets and Surface Area of Pyramids** | **Length:** 4 days |
| **Standard(s):**<br>CC.6.G.1, CC.6.G.4, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.6 | **Academic Vocabulary:**<br>pyramid, face, edge, vertex, base, slant height, congruent |
| Lesson Frame:<br>Nets for Pyramids | I can use nets to model pyramids. |
| Lesson Frame:<br>Surface Area of Pyramids | I can find the surface area of pyramids. |
| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful contexts. |
| **Performance Tasks:**<br>Unit 4: Quick Quiz 2, Daily Quick Practice Assessments | Notes: |

| Unit Name: **Expressions and Equations** | **Length:** 24 days |
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| **Standards:**<br>CC.6.EE.2, CC.6.EE.2b, CC.6.EE.2c, CC.6 EE.1, CC.6.EE.2a, CC.6.EE.4, CC.6.G.1, CC.6.G.4, CC.6.EE.3, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9, CC.6.EE.5, CC.6.EE.7, CC.6.EE.8 | **Outcomes:**<br>Students write and evaluate algebraic expressions and analyze their underlying structures. They also learn to use the properties of arithmetic to recognize and write equivalent expressions. Students learn to find solutions for equations and inequalities. |
| **Essential Questions:**<br>What are some ways that one can simplify a numerical expression that will involve exponents?<br>What are ways to read and write algebraic expressions? | **Learning Targets:**<br>Students will write and simplify numerical expressions involving exponents. Students will use graphs, tables, and equations to represent and analyze relationships between dependent and independent variables. Students will write and evaluate algebraic expressions, and use properties of operations to recognize and generate equivalent expressions. Students will solve problems by writing and solving equations of the form x + a + b and ax + b. Write inequalities of the form x < c or x > c to represent real world or mathematical situations, and graph the solutions on a number line. |
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| Topic 1: **Writing, Interpreting, and Analyzing Expressions** | **Length:** 6 days |
| **Standards:**<br>CC.6.EE.2, CC.6.EE.2b, CC.6.EE.2c, CC.6 EE.1, CC.6.EE.2a, CC.6.EE.4, CC.6.G.1, CC.6.G.4, CC.6.EE.3, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9, CC.6.EE.5, CC.6.EE.7, CC.6.EE.8 | **Academic Vocabulary:**<br>column, row, Factor Puzzle, factors, product |
| Lesson Frame:<br>Expressions and Order of Operations | I can use the order of operations to simplify numerical expression. |
| Lesson Frame:<br>Expressions with Exponents | I can use expressions with exponents to represent figures. |
| Lesson Frame:<br>Interpreting and Analyzing Expressions | I can translate algebraic expressions and words. |
| Lesson Frame:<br>Modeling and Simplifying Expressions | I can identify and write expressions for dot diagrams. |
| Lesson Frame:<br>Expressions for Area and Surface Area | I can write expressions for areas of complex figures. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 5-1 | Notes: |
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| Topic 2: **Equivalent Expressions** | **Length:** 6 days |
| **Standards:**<br>CC.6.EE.2, CC.6.EE.2b, CC.6.EE.2c, CC.6 EE.1, CC.6.EE.2a, CC.6.EE.4, CC.6.G.1, CC.6.G.4, CC.6.EE.3, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9, CC.6.EE.5, CC.6.EE.7, CC.6.EE.8 | **Academic Vocabulary:**<br>equivalent expressions, Associative Property of Addition, Commutative Property of Addition, coefficient, like terms, Associative Property of Multiplication, Commutative Property of Multiplication, simplify |
| Lesson Frame:<br>Equivalent Expressions | I can connect real world situations, models, and expressions. |

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| Lesson Frame:<br>The Commutative and Associative Properties | I can simplify expressions by combining like terms. |
| Lesson Frame:<br>Practice with Expressions | I can simplify and evaluate expressions. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 5-2 | Notes: |
