

**6th Grade Math Curriculum Guide  
Lunenburg County Public Schools  
June 2014**

**Marking Period: First Nine Weeks**

**Days: 5 (1week)**

**Reporting Category/Strand: PATTERNS, FUNCTIONS, AND ALGEBRA**

<p><b>SOL 6.19</b></p> <p><b>*6.19 and 6.17 are taught at the same time.</b></p>	<p><b>The student will investigate and recognize</b></p> <p><b>a) the identity properties for addition and multiplication;</b></p> <p><b>b) the multiplicative property of zero; and</b></p> <p><b>c) the inverse property for multiplication</b></p>
<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• How are the identity properties for multiplication and addition the same? Different? For each operation the identity elements are numbers that combine with other numbers without changing the value of the other numbers. The additive identity is zero (0). The multiplicative identity is one (1).</li> <li>• What is the result of multiplying any real number by zero? The product is always zero.</li> <li>• Do all real numbers have a multiplicative inverse? No. Zero has no multiplicative inverse because there is no real number that can be multiplied by zero resulting in a product of one.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Identify a real number equation that represents each property of operations with real numbers, when given several real number equations.</li> <li>• Test the validity of properties by using examples of the properties of operations on real numbers.</li> <li>• Identify the property of operations with real numbers that is illustrated by a real number equation.</li> </ul> <p><b>NOTE:</b> The commutative, associative and distributive properties are taught in previous grades.</p>
<p><b>Essential Questions</b></p>	<p>How are the identity properties for multiplication and addition the same? Different?</p> <p>What is the result of multiplying any real number by zero?</p> <p>Do all real numbers have a multiplicative inverse?</p>
<p><b>Primary Resources</b></p> <p>*All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i></p> <p>Teacher-made notes from the Curriculum Framework*</p> <p>Worksheets*</p> <p><a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a></p> <p><a href="#">Glencoe</a></p> <p><a href="#">Addition and Multiplication Properties Interactive Quiz</a></p> <p><a href="#">Multiplication Properties</a></p>

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	<a href="#">Math Play</a>
<b>Essential Vocabulary</b>	<p><b>Multiplicative Identity Property</b> - the product of any number and 1 is the number</p> <p><b>Multiplicative Property of Zero</b> - the product of any number and zero is zero</p> <p><b>Additive Identity Property</b> - The sum of any number and 0 is the number</p> <p><b>Commutative Property</b> - order does not matter. Addition and multiplication are commutative.</p> <p><b>Inverse Property of Multiplication</b> - every non-zero number “a” when multiplied by “1/a” gives one as the answer</p>

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**Reporting Category/Strand: PATTERNS, FUNCTIONS, AND ALGEBRA**

<p><b>SOL 6.17</b></p> <p><b>*6.19 and 6.17 are taught at the same time.</b></p>	<p><b>The student will identify and extend geometric and arithmetic sequences.</b></p>
<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• What is the difference between an arithmetic and a geometric sequence? While both are numerical patterns, arithmetic sequences are additive and geometric sequences are multiplicative.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Investigate and apply strategies to recognize and describe the change between terms in arithmetic patterns.</li> <li>• Investigate and apply strategies to recognize and describe geometric patterns.</li> <li>• Describe verbally and in writing the relationships between consecutive terms in an arithmetic or geometric sequence.</li> <li>• Extend and apply arithmetic and geometric sequences to similar situations.</li> <li>• Extend arithmetic and geometric sequences in a table by using a given rule or mathematical relationship.</li> <li>• Compare and contrast arithmetic and geometric sequences.</li> <li>• Identify the common difference for a given arithmetic sequence.</li> <li>• Identify the common ratio for a given geometric sequence</li> </ul>
<p><b>Essential Questions</b></p>	<p>What is the difference between an arithmetic and a geometric sequence?</p>
<p><b>Primary Resources</b></p> <p>*All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i></p> <p>Teacher-made notes from the Curriculum Framework*</p> <p>Worksheets*</p> <p><a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a></p>

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	<a href="#">Glencoe</a> <a href="#">Think and Learn: Patterns</a> <a href="#">Spooky Sequences</a>
<b>Essential Vocabulary</b>	<p><b>Arithmetic sequence</b> - goes from one term to the next by always adding (or subtracting) the same value.</p> <p><b>Geometric sequence</b> - goes from one term to the next by always multiplying (or dividing) by the same value</p> <p><b>Common difference</b> - the number added (or subtracted) at each stage of an arithmetic sequence</p> <p><b>Common ratio</b> - the number multiplied (or divided) at each stage of a geometric sequence</p>

