**Pottsville Area High School** **Grade 10-11. Geometry**

**Core Resources Available for Teachers for Instruction:**

***Prentice Hall Geometry***

| Marking Period | Unit Name | Objectives | Standards | Vocabulary | Assessments | Timeline |
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| 1 | 1.1 - Patterns and Inductive Reasoning | The students will learn to define and describe types of geometrical reasoning and proof, using them to verify valid conjectures as they surface in the study of geometry; develop a counter example to refute an invalid conjecture. | A2.2.1.1 Analyze and/or use patterns or relations. A2.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern with a rule algebraically and/or graphically. A2.2.1.1.2 Identify and/or extend a pattern as either an arithmetic or geometric sequence (e.g., given a geometric sequence, find the 20th term). | Inductive Reasoning Conjecture Counterexample | Chapter Test | 2 Days |

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| 1 | 1.3 - Points, Lines, and Planes | The students will learn to define, describe, and analyze 2- and 3-dimensional figures, their properties and relationships, including how a change in one measurement will affect other measurements of that figure. | A2.2.1.1 Analyze and/or use patterns or relations.<br>A2.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern with a rule algebraically and/or graphically.<br>A2.2.1.1.2 Identify and/or extend a pattern as either an arithmetic or geometric sequence (e.g., given a geometric sequence, find the 20th term). | Point<br>Space<br>Line<br>Collinear Points<br>Noncollinear Points<br>Plane<br>Coplanar<br>Postulate (Axiom) | Chapter Test | 2 days |
| 1 | 1.4 - Segments, Rays, Parallel Lines and Planes | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | M11.D.1.1 Analyze and/or use patterns or relationships | Segment<br>Ray<br>Opposite Rays<br>Parallel Lines<br>Perpendicular Lines<br>Skew Lines<br>Parallel Planes<br>Perpendicular Planes | Chapter Test | 2 days |

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| 1 | 1.5 - Measuring Segments | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. | Coordinate<br>Congruent Segments<br>Midpoint | Chapter Test | 2 days |
| 1 | 1.6 - Measuring Angles | The students will learn to define and describe types of geometrical reasoning and proof, using them to verify valid conjectures as they surface in the study of geometry; develop a counter example to refute an invalid conjecture. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. | Angle<br>Acute Angle<br>Right Angle<br>Obtuse Angle<br>Straight Angle<br>Congruent Angles<br>Vertical Angles<br>Adjacent Angles<br>Complementary Angles<br>Supplementary Angles | Chapter Test | 2 days |
| 1 | 2.5 - Proving Angles Congruent | The students will learn to prove and apply theorems about triangles. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.3.2 Write formal proofs and/or use logic | Theorem | Chapter Test | 2 days |

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| | | | statements to construct or validate arguments. G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/proofs by contradiction ). | | | |
| 1 | 1.7 - Basic Constructions | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | 2.9.A Construct geometric figures using dynamic tools (e.g., Geometer's Sketchpad) | Construction<br>Straightedge<br>Compass<br>Perpendicular Bisector<br>Angle Bisector | Chapter Test | 2 days |
| 1 | 1.8 - The Coordinate Plane | The students will learn to define, describe, and analyze 2- and 3-dimensional figures, their properties and relationships, including how a change in one measurement will affect other measurements of that figure. | CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically.<br><br>G.2.1.2 Solve problems using | Coordinate Plane<br>Ordered Pair<br>Origin<br>Quadrants<br>Distance Formula<br>Midpoint Formula | Chapter Test | 2 days |

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| | | | analytic geometry. G.2.1.2.1 Calculate the distance and/or midpoint between 2 points on a number line or on a coordinate plane. | | | |
| 1 | 1.9 - Perimeter, Circumference, and Area | The students will learn to define and describe types of geometrical reasoning and proof, using them to verify valid conjectures as they surface in the study of geometry; develop a counter example to refute an invalid conjecture. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.2.2.2 Use and/or develop procedures to determine or describe measures of perimeter, circumference, and/or area. (May require conversions within the same system.) G.2.2.2.1 Estimate area, perimeter or circumferenc | Perimeter<br>Circumference<br>Area<br>Pi<br>Irregular Shape | Chapter Test | 2 days |