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| Topic 3: **Representing and Describing Quantitative Relationships** | **Length:** 5 days |
| **Standards:**<br>CC.6.EE.2, CC.6.EE.2b, CC.6.EE.2c, CC.6 EE.1, CC.6.EE.2a, CC.6.EE.4, CC.6.G.1, CC.6.G.4, CC.6.EE.3, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9, CC.6.EE.5, CC.6.EE.7, CC.6.EE.8 | **Academic Vocabulary:**<br>double number line, dependent and independent variables |
| Lesson Frame:<br>Relating Two Quantities | I can recognize quantities that vary together. |
| Lesson Frame:<br>Motion at a Constant Speed | I can use different representations to find or estimate distances traveled in given amount of time. |
| Lesson Frame:<br>Relating Equations, Tables, and  Graphs | I can make a table and a graph based on an equation. |
| Lesson Frame:<br>Writing Equations | I can write and relate cost equations to situations. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 5-3 | Notes: |
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| Topic 4 : **Solving Equations and Equalities** | **Length:** 5 days |
| **Standards:**<br>CC.6.EE.2, CC.6.EE.2b, CC.6.EE.2c, CC.6 EE.1, CC.6.EE.2a, CC.6.EE.4, CC.6.G.1, CC.6.G.4, CC.6.EE.3, CC.6.NS.4, CC.6.EE.6, CC.6.EE.9, CC.6.EE.5, CC.6.EE.7, CC.6.EE.8 | **Academic Vocabulary:**<br>inequality, solution of an inequality,solution, solve, inverse operations, multiplicative inverse |
| Lesson Frame:<br>Solutions of Equations and Inequalities | I can solve equations by reasoning about which value of the variable will make the sides equal. |
| Lesson Frame:<br>Addition and Subtraction Equations | I can model and solve addition and subtraction equations. |
| Lesson Frame:<br>Multiplication and Division Equations | I can model and solve multiplication and division equations. |
| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful contexts. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 5-4, UNIT 5 TEST | Notes: |

| Unit Name: **Volume of a Rectangular Prism** | **Length:** 8 days |
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| **Standards:**<br>CC.6.G.1, CC.6.G.2, CC.6.G 4, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.6 | **Outcomes:**<br>Students bring their prior knowledge to this unit as they explore volume for prisms that have fractional edge lengths. |
| **Essential Questions:**<br>How can students find the volume of specific prisms using appropriate formulas?<br>How can students solve real world problems that involve volume by using their prior knowledge? | **Learning Targets:**<br>Students will find the volume of a right triangular prism with fractional lengths by packing it with unit cubes of the appropriate unit fraction edge lengths.   Students will solve real world and mathematical problems involving volume. Students will show that counting unit cubes is the same as multiplying the edge lengths of the prism. Students will apply the formulas V=lwh and V=Bh to find volumes of right rectangular prisms with fractional edge lengths. |
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| Topic 1: **Volume Formulas for Rectangular Prisms** | **Length:** 8 days |
| **Standards:**<br>CC.6.G.1, CC.6.G.2, CC.6.G 4, CC.6.EE.2, CC.6.EE.2c, CC.6.EE.6 | **Academic Vocabulary:**<br>volume, unit cube, centimeter cube, inch cube, cubic unit, cubic centimeters, cubic inch |
| Lesson Frame:<br>What is Volume? | I can express volume using an exponent. |
| Lesson Frame:<br>Fractional Unit Cubes | I can find the volume of prisms with fractional edge lengths by packing them with cubes of appropriate unit fraction edge lengths. |
| Lesson Frame:<br>Compose Rectangular Prisms with Fractional Edge Lengths | I can compose a rectangular prism with fractional edge lengths by layers. |
| Lesson Frame:<br>Volume of Prisms with Fractional Edge Lengths | I can solve real world problems involving volume. |
| Lesson Frame:<br>Write and Solve Equations about Volume | I can understand how the variables of the volume formula are related. |
| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful contexts. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 6-1, UNIT 6 TEST | Notes: |

| Unit Name:  **Ratios and Rates with Fractions, Decimals, and Percents** | **Length:** 20 days |
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| **Standards:**<br>CC.6.RP.1, CC.6.RP.2,, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.EE.6, CC.6.EE.7, CC. 6.RP.3c, CC.RP.3d, CC.6.EE.9, CC.6.G.1, CC.6.G.4 | **Outcomes:**<br>Unit 7 builds upon the concepts of rates, ratios, and proportions introduced in Unit 1. The concept of unit rate is extended to all ratios, and unit rates are used to solve proportions, including those with non whole-number solutions. |
| **Essential Questions:**<br>How can one solve proportions with non-whole number solutions?<br>How can one use ratio reasoning to convert measurement units? | **Learning Targets:**<br>Students will solve proportions with non-whole number solutions. Students will represent ratios in fraction form. Students will solve proportions involving both part-to-part and part-to-whole ratios.  Students will find a percent of a quantity as a rate per 100 and solve problems involving finding the whole given a part and the percent. Students will use equations to represent proportional relationships. Students will use ratio reasoning to convert measurement units. |
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| Topic 1: **Ratios, Fractions, Unit Rates, and Cross-Multiplying** | **Length:** 5 days |
| **Standards:**<br>CC.6.RP.1, CC.6.RP.2,, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.EE.6, CC.6.EE.7, CC. 6.RP.3c, CC.RP.3d, CC.6.EE.9, CC.6.G.1, CC.6.G.4 | **Academic Vocabulary:**<br>compare ratios, unit rate strategy, cross multiplication |
| Lesson Frame:<br>Comparing Ratios | I can use tables of equivalent ratios to compare ratios. |
| Lesson Frame:<br>Unit Rates | I can use unit rates to describe  and compare ratios. |
| Lesson Frame:<br>Ratios, Fractions, and Fraction Notation | I can write ratios in fractional notation. |
| Lesson Frame:<br>Understanding Cross-Multiplication | I can understand why the cross-multiplication method works. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 7-1 | Notes: |
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| Topic 2: **Ratios with Tape Diagrams and Equations** | **Length:** 4 days |
| Standards:<br>CC.6.RP.1, CC.6.RP.2,, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.EE.6, CC.6.EE.7, CC. 6.RP.3c, CC.RP.3d, CC.6.EE.9, CC.6.G.1, CC.6.G.4 | **Academic Vocabulary:**<br>tape diagram, multiplicative comparison |
| Lesson Frame:<br>Describing Ratios with Tape Diagrams | I can use tape diagrams to solve proportions. |
| Lesson Frame:<br>Ratios and Multiplicative Comparisons | I can describe ratios using equations. |

| Lesson Frame:<br>Solve Ratio and Rate Problems | I can recognize problems that are not proportion problems. |
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| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 7-2 | Notes: |
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| Topic 3: **Percent** | **Length:** 5 days |
| **Standards:**<br>CC.6.RP.1, CC.6.RP.2,, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.EE.6, CC.6.EE.7, CC. 6.RP.3c, CC.RP.3d, CC.6.EE.9, CC.6.G.1, CC.6.G.4 | **Academic Vocabulary:**<br>percent |
| Lesson Frame:<br>The Meaning of Percent | I can understand the meaning of percent. |
| Lesson Frame:<br>Percent of a Number | I can learn methods for calculating a percent of a number. |
| Lesson Frame:<br>Percent Calculations | I can find the percent of a number. |
| Lesson Frame:<br>Solve Percent Problems | I can calculate the percent one number is of another. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 7-3 | Notes: |
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| Topic 4 **Relate Different Measurement Units** | **Length:** 4 days |