**Marking Period: First Nine Weeks**

**Days: 10 (2 weeks)**

**Reporting Category/Strand: NUMBER AND NUMBER SENSE**

<b>SOL 6.3</b>	<p>The student will</p> <ul style="list-style-type: none"> <li>a) identify and represent integers;</li> <li>b) order and compare integers; and</li> <li>c) identify and describe absolute value of integers.</li> </ul>
<b>Essential Knowledge/Skills/Understandings</b>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• What role do negative integers play in practical situations? Some examples of the use of negative integers are found in temperature (below 0), finance (owing money), below sea level. There are many other examples.</li> <li>• How does the absolute value of an integer compare to the absolute value of its opposite? They are the same because an integer and its opposite are the same distance from zero on a number line.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Identify an integer represented by a point on a number line.</li> <li>• Represent integers on a number line.</li> <li>• Order and compare integers using a number line.</li> <li>• Compare integers, using mathematical symbols (&lt;, &gt;, =).</li> <li>• Identify and describe the absolute value of an integer.</li> </ul>

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<b>Essential Questions</b>	What role do negative integers play in practical situations? How does the absolute value of an integer compare to the absolute value of its opposite?
<b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.	<i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Number Balls Game</a> <a href="#">Negative Numbers Play</a> <a href="#">Absolute Value Game</a>
<b>Essential Vocabulary</b>	<b>Natural numbers</b> - counting numbers <b>Whole numbers</b> - counting numbers and zero <b>Integers</b> - natural numbers and their opposites - counting numbers and their opposites <b>Absolute value</b> - distance a number is from zero on a number line

**Marking Period: First Nine Weeks**

**Days: 5 (1 week)**

**Reporting Category/Strand: GEOMETRY**

<b>SOL 6.11</b>	<b>The student will</b> <b>a) identify the coordinates of a point in a coordinate plane; and</b> <b>b) graph ordered pairs in a coordinate plane.</b>
<b>Essential Knowledge/Skills/Understandings</b>	<b>ESSENTIAL UNDERSTANDINGS</b> <ul style="list-style-type: none"> <li>• Can any given point be represented by more than one ordered pair? The coordinates of a point define its unique location in a coordinate plane. Any given point is defined by only one ordered pair.</li> <li>• In naming a point in the plane, does the order of the two coordinates matter? Yes. The first coordinate tells the location of the point to the left or right of the y-axis and the second point tells the location of the point above or below the x-axis. Point (0, 0) is at the origin.</li> </ul> <b>ESSENTIAL KNOWLEDGE AND SKILLS</b> <ul style="list-style-type: none"> <li>• Identify and label the axes of a coordinate plane.</li> <li>• Identify and label the quadrants of a coordinate plane.</li> <li>• Identify the quadrant or the axis on which a point is positioned by examining the coordinates (ordered pair) of the point.</li> <li>• Graph ordered pairs in the four quadrants and on the axes of a coordinate plane.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Identify ordered pairs represented by points in the four quadrants and on the axes of the coordinate plane.</li> <li>• Relate the coordinate of a point to the distance from each axis and relate the coordinates of a single point to another point on the same horizontal or vertical line.</li> </ul>
<b>Essential Questions</b>	<p>Can any given point be represented by more than one ordered pair? In naming a point in the plane, does the order of the two coordinates matter?</p>
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Space Boy Game</a> <a href="#">Graphing Ordered Pairs</a> <a href="#">Quadrant Identification</a> <a href="#">Graphing on a Plane</a> <a href="#">Video</a></p>
<b>Essential Vocabulary</b>	<p><b>Coordinate plane</b> - is a two-dimensional surface on which we can plot points, lines and curves <b>Ordered pair</b> - is a pair of numbers used to locate a point on a coordinate plane; the first number tells how far to move horizontally and the second number tells how far to move vertically. <b>Axis</b> - The x-axis and y-axis are two intersecting number lines on a coordinate plane</p>

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**Marking Period: First Nine Weeks**

