

Walter T. Bergen Middle School  
6<sup>th</sup> Grade Mathematics  
School Year 2007-2008

Unit 1/ chapters 1 & 2	September-October	October-November
Essential Questions	How are students using problem solving skills with whole number operations to solve algebraic equations?	How do students use the properties of math to represent and interpret real-life data?
Content	<ul style="list-style-type: none"> <li>• Problem solving</li> <li>• Divisibility Patterns</li> <li>• Prime Factors</li> <li>• Powers and Exponents</li> <li>• Order of Operations</li> <li>• Variables and Expressions</li> <li>• Algebra: Solving Equations</li> <li>• Area of Rectangles</li> </ul>	<ul style="list-style-type: none"> <li>• Frequency tables</li> <li>• Bar graphs and line graphs</li> <li>• Circle graphs</li> <li>• Making predictions</li> <li>• Stem-and-leaf plot</li> <li>• Mean</li> <li>• Median, mode, and range</li> <li>• Analyzing graphs</li> </ul>
Skills	<ul style="list-style-type: none"> <li>❖ Solve problems using the four-step plan</li> <li>❖ Use divisibility rules for 2,3,4,5,6,9,and 10</li> <li>❖ Find prime factorization of a composite number</li> <li>❖ Use powers and exponents in expressions</li> <li>❖ Evaluate expressions using order of operation</li> <li>❖ Evaluate algebraic expressions</li> <li>❖ Solve problems using the guess and check strategy</li> <li>❖ Solve equations by using mental math and the guess and check strategy</li> <li>❖ Find the areas of rectangles</li> </ul>	<ul style="list-style-type: none"> <li>❖ Make and interpret frequency tables</li> <li>❖ Solve problems by using a graph</li> <li>❖ Make and interpret bar and line graphs</li> <li>❖ Interpret circle graphs</li> <li>❖ Make predictions from line graphs</li> <li>❖ Construct and interpret stem-and-leaf plots</li> <li>❖ Find a mean of a set of data</li> <li>❖ Find the median, mode and range of a set of data</li> <li>❖ Recognize when statistics and graphs are misleading</li> </ul>
Standards	4.1., 4.2., 4.3., 4.5.	4.3, 4.4, 4.5,
Assessments	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games

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Unit 2/ chapters 3, 4 & 5	November –December	December
Essential Questions	In what ways can students use decimals to describe many real-life situations?	How can the students use of fractions be applied to problem solving situations?
Content	<ul style="list-style-type: none"> <li>• Representing decimals</li> <li>• Comparing and ordering decimals</li> <li>• Rounding decimals</li> <li>• Estimating sums and differences</li> <li>• Adding and subtracting decimals</li> <li>• Multiplying decimals by whole numbers and decimals</li> <li>• Dividing decimals by whole numbers and decimals</li> <li>• Geometry: Perimeter</li> <li>• Geometry : Circumference</li> </ul>	<ul style="list-style-type: none"> <li>• Greatest Common Factor</li> <li>• Simplifying Fractions</li> <li>• Mixed numbers and improper fractions</li> <li>• Least common multiple</li> <li>• Comparing and ordering fractions</li> <li>• Writing decimals as fractions</li> <li>• Writing fractions as decimals</li> </ul>
Skills	<ul style="list-style-type: none"> <li>❖ Compare and order decimals</li> <li>❖ Round decimals</li> <li>❖ Estimate sums and differences</li> <li>❖ Add and subtract decimals</li> <li>❖ Multiply decimals by whole numbers and decimals</li> <li>❖ Divide decimals by whole numbers and decimals</li> <li>❖ Find perimeter of rectangles and squares</li> <li>❖ Find the circumference of a circle</li> </ul>	<ul style="list-style-type: none"> <li>❖ Find the GCF of two or more numbers</li> <li>❖ Express fractions in simplest form</li> <li>❖ Write mixed numbers as improper fractions and vice versa</li> <li>❖ Find the LCM of two or more numbers</li> <li>❖ Compare and order fractions</li> <li>❖ Write decimals as fractions or mixed numbers in simplest form</li> <li>❖ Write fractions as terminating or repeating decimals</li> </ul>
Standards	4.1, 4.2, 4.3, 4.5	4.1, 4.5
Assessments	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games

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Unit 3/ chapters 5, 6, & 7	January	February Unit 4 Chapters 8 & 9
Essential Questions	In what ways can students apply the number sense they developed to solve problems involving fractions?	How can students use algebraic thinking to solve real word problems?
Content	<ul style="list-style-type: none"> <li>• Rounding fractions and mixed numbers</li> <li>• Estimating sums and differences</li> <li>• Adding and subtracting fractions with like denominators</li> <li>• Adding and subtracting fractions with unlike denominators</li> <li>• Adding and subtracting mixed numbers</li> <li>• Subtracting mixed numbers with renaming</li> <li>• Multiplying fractions</li> <li>• Multiplying mixed numbers</li> <li>• Dividing fractions</li> <li>• Dividing mixed numbers</li> <li>• Patterns and functions: Sequences</li> </ul>	<ul style="list-style-type: none"> <li>• Integers</li> <li>• Adding integers</li> <li>• Subtracting integers</li> <li>• Multiplying integers</li> <li>• Dividing integers</li> <li>• Geometry: the coordinate plane</li> <li>• Properties</li> <li>• Solving addition equations</li> <li>• Solving subtraction equations</li> <li>• Solving multiplication equations</li> <li>• Solving two step equations</li> <li>• Functions</li> <li>• Graphing functions</li> </ul>
Skills	<ul style="list-style-type: none"> <li>❖ Round fractions to 0, <math>\frac{1}{2}</math>, and 1</li> <li>❖ Add and subtract fractions with like and unlike denominators</li> <li>❖ Add and subtract mixed numbers</li> <li>❖ Subtracting mixed numbers involving renaming</li> <li>❖ Estimating products using compatible numbers and rounding</li> <li>❖ Multiply fractions and mixed numbers</li> <li>❖ Divide fractions and mixed numbers</li> <li>❖ Solve problems by looking for a pattern</li> <li>❖ Recognize and extend sequences</li> </ul>	<ul style="list-style-type: none"> <li>❖ Identify, graph, compare, and order integers</li> <li>❖ Add and subtract integers</li> <li>❖ Multiply and divide integers</li> <li>❖ Solve problems by working backwards</li> <li>❖ Graph ordered pairs of numbers on a coordinate plane</li> <li>❖ Use commutative, associative, identity and distributive properties</li> <li>❖ Solve addition and subtraction equations</li> <li>❖ Solve multiplication and two step equations</li> <li>❖ Solve inequalities</li> <li>❖ Solve problems by writing an equation</li> <li>❖ Complete function tables and find function rules</li> <li>❖ Graph functions from tables</li> </ul>
Standards	4.1, 4.5	4.1, 4.3, 4.5
Assessments	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games