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| | | | e of an irregular figure. G.2.2.2.2 Find the measurement of a missing length given the perimeter, circumference, or area. | | | |
| 1 | 2.1 - Conditional Statements | The students will learn to define and describe types of geometrical reasoning and proof, using them to verify valid conjectures as they surface in the study of geometry; develop a counter example to refute an invalid conjecture. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.3.2 Write formal proofs and/or use logic statements to construct or validate arguments. G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/proofs by contradiction). | Conditional<br>Hypothesis<br>Conclusion<br>Truth Value<br>Converse | Chapter Test | 2 days |

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| 1 | 2.2 - Biconditionals and Definitions | The students will learn to define and describe types of geometrical reasoning and proof, using them to verify valid conjectures as they surface in the study of geometry; develop a counter example to refute an invalid conjecture. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.3.2 Write formal proofs and/or use logic statements to construct or validate arguments.<br>G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/proofs by contradiction). | Biconditional | Chapter Test | 3 days |
| 1 | 2.3 - Deductive Reasoning | The students will learn to define and describe types of geometrical reasoning and proof, using them to verify valid conjectures as they surface in the study of geometry; develop a counter example to refute an invalid conjecture. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.3.2 Write formal proofs and/or | Deductive Reasoning<br>Law of Detachment<br>Law of Syllogism | Chapter Test | 2 days |

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| | | | use logic statements to construct or validate arguments. G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/proofs by contradiction ). | | | |
| 1 | 5.4 - Inverses, Contrapositives, and Indirect Reasoning | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.3.2 Write formal proofs and/or use logic statements to construct or validate arguments. G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or | Negation<br>Inverse<br>Contrapositive<br>Equivalent Statements<br>Indirect Reasoning | Chapter Test | 3 days |

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| | | | indirect proofs/proofs by contradiction ). | | | |
| 1 | 3.1 - Properties of Parallel Lines | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.2.2.1 Use and/or compare measurements of angles.<br>G.2.2.1.1 Use properties of angles formed by intersecting lines to find the measures of missing angles.<br>G.2.2.1.2 Use properties of angles formed when two parallel lines are cut by a transversal to find the measures of missing angles. | Transversal<br>Vertical Angles<br>Linear Pair Angles<br>Alternate Interior Angles<br>Alternate Exterior Angles<br>Same-Side Interior Angles<br>Same-Side Exterior Angles<br>Corresponding Angles | Chapter Test | 2 days |

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| 1 | 3.2 - Proving Lines Parallel | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | CC.2.3.HS.A.3<br>Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.2.2.1<br>Use and/or compare measurements of angles.<br>G.2.2.1.1<br>Use properties of angles formed by intersecting lines to find the measures of missing angles.<br>G.2.2.1.2<br>Use properties of angles formed when two parallel lines are cut by a transversal to find the measures of missing angles. | Flow Proof | Chapter Test | 2 days |
| 1 | 3.3 - Parallel and Perpendicular Lines | The students will learn to use coordinates and algebraic techniques to interpret, represent, and | CC.2.3.HS.A.3<br>Verify and apply geometric | | Chapter Test | 2 days |

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| | | verify geometric relationships. | theorems as they relate to geometric figures.<br><br>G.2.2.1<br>Use and/or compare measurements of angles.<br>G.2.2.1.1<br>Use properties of angles formed by intersecting lines to find the measures of missing angles.<br>G.2.2.1.2<br>Use properties of angles formed when two parallel lines are cut by a transversal to find the measures of missing angles. | | | |
| 1 | 3.4 - Parallel Lines and the Triangle Angle-Sum Theorem | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | CC.2.3.HS.A.3<br>Verify and apply geometric theorems as they relate to geometric figures. | Equiangular Triangle<br>Acute Triangle<br>Right Triangle<br>Obtuse Triangle<br>Equilateral Triangle | Chapter Test | 2 days |