**Days: 12.5 (2.5 weeks)**

**Reporting Category/Strand: NUMBER AND NUMBER SENSE**

<b>SOL 6.5</b>	<b>The student will investigate and describe concepts of positive exponents and perfect squares.</b>
<b>Essential Knowledge/Skills/Understandings</b>	<b>ESSENTIAL UNDERSTANDINGS</b> <ul style="list-style-type: none"><li>• What does exponential form represent? Exponential form is a short way to write repeated multiplication of a common factor such as <math>5 \times 5 \times 5 \times 5 = 5^4</math>.</li><li>• What is the relationship between perfect squares and a geometric square? A perfect square is the area of a geometric square whose side length is a whole number.</li></ul> <b>ESSENTIAL KNOWLEDGE AND SKILLS</b> <ul style="list-style-type: none"><li>• Recognize and describe patterns with exponents that are natural numbers, by using a calculator.</li><li>• Recognize and describe patterns of perfect squares not to exceed <math>20^2</math>, by using grid paper, square tiles, tables, and calculators.</li></ul>

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	<ul style="list-style-type: none"> <li>Recognize powers of ten by examining patterns in a place value chart: <math>10^4 = 10,000</math>, <math>10^3 = 1000</math>, <math>10^2 = 100</math>, <math>10^1 = 10</math>, <math>10^0 = 1</math>.</li> </ul>
<b>Essential Questions</b>	<p>What does exponential form represent? What is the relationship between perfect squares and a geometric square?</p>
<b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i>            Teacher-made notes from the Curriculum Framework*            Worksheets*  <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a>  <a href="#">Glencoe</a>  <a href="#">Otter Rush Game</a>  <a href="#">Greater Than Less Than Game</a>  <a href="#">Baseball Exponents</a></p>
<b>Essential Vocabulary</b>	<p><b>Exponents</b> - a quantity representing the power to which a given number or expression is to be raised, usually expressed as a raised symbol beside the number or expression  <b>Perfect squares</b> - is a number that is the result of a number multiplied by itself</p>

**Marking Period: First Nine Weeks**

**Days: 12.5 (2.5 weeks)**

**Reporting Category/Strand: NUMBER AND NUMBER SENSE**

<b>SOL 6.1</b>	<p>The student will describe and compare data, using ratios, and will use appropriate notations, such as <math>a/b</math>, <math>a</math> to <math>b</math>, and <math>a:b</math>.</p>
<b>Essential Knowledge/Skills/Understandings</b>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>What is a ratio? A ratio is a comparison of any two quantities. A ratio is used to represent relationships within a set and between two sets. A ratio can be written using fraction form (<math>\frac{a}{b}</math>), a colon (<math>2:3</math>), or the word to (<math>2</math> to <math>3</math>).</li> </ul>



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	<p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Describe a relationship within a set by comparing part of the set to the entire set.</li> <li>• Describe a relationship between two sets by comparing part of one set to a corresponding part of the other set.</li> <li>• Describe a relationship between two sets by comparing all of one set to all of the other set.</li> <li>• Describe a relationship within a set by comparing one part of the set to another part of the same set.</li> <li>• Represent a relationship in words that makes a comparison by using the notations a/b, a:b, and a to b.</li> <li>• Create a relationship in words for a given ratio expressed symbolically.</li> </ul>
<p><b>Essential Questions</b></p>	<p>What is a ratio?</p>
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Ratio Game</a>, <a href="#">Ratio Blasters</a> <a href="#">Ratio Video</a> <a href="#">Ratio Video 2</a></p>
<p><b>Essential Vocabulary</b></p>	<p><b>Ratio</b> - a comparison of any two quantities</p>