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Unit 5/chapters 10 & 11	March	April
Essential Questions	In what ways can students apply proportions and percents to problem solving?	How do students apply their knowledge of finding outcomes and probability and transfer it to their everyday life?
Content	<ul style="list-style-type: none"> <li>• Ratios</li> <li>• Algebra: solving proportions</li> <li>• Geometry: scale drawings and models</li> <li>• Modeling percents</li> <li>• Percents and fractions</li> <li>• Percents and decimals</li> <li>• Percent of a number</li> <li>• Estimating with percents</li> </ul>	<ul style="list-style-type: none"> <li>• Theoretical probability</li> <li>• Outcomes</li> <li>• Statistics: making predictions</li> <li>• Geometry: probability and area</li> <li>• Probability of independent events</li> </ul>
Skills	<ul style="list-style-type: none"> <li>❖ Express ratios and rates in fraction format</li> <li>❖ Solve proportion by using cross products</li> <li>❖ Use scale drawings and models to find actual measurements</li> <li>❖ Use models to illustrate the meaning of percent</li> <li>❖ Express percents as fractions and vice versa</li> <li>❖ Express percents as decimals and vice versa</li> <li>❖ Find the percent of a number</li> <li>❖ Estimate the percent of a number</li> <li>❖ Solve problems by solving a simpler problem</li> </ul>	<ul style="list-style-type: none"> <li>❖ Exploring experimental probability by conducting simulation</li> <li>❖ Find and interpret the theoretical probability of an event</li> <li>❖ Find outcomes by using lists, tree diagrams, and combinations</li> <li>❖ Determine whether a group is biased</li> <li>❖ Predict the actions of a larger group by using a sample</li> <li>❖ Find probability by using area models</li> <li>❖ Solve problems by making a table</li> <li>❖ Find the probability of independent events</li> </ul>
Standards	4.1,4.3,4.4, 4.5	4.3,4.4
Assessments	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games

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Unit 6/ chapters 12, 13, 14	May	June
Essential Questions	In what ways will students use their knowledge of finding measurements and apply it to real life problem solving?	How will students use their accumulated skills needed to measure geometric figures and apply them to real-life problem solving?
Content	<ul style="list-style-type: none"> <li>• Length in the customary system</li> <li>• Capacity and weight in the customary system</li> <li>• Length in the metric system</li> <li>• Mass and capacity in the metric system</li> <li>• Changing metric units</li> <li>• Measures of time</li> <li>• Angles</li> <li>• Using angle measures</li> <li>• Bisectors</li> <li>• Two-dimensional figures</li> <li>• Lines of symmetry</li> <li>• Similar and congruent figures</li> </ul>	<ul style="list-style-type: none"> <li>• Area of parallelograms</li> <li>• Area of triangles</li> <li>• Area of circles</li> <li>• Three-dimensional figures</li> <li>• Volume of rectangular prisms</li> <li>• Surface area of rectangular prisms</li> </ul>
Skills	<ul style="list-style-type: none"> <li>❖ Measure length and change units of length in the customary system</li> <li>❖ Change units of capacity and weight in the customary system</li> <li>❖ Use metric units of length</li> <li>❖ Use metric units of mass and capacity</li> <li>❖ Change units within the metric system</li> <li>❖ Add and subtract measures of time</li> <li>❖ Classify and measure angles</li> <li>❖ Draw angles and estimate measures of angles</li> <li>❖ Construct congruent segments and angles</li> <li>❖ Bisect line segments and angles</li> <li>❖ Solve problems by drawing a diagram</li> <li>❖ Describe and define lines of symmetry</li> <li>❖ Investigate transformations</li> <li>❖ Determine congruence and similarity</li> <li>❖ Create tessellations using pattern blocks</li> </ul>	<ul style="list-style-type: none"> <li>❖ Find the area of parallelograms</li> <li>❖ Find the area of a triangle using the properties of parallelograms</li> <li>❖ Find the areas of triangles</li> <li>❖ Find the areas of circles</li> <li>❖ Identify three-dimensional figures</li> <li>❖ Find the volume of rectangular prisms</li> <li>❖ Build a three-dimensional figure from a net and vice versa</li> <li>❖ Solve problems by making a model</li> <li>❖ Find the surface area of rectangular prisms</li> </ul>
Standards	4.1, 4.2, 4.3, 4.4, 4.5	4.1, 4.2, 4.3, 4.4, 4.5
Assessments	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games	Daily homework, mid-chapter assessments, quiz and chapter tests, projects and math games