| **Standards:**<br>CC.6.RP.1, CC.6.RP.2, CC.6.RP.3, CC.6.RP.3a, CC.6.RP.3b, CC.6.EE.6, CC.6.EE.7, CC. 6.RP.3c, CC.RP.3d, CC.6.EE.9, CC.6.G.1, CC.6.G.4 | **Academic Vocabulary:**<br>liquid volume, bar graph, circle graph |
| Lesson Frame:<br>Convert Units of Length | I can convert units of length in order to calculate area. |
| Lesson Frame:<br>Convert Units of Liquid Volume, Mass, and Weight | I can convert units of liquid volume, mass, and weight within the same measurement system. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 7-4, UNIT 7 TEST | Notes: |
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| Unit Name: **Analyzing Statistics** | **Length:** 19 days |
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| **Standards:** CC.6.SP.1, CC.6.SP.4, CC.6.SP.5, CC.6.SP.5a, CC.6.SP.2, CC.6.SP.3, CC.6.SP.5c, CC.6.SP.5d, CC.6.SP.5b | **Outcomes:** Students begin to think statistically as they make sense of data. They explore measures of center and variability as ways to describe data. |
| **Essential Questions:** How can one find the mean and median of data displayed in histograms, and make inferences about the displays? How can one interpret box plots and use examples/counterexamples to prove/disprove statements about those plots? How can students add values to dot plots to change the mean, median, or range of the data by a given amount? | **Learning Targets:** Students will understand that a set of data can be described by its center, spread, and overall shape. Students will recognize that a measure of center, such as mean and median, summarizes a set of data values with a single number. Students will recognize that a measure of variation, such as range, interquartile range, and mean absolute deviation, summarizes a set of data values with a single number. Students will display numerical data on dot plots, histograms, and box plots. Students will describe the nature of the attribute under investigation, including how it was measured and its units of measurement. Students will relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. Students will display and interpret real world data. |
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| Topic 1: **Displaying Data** | **Length:** 3 days |
| **Standard(s):** CC.6.SP.1, CC.6.SP.4, CC.6.SP.5, CC.6.SP.5a | **Academic Vocabulary:** numerical data, dot plot, histogram, interval |
| Lesson Frame: Making Sense of Data | I can display, interpret, and summarize numerical data. |
| Lesson Frame: Dot Plots and Histograms | I can interpret and construct a dot plot and a histogram. |
| **Performance Tasks:** Daily Quick Practice Assessment, Quick Quiz 8-1 | Notes: |
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| Topic 2 : **Summarizing Data: The Mean and the Median** | **Length:**  5 days |
| **Standards:** CC.6.SP.1, CC.6.SP.4, CC.6.SP.5, CC.6.SP.5a, CC.6.SP.2, CC.6.SP.3, CC.6.SP.5c, CC.6.SP.5d, CC.6.SP.5b | **Academic Vocabulary:** leveling out, fair share, mean, median, symmetric |
| Lesson Frame: Making Data Groups Equal | I can calculate the mean. |
| Lesson Frame: Use the Mean | I can use the mean to summarize and compare data in context. |
| Lesson Frame: The Mean as a Balance Point | I can understand that the mean is a balance point of a dot plot. |
| Lesson Frame: Find and Use the Median | I can find the median of a numerical set of data. |

| Performance Tasks: | Notes: |
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| Daily Quick Practice Assessment, Quick Quiz 8-2 | |
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| Topic 3: **Describing Variability in Data** | **Length:** 9 days |
| **Standards:**<br>CC.6.SP.1, CC.6.SP.4, CC.6.SP.5, CC.6.SP.5a, CC.6.SP.2, CC.6.SP.3, CC.6.SP.5c, CC.6.SP.5d, CC.6.SP.5b | **Academic Vocabulary:**<br>range, quartiles, first quartile, third quartile, box plot, interquartile range, mean absolute deviation, cluster, peak, gap, outlier |
| Lesson Frame:<br>Variability in Data | I can calculate the range of a set of numerical data. |
| Lesson Frame:<br>Box Plots | I can draw and interpret a box plot for a set of numerical data. |