**Marking Period: Second Nine Weeks**

**Days: 15 (3 weeks)**

**Reporting Category/Strand: NUMBER AND NUMBER SENSE**

<p><b>SOL 6.2</b></p>	<p><b>The student will</b></p> <p>a) investigate and describe fractions, decimals and percents as ratios;</p>
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<p><b>*C and D tested without a calculator</b></p>	<p><b>b) identify a given fraction, decimal or percent from a representation;</b>  <b>c) demonstrate equivalent relationships among fractions, decimals, and percents; and</b>  <b>d) compare and order fractions, decimals, and percents.</b></p>
<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• What is the relationship among fractions, decimals and percents? Fractions, decimals, and percents are three different ways to express the same number. A ratio can be written using fraction form (<math>\frac{2}{3}</math>), a colon (2:3), or the word to (2 to 3). Any number that can be written as a fraction can be expressed as a terminating or repeating decimal or a percent.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Identify the decimal and percent equivalents for numbers written in fraction form including repeating decimals.</li> <li>• Represent fractions, decimals, and percents on a number line.</li> <li>• Describe orally and in writing the equivalent relationships among decimals, percents, and fractions that have denominators that are factors of 100.</li> <li>• Represent, by shading a grid, a fraction, decimal, and percent.</li> <li>• Represent in fraction, decimal, and percent form for a given shaded region of a grid.</li> <li>• Compare two decimals through thousandths using manipulatives, pictorial representations, number lines, and symbols (<math>&lt;</math>, <math>\leq</math>, <math>\geq</math>, <math>&gt;</math>, <math>=</math>).</li> <li>• Compare two fractions with denominators of 12 or less using manipulatives, pictorial representations, number lines, and symbols (<math>&lt;</math>, <math>\leq</math>, <math>\geq</math>, <math>&gt;</math>, <math>=</math>).</li> <li>• Compare two percents using pictorial representations and symbols (<math>&lt;</math>, <math>\leq</math>, <math>\geq</math>, <math>&gt;</math>, <math>=</math>).</li> <li>• Order no more than 3 fractions, decimals, and percents (decimals through thousandths, fractions with denominators of 12 or less), in ascending or descending order.</li> </ul>
<p><b>Essential Questions</b></p>	<p>What is the relationship among fractions, decimals and percents?</p>
<p><b>Primary Resources</b>          *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i>          Teacher-made notes from the Curriculum Framework*          Worksheets*  <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a>  <a href="#">Glencoe</a>  <a href="#">Math Playground Game</a>  <a href="#">Math is Fun</a>  <a href="#">Millionaire Conversion Game</a></p>

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	<a href="#">Ordering Decimals Game</a> <a href="#">Fractions to Decimal Video</a> <a href="#">Comparing Fractions</a>
<b>Essential Vocabulary</b>	<b>Fractions</b> - a numerical quantity that is not a whole number; a mathematical expression representing the division of one whole number by another. <b>Decimals</b> - is a fraction written in a special form using parts of ten <b>Percents</b> - is a ratio whose second term is 100. Percent means parts per hundred.

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Days: 10 (2 weeks)

Reporting Category/Strand: COMPUTATION AND ESTIMATION

SOL 6.8	The student will evaluate whole number numerical expressions, using the order of operations.
<p>Essential Knowledge/Skills/Understandings</p> <p>*Tested without a calculator</p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• What is the significance of the order of operations? The order of operations prescribes the order to use to simplify expressions containing more than one operation. It ensures that there is only one correct answer.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Simplify expressions by using the order of operations in a demonstrated step-by-step approach. The expressions should be limited to positive values and not include braces { } or absolute value    .</li> <li>• Find the value of numerical expressions, using order of operations, mental mathematics, and appropriate tools. Exponents are limited to positive values.</li> </ul>
Essential Questions	What is the significance of the order of operations?
<p><b>Primary Resources</b></p> <p>*All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i></p> <p>Teacher-made notes from the Curriculum Framework*</p> <p>Worksheets*</p> <p><a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a></p> <p><a href="#">Glencoe</a></p> <p><a href="#">Millionaire Game</a></p> <p><a href="#">PEMDAS</a></p> <p><a href="#">PEMDAS Video</a></p>
Essential Vocabulary	<b>Order of Operations</b> - The rules that say which calculation comes first in an expression

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**Reporting Category/Strand: GEOMETRY**

<p><b>SOL 6.10</b></p>	<p><b>The student will</b></p> <ul style="list-style-type: none"> <li><b>a) define pi (<math>\pi</math>) as the ratio of the circumference of a circle to its diameter;</b></li> <li><b>b) solve practical problems involving circumference and area of a circle, given the diameter or radius;</b></li> <li><b>c) solve practical problems involving area and perimeter; and</b></li> <li><b>d) describe and determine the volume and surface area of a rectangular prism.</b></li> </ul>
<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• What is the relationship between the circumference and diameter of a circle? The circumference of a circle is about 3 times the measure of the diameter.</li> <li>• What is the difference between area and perimeter? Perimeter is the distance around the outside of a figure while area is the measure of the amount of space enclosed by the perimeter.</li> <li>• What is the relationship between area and surface area? Surface area is calculated for a three-dimensional figure. It is the sum of the areas of the two dimensional surfaces that make up the three-dimensional figure.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Derive an approximation for pi (3.14 or <math>22/7</math>) by gathering data and comparing the circumference to the diameter of various circles, using concrete materials or computer models.</li> <li>• Find the circumference of a circle by substituting a value for the diameter or the radius into the formula <math>C = \pi d</math> or <math>C = 2\pi r</math>.</li> <li>• Find the area of a circle by using the formula <math>A = \pi r^2</math>.</li> <li>• Apply formulas to solve practical problems involving area and perimeter of triangles and rectangles.</li> <li>• Create and solve problems that involve finding the circumference and area of a circle when given the diameter or radius.</li> <li>• Solve problems that require finding the surface area of a rectangular prism, given a diagram of the prism with the necessary dimensions labeled.</li> <li>• Solve problems that require finding the volume of a rectangular prism given a diagram of the prism with the necessary dimensions labeled.</li> </ul>
<p><b>Essential Questions</b></p>	<p>What is the relationship between the circumference and diameter of a circle?          What is the difference between area and perimeter?          What is the relationship between area and surface area?</p>
<p><b>Primary Resources</b></p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i></p>