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| | | | G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra. G.1.2.1.1 Identify and/or use properties of triangles | Isosceles Triangle<br>Scalene Triangle<br>Exterior Angle of a Polygon<br>Remote Interior Angles | | |
| 1 | 3.5 - The Poylgon Angle-Sum Theorems | The students will learn to use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra. G.1.2.1.4 Identify and/or use properties of regular polygons | Polygon<br>Convex Polygon<br>Concave Polygon<br>Equilateral Polygon<br>Equiangular Polygon<br>Regular Polygon | Chapter Test | 3 days |
| 1 | 3.6 - Lines in the Coordinate Plane | The students will learn to use coordinates and algebraic techniques to interpret, represent, and | CC.2.2.HS.C.3 Write functions or sequences | Slope<br>Linear Equation<br>Slope-Intercept | Chapter Test | 3 days |

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| | | verify geometric relationships. | that model relationships between two quantities.<br>CC.2.2.HS.D.7<br>Create and graph equations or inequalities to describe numbers or relationships.<br><br>A1.1.2.1<br>Write, solve and/or graph linear equations and inequalities using various methods.<br>A1.1.2.1.1<br>Write, solve and/or apply a linear equation (including problem situations).<br>A1.2.2.1<br>Describe, compute and/or use the rate of change (slope) of a line.<br>A1.2.2.1.1<br>Identify, describe and/or use constant rates of | Form<br>Standard (General) Form<br>Point-Slope Form | | |

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| | | | change.<br>A1.2.2.1.3<br>Write or identify a linear equation when given<br>• the graph of the line<br>• 2 points on the line, or<br>• the slope and a point on a line,<br>(Linear equation may be in point-slope, standard and/or slope-intercept form).<br>A1.2.2.1.4<br>Determine the slope and/or y-intercept represented by a linear equation or graph. | | | |
| 1 | 3.7 - Slopes of Parallel and Perpendicular Lines | The students will learn to relate slope to perpendicularity and/or parallelism (limit to linear algebraic expressions) | CC.2.3.HS.A.11<br>Apply coordinate geometry to prove simple geometric theorems algebraically. | | Chapter Test | 3 days |

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| 2 | 4.1 - Congruent Figures | The students will learn to identify and/or use properties of congruent and similar polygons or solids. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.1 Identify and/or use properties of triangles | Congruent Polygons<br>Slide<br>Flip<br>Turn<br>Flip-Turn | Chapter Test | 2 days |
| 2 | 4.2 - Triangle Congruence by SSS and SAS | The students will learn to identify and/or use properties of congruent and similar polygons or solids. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.1 Identify and/or use properties of triangles | | Chapter Test | 2 days |

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| 2 | 4.3 - Triangle Congruence by ASA and AAS | The students will learn to identify and/or use properties of congruent and similar polygons or solids. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.1 Identify and/or use properties of triangles | | Chapter Test | 2 days |
| 2 | 4.4 - Using Congruent Triangles: CPCTC | The students will learn to use triangle congruence and CPCTC to prove that parts of two triangles are congruent. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.1 Identify and/or use properties of triangles | CPCTC | Chapter Test | 2 days |

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| 2 | 4.5 - Isosceles and Equilateral Triangles | The students will learn to identify and/or use properties of isosceles and equilateral triangles. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.1 Identify and/or use properties of triangles<br>G.1.2.1.3 Identify and/or use properties of isosceles and equilateral triangles. | Legs<br>Base<br>Vertex Angle<br>Base Angles<br>Corollary | Chapter Test | 2 days |
| 2 | 4.6 - Congruence in Right Triangles | The students will learn to prove triangles using the HL Theorem. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, | Hypotenuse<br>Legs | Chapter Test | 2 days |

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| | | | polygons and polyhedra.<br>G.1.2.1.1<br>Identify and/or use properties of triangles | | | |
| 2 | 4.7 - Using Corresponding Parts of Congruent Triangles | The students will learn to identify and/or use properties of congruent and similar polygons or solids. | CC.2.3.HS.A.3<br>Verify and apply geometric theorems as they relate to geometric figures.<br>G.1.2.1<br>Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.1<br>Identify and/or use properties of triangles | Overlapping Triangles | Chapter Test | 3 days |
| 2 | 5.1 - Midsegments of Triangles | The students will learn to identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem). | CC.2.3.HS.A.3<br>Verify and apply geometric theorems as they relate to geometric figures. | Midsegment<br>Coordinate Proof | Chapter Test | 2 days |