| Lesson Frame:<br>Mean Absolute Deviation | I can compare and interpret mean absolute deviations. |
| Lesson Frame:<br>Clusters, Peaks, Gaps, and Outliers | I can choose an appropriate measure to describe a set of data. |
| Lesson Frame:<br>Collect, Display, and Interpret Data | I can collect and analyze data. |
| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful ways. |
| Performance Tasks:<br>Daily Quick Practice Assessment, Quick Quiz 8-3, UNIT 8 Assessment | Notes: |
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| Unit Name: **Rational Numbers and the Coordinate Plane** | **Length:** 15 days |
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| **Standards:**<br>CC.6.NS.5, CC.6.NS.6, CC.6.NS.6a, CC.6.NS.6b, CC.6.NS.6c, CC.6.NS.7, CC.6.NS.7a, CC.6.NS.7.b, CC.6.NS.7c, CC.6.NS.7d, CC.6.NS.8 | **Outcomes:**<br>This unit extends our base-ten number system to include positive and negative rational numbers, using both number lines and the coordinate plane. |
| **Essential Questions:**<br>How can students understand positive and negative numbers related to a number line?<br>How can students understand opposite numbers on a number line?<br>How can students write, interpret, and explain rational numbers and integers in real world situations? | **Learning Targets:**<br>Students will understand that positive and negative numbers can describe quantities having opposite directions on a number line or opposite values. Students will locate and plot points that represent integers and other rational numbers on the number line and in all four quadrants of the coordinate plane. Students will write, interpret, and explain statements that compare integers and other rational numbers. Students will recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.  Students will understand absolute value of a number and use this idea to compare numbers and to find distance in the coordinate plane. Students will solve real world and mathematical problems involving integers and rational numbers. |
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| Topic 1: Discuss, Compare and Graph Integers | **Length:** 6 days |
| **Standards:**<br>CC.6.NS.5, CC.6.NS.6, CC.6.NS.6a, CC.6.NS.6b, CC.6.NS.6c, CC.6.NS.7, CC.6.NS.7a, CC.6.NS.7.b, CC.6.NS.7c, CC.6.NS.7d, CC.6.NS.8 | **Academic Vocabulary:**<br>opposites, positive numbers, negative numbers, origin, integers, absolute value |
| Lesson Frame:<br>Negative Numbers in the Real World | I can identify positive and negative numbers in real world situations. |
| Lesson Frame:<br>Integers on a Number Line | I can locate and plot integers on a horizontal or vertical number line. |
| Lesson Frame:<br>Compare and Order Integers | I can compare and order integers using number lines and in real world situations. |
| Lesson Frame:<br>Integers and the Coordinate Plane | I can locate and plot integers in all four quadrants of the coordinate plane. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 9-1 | Notes: |
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| Topic 2: **Discuss, Compare, and Graph Rational Numbers** | **Length:** 6 days |
| **Standards:**<br>CC.6.NS.5, CC.6.NS.6, CC.6.NS.6a, CC.6.NS.6b, CC.6.NS.6c, CC.6.NS.7, CC.6.NS.7a, CC.6.NS.7.b, CC.6.NS.7c, CC.6.NS.7d, CC.6.NS.8 | **Academic Vocabulary:**<br>rational number, reflected point |
| Lesson Frame:<br>Rational Numbers on a Number Line | I can identify rational number opposites. |
| Lesson Frame:<br>Compare and Order Rational Numbers | I can compare and order numbers using a number line. |

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| Lesson Frame:<br>Rational Numbers and the Coordinate Plane | I can identify the effect on coordinates for reflections in the coordinate plane. |
| Lesson Frame:<br>Focus on Mathematical Practices | I can apply mathematical concepts and skills in meaningful contexts. |
| **Performance Tasks:**<br>Daily Quick Practice Assessment, Quick Quiz 9-2, UNIT 9 Assessment | Notes: |
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