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<p>*All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p>Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Second Scope and Sequence Activity</a> <a href="#">Area and Perimeter Game</a> <a href="#">Circles</a> <a href="#">Circumference</a> <a href="#">Area of Circles</a> <a href="#">Volume</a> <a href="#">Surface Area</a> <a href="#">Area and Perimeter Video</a> <a href="#">Area of Triangle Video</a></p>
<p><b>Essential Vocabulary</b></p>	<p><b>Circumference</b> - The distance around the edge of a circle <b>Pi</b> - The ratio of a circle's circumference to its diameter <b>Area</b> - The amount of space inside the boundary of a flat (2-dimensional) object such as a triangle or circle <b>Perimeter</b> - The distance around a two-dimensional shape <b>Volume</b> - The amount of 3-dimensional space an object occupies <b>Surface Area</b> - The total area of the surface of a three-dimensional object.</p>

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**Reporting Category/Strand: GEOMETRY**

<b>SOL 6.12</b>	<b>The student will determine congruence of segments, angles, and polygons.</b>
<b>Essential Knowledge/Skills/Understandings</b>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• Given two congruent figures, what inferences can be drawn about how the figures are related? The congruent figures will have exactly the same size and shape.</li> <li>• Given two congruent polygons, what inferences can be drawn about how the polygons are related? Corresponding angles of congruent polygons will have the same measure. Corresponding sides of congruent polygons will have the same measure.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Characterize polygons as congruent and noncongruent according to the measures of their sides and angles.</li> <li>• Determine the congruence of segments, angles, and polygons given their attributes.</li> <li>• 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 practical and mathematical problems.</li> </ul>
<b>Essential Questions</b>	<p>Given two congruent figures, what inferences can be drawn about how the figures are related? Given two congruent polygons, what inferences can be drawn about how the polygons are related?</p>
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Congruent and Similar Game</a> <a href="#">Ice Blocker Congruent Game</a></p>
<b>Essential Vocabulary</b>	<p><b>Congruence</b> - same shape and size <b>Corresponding sides</b> - sides that are in the same position in different plane figures</p>

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	<b>Corresponding angles</b> - The angles that are formed in the same position in terms of the transversal are corresponding angles.
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**Days: 5 (1 week)**

**Reporting Category/Strand: GEOMETRY**

<b>SOL 6.13</b>	<b>The student will describe and identify properties of quadrilaterals.</b>
<b>Essential Knowledge/Skills/Understandings</b>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• Can a figure belong to more than one subset of quadrilaterals? Any figure that has the attributes of more than one subset of quadrilaterals can belong to more than one subset. For example, rectangles have opposite sides of equal length. Squares have all 4 sides of equal length thereby meeting the attributes of both subsets.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Sort and classify polygons as quadrilaterals, parallelograms, rectangles, trapezoids, kites, rhombi, and squares based on their properties. Properties include number of parallel sides, angle measures and number of congruent sides.</li> <li>• Identify the sum of the measures of the angles of a quadrilateral as a total of 360°.</li> </ul>
<b>Essential Questions</b>	Can a figure belong to more than one subset of quadrilaterals?
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Identify the Shape</a> <a href="#">Quadrilateral Quest</a> <a href="#">Study Jams</a></p>
<b>Essential Vocabulary</b>	<p><b>Quadrilaterals</b> - A flat shape with four straight sides <b>Rectangles</b> - a four-sided shape that is made up of two pairs of parallel lines and that has four right angles</p>



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	<p><b>Squares</b> - plane figure with four equal straight sides and four right angles  <b>Trapezoid</b> - a quadrilateral with only one pair of parallel sides  <b>Rhombus</b> - a four sided shape with all sides congruent</p>
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**Marking Period: Third Nine Weeks**

**Days: 25 (5 weeks)**

**Reporting Category/Strand: NUMBER AND NUMBER SENSE**

<b>SOL 6.4</b>	<b>The student will demonstrate multiple representations of multiplication and division of fractions.</b>
<b>*6.4 and 6.6 taught during the same time.</b>	
<b>Essential Knowledge/Skills/Understandings</b>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• When multiplying fractions, what is the meaning of the operation? When multiplying a whole by a fraction such as <math>3 \times \frac{1}{2}</math> the meaning is the same as with multiplication of whole numbers: 3 groups the size of <math>\frac{1}{2}</math> of the whole. When multiplying a fraction by a fraction such as <math>\frac{2}{3} \times \frac{3}{4}</math>, we are asking for part of a part. When multiplying a fraction by a whole number such as <math>\frac{1}{2} \times 6</math>, we are trying to find a part of the whole.</li> <li>• What does it mean to divide with fractions? For measurement division, the divisor is the number of groups and the quotient will be the number of groups in the dividend. Division of fractions can be explained as how many of a given divisor are needed to equal the given dividend. In other words, for <math>\frac{1}{4} \div \frac{2}{3}</math> the question is, “How many <math>\frac{2}{3}</math> make <math>\frac{1}{4}</math>?” For partition division the divisor is the size of the group, so the quotient answers the question, “How much is the hole?” or “How much for one?”</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Demonstrate multiplication and division of fractions using multiple representations.</li> <li>• Model algorithms for multiplying and dividing with fractions using appropriate representations.</li> </ul>
<b>Essential Questions</b>	<p>When multiplying fractions, what is the meaning of the operation?          What does it mean to divide with fractions?</p>

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<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Second Scope and Sequence Activity</a> <a href="#">Models</a> <a href="#">Interactive Lesson</a></p>
<p><b>Essential Vocabulary</b></p>	<p>No new vocabulary introduced</p>

**Marking Period: Third Nine Weeks**

**Days: 25 (5 weeks)**

**Reporting Category/Strand: COMPUTATION AND ESTIMATION**

<p><b>SOL 6.6</b>  *6.4 and 6.6 taught during the same time.  *Tested without a calculator</p>	<p><b>The student will</b>  a) multiply and divide fractions and mixed numbers; and  b) estimate solutions and then solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions.</p>
<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• How are multiplication and division of fractions and multiplication and division of whole numbers alike? Fraction computation can be approached in the same way as whole number computation, applying those concepts to fractional parts.</li> <li>• What is the role of estimation in solving problems? Estimation helps determine the reasonableness of answers.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Multiply and divide with fractions and mixed numbers. Answers are expressed in simplest form.</li> <li>• Solve single-step and multistep practical problem that involve addition and subtraction with fractions</li> </ul>

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	<p>and mixed numbers, with and without regrouping, that include like and unlike denominators of 12 or less. Answers are expressed in simplest form.</p> <ul style="list-style-type: none"> <li>• Solve single-step and multistep practical problems that involve multiplication and division with fractions and mixed numbers that include denominators of 12 or less. Answers are expressed in simplest form.</li> </ul>
<b>Essential Questions</b>	<p>How are multiplication and division of fractions and multiplication and division of whole numbers alike? What is the role of estimation in solving problems?</p>
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Second Scope and Sequence Activity</a> <a href="#">Simplifying Fractions</a> <a href="#">Multiplying Fractions</a> <a href="#">Dividing Fractions</a> <a href="#">Math Playground</a> <a href="#">Jeopardy</a> <a href="#">Interactive Lesson</a></p>
<b>Essential Vocabulary</b>	<p>No new vocabulary introduced</p>

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**Marking Period: Third Nine Weeks**

**Days: 5 (1 week)**

**Reporting Category/Strand: COMPUTATION AND ESTIMATION**

<b>SOL 6.7</b>	<b>The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of decimals.</b>
<b>Essential Knowledge/Skills/Understandings</b>	<b>ESSENTIAL UNDERSTANDINGS</b> <ul style="list-style-type: none"><li>• What is the role of estimation in solving problems? Estimation gives a reasonable solution to a problem when an exact answer is not required. If an exact answer is required, estimation allows you to know if the calculated answer is reasonable.</li></ul> <b>ESSENTIAL KNOWLEDGE AND SKILLS</b> <ul style="list-style-type: none"><li>• Solve single-step and multistep practical problems involving addition, subtraction, multiplication and division with decimals expressed to thousandths with no more than two operations.</li></ul>

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<b>Essential Questions</b>	What is the role of estimation in solving problems?
<b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.	<i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe Video</a> <a href="#">Rounding Decimals Game</a> <a href="#">Review of Decimal Place Value</a> <a href="#">Operations with Decimals Game</a> <a href="#">Dividing Decimals Video</a>
<b>Essential Vocabulary</b>	No new vocabulary introduced

**Marking Period: Third Nine Weeks**

**Days: 15 (3 weeks)**

**Reporting Category/Strand: PROBABILITY AND STATISTICS**

<b>SOL 6.14</b>  *6.14 and 6.15 taught during the same time.	<b>The student, given a problem situation, will</b> <b>a) construct circle graphs;</b> <b>b) draw conclusions and make predictions, using circle graphs; and</b> <b>c) compare and contrast graphs that present information from the same data set.</b>
<b>Essential Knowledge/Skills/Understandings</b>	<b>ESSENTIAL UNDERSTANDINGS</b>  • What types of data are best presented in a circle graph? Circle graphs are best used for data showing a relationship of the parts

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	<p>to the whole.</p> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Collect, organize and display data in circle graphs by depicting information as fractional.</li> <li>• Draw conclusions and make predictions about data presented in a circle graph.</li> <li>• Compare and contrast data presented in a circle graph with the same data represented in other graphical forms.</li> </ul>
<b>Essential Questions</b>	What types of data are best presented in a circle graph?
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Interactive Lesson</a>, <a href="#">Bar Graphs</a> <a href="#">Graph Makers</a> <a href="#">Circle Graph Lesson</a> <a href="#">Stem and Leaf Plot Video</a></p>
<b>Essential Vocabulary</b>	<b>Circle graph</b> - is a circular chart divided into sections that each represent a percentage of the total

**Marking Period: Third Nine Weeks**

**Days: 15 (3 weeks)**

**Reporting Category/Strand: PROBABILITY AND STATISTICS**

<b>SOL 6.15</b>	<p><b>The student will</b></p> <ul style="list-style-type: none"> <li>a) describe mean as balance point; and</li> <li>b) decide which measure of center is appropriate for a given purpose.</li> </ul>
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<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• What does the phrase “measure of center” mean? This is a collective term for the 3 types of averages for a set of data – mean, median, and mode.</li> <li>• What is meant by mean as balance point? Mean can be defined as the point on a number line where the data distribution is balanced. This means that the sum of the distances from the mean of all the points above the mean is equal to the sum of the distances of all the data points below the mean. This is the concept of mean as the balance point.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Find the mean for a set of data.</li> <li>• Describe the three measures of center and a situation in which each would best represent a set of data.</li> <li>• Identify and draw a number line that demonstrates the concept of mean as balance point for a set of data.</li> </ul>
<p><b>Essential Questions</b></p>	<p>What does the phrase “measure of center” mean? What is meant by mean as balance point?</p>
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Mean</a> <a href="#">Jeopardy Game</a> <a href="#">Central Tendency</a> <a href="#">Mean, Median, Mode Game</a> <a href="#">Suggestions of Game Pages</a> <a href="#">Mode Video</a></p>
<p><b>Essential Vocabulary</b></p>	<p><b>Measures of Center</b> - middle bunch of data - most common are mean, median, and mode</p>

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**Marking Period: Fourth Nine Weeks**

**Days: 15 (3 weeks)**

**Reporting Category/Strand: PROBABILITY AND STATISTICS**

<b>SOL 6.16</b>	<b>The student will</b> <b>a) compare and contrast dependent and independent events</b>
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	<b>b) determine probabilities for dependent and independent events.</b>
<b>Essential Knowledge/Skills/Understandings</b>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• How can you determine if a situation involves dependent or independent events? Events are independent when the outcome of one has no effect on the outcome of the other. Events are dependent when the outcome of one event is influenced by the outcome of the other.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Determine whether two events are dependent or independent.</li> <li>• Compare and contrast dependent and independent events.</li> <li>• Determine the probability of two dependent events.</li> <li>• Determine the probability of two independent events.</li> </ul>
<b>Essential Questions</b>	How can you determine if a situation involves dependent or independent events?
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Independent Events Notes and Practice</a> <a href="#">Events Practice</a></p>
<b>Essential Vocabulary</b>	<p><b>Dependent event</b> - the outcome of one event affects the outcome of another <b>Independent event</b> - event that is not affected by previous events</p>

**Marking Period: Fourth Nine Weeks**

**Days: 20 (4 weeks)**

**Reporting Category/Strand: PATTERNS, FUNCTIONS, AND ALGEBRA**

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<p><b>SOL 6.18</b>  *6.18 and 6.20 taught during the same time.</p>	<p>The student will solve one-step linear equations in one variable involving whole number coefficients and positive rational solutions.</p>
<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• When solving an equation, why is it necessary to perform the same operation on both sides of an equal sign? To maintain equality, an operation performed on one side of an equation must be performed on the other side.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Represent and solve a one-step equation, using a variety of concrete materials such as colored chips, algebra tiles, or weights on a balance scale.</li> <li>• Solve a one-step equation by demonstrating the steps algebraically.</li> <li>• Identify and use the following algebraic terms appropriately: equation, variable, expression, term, and coefficient.</li> </ul>
<p><b>Essential Questions</b></p>	<p>When solving an equation, why is it necessary to perform the same operation on both sides of an equal sign?</p>
<p><b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i> Teacher-made notes from the Curriculum Framework* Worksheets* <a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a> <a href="#">Glencoe</a> <a href="#">Second Scope and Sequence Activity</a> <a href="#">One Step Equations Game</a> <a href="#">Basketball Equation Game</a></p>
<p><b>Essential Vocabulary</b></p>	<p>No new vocabulary introduced</p>

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**Marking Period: Fourth Nine Weeks**

**Days: 20 (4 weeks)**

**Reporting Category/Strand: PATTERNS, FUNCTIONS, AND ALGEBRA**

<p><b>SOL 6.20</b></p> <p><b>*6.18 and 6.20 taught during the same time.</b></p>	<p><b>The student will graph inequalities on a number line.</b></p>
<p><b>Essential Knowledge/Skills/Understandings</b></p>	<p><b>ESSENTIAL UNDERSTANDINGS</b></p> <ul style="list-style-type: none"> <li>• In an inequality, does the order of the elements matter? Yes, the order does matter. For example, <math>x &gt; 5</math> is not the same relationship as <math>5 &gt; x</math>. However, <math>x &gt; 5</math> is the same relationship as <math>5 &lt; x</math>.</li> </ul> <p><b>ESSENTIAL KNOWLEDGE AND SKILLS</b></p> <ul style="list-style-type: none"> <li>• Given a simple inequality with integers, graph the relationship on a number line.</li> <li>• Given the graph of a simple inequality with integers, represent the inequality two different ways using symbols (<math>&lt;</math>, <math>&gt;</math>, <math>\leq</math>, <math>\geq</math>).</li> </ul>
<p><b>Essential Questions</b></p>	<p>In an inequality, does the order of the elements matter?</p>
<p><b>Primary Resources</b></p> <p>*All notes and worksheets are located in the Curriculum Resources binder in the classroom.</p>	<p><i>Glencoe Mathematics; Mathematics - Applications and Concepts Course 1</i></p> <p>Teacher-made notes from the Curriculum Framework*</p> <p>Worksheets*</p> <p><a href="#">Mathematics Enhanced Scope and Sequence – Grade 6</a></p> <p><a href="#">Glencoe</a></p> <p><a href="#">Graphing Inequalities Game</a></p> <p><a href="#">Inequalities War Game</a></p> <p><a href="#">Inequality Number Line Grapher</a></p> <p><a href="#">Inequality Practice</a></p>
<p><b>Essential Vocabulary</b></p>	<p><b>Inequalities</b> - mathematical sentence built from expressions using one or more of the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math> or <math>&gt;</math></p>

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**Marking Period: Fourth Nine Weeks**

**Days: 10 (2 weeks)**

**Reporting Category/Strand: SOL Test Review**

<b>SOL</b>	Review SOLs for the end of the year test.
<b>Essential Knowledge/Skills/Understandings</b>	
<b>Essential Questions</b>	
<b>Primary Resources</b> *All notes and worksheets are located in the Curriculum Resources binder in the classroom.	
<b>Essential Vocabulary</b>	

**The following SOL is taught within the Science 6 curriculum.**

**SOL 6.9 The student will make ballpark comparisons between measurements in the U.S. Customary System of measurement and measurements in the metric system.**

**Reporting Category/Strand: MEASUREMENT**