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| 2 | 5.2 - Bisectors in Triangles | The students will learn to identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem). | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. | Distance from a point to a line | Chapter Test | 2 days |
| 2 | 5.3 - Concurrent Lines, Medians, and Altitudes | The students will learn to identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem). | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. | Concurrent<br>Nonconcurrent<br>Point of Concurrency<br>Circumcenter<br>Circumscribed about<br>Incenter<br>Inscribed in<br>Median<br>Centroid<br>Altitude<br>Orthocenter | Chapter Test | 2 days |
| 2 | 5.5 - Inequalities in Triangles | The students will learn to identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem). | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. | | Chapter Test | 3 days |

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| 2 | 6.1 - Classifying Quadrilaterals | The students will learn to identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, congruent sides/angles and supplementary angles). | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra. G.1.2.1.2 Identify and/or use properties of quadrilaterals G.2.1.2 Solve problems using analytic geometry. G.2.1.2.3 Use slope, distance and/or midpoint between 2 points on a | Quadrilateral<br>Parallelogram<br>Rhombus<br>Rectangle<br>Square<br>Kite<br>Trapezoid<br>Isosceles Trapezoid | Chapter Test | 2 days |

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| | | | coordinate plane to establish properties of a 2-dimensional shape. | | | |
| 2 | 6.2 - Properties of Parallelograms | The students will learn to identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, congruent sides/angles and supplementary angles). | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.2 Identify and/or use properties of quadrilaterals | Opposite Angles<br>Consecutive Angles | | |
| 2 | 6.3 - Proving That a Quadrilateral Is a Parallelogram | The students will learn to identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, congruent sides/angles and supplementary angles). | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1 | | Chapter Test | 2 days |

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| | | | Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.2<br>Identify and/or use properties of quadrilaterals | | | |
| 2 | 6.4 - Special Parallelograms | The students will learn to identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, congruent sides/angles and supplementary angles). | CC.2.3.HS.A.3<br>Verify and apply geometric theorems as they relate to geometric figures.<br><br>G.1.2.1<br>Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.2<br>Identify and/or use properties of quadrilaterals | | Chapter Test | 2 days |
| 2 | 6.5 - Trapezoids and Kites | The students will learn to identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, | CC.2.3.HS.A.3<br>Verify and apply geometric theorems as | Bases<br>Legs<br>Base Angles | Chapter Test | 3 days |

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| | | congruent sides/angles and supplementary angles). | they relate to geometric figures.<br><br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.2 Identify and/or use properties of quadrilaterals | Midsegment<br>Base Angles | | |
| 2 | 6.7 - Proofs Using Coordinate Geometry | The students will learn to solve problems using analytic geometry. | CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.<br>G.1.2.1 Recognize and/or apply properties of angles, polygons and polyhedra.<br>G.1.2.1.2 Identify and/or use properties of quadrilaterals | Midsegment<br>Midsegment of a trapezoid | Chapter Test | 4 days |
| 3 | 7.1 - Ratios and Proportions | The students will learn to solve problems using direct and inverse proportions. | M11.A.2.1.2 Solve problems | Ratio | Chapter Test | 3 days |

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| | | | using direct and inverse proportions . | Proportion<br>Extended proportion<br>Cross-Product Property | | |
| 3 | 7.2 - Similar Polygons | The students will learn to identify and/or use properties of congruent and similar polygons or solids. | M11.C.1.3.1 Identify and/or use properties of congruent and similar polygons or solids. | Similar<br>Similarity Ratio | Chapter Test | 3 days |
| 3 | 7.3 - Proving Triangles Similar | The students will learn to identify and/or use properties of congruent and similar polygons or solids. | M11.C.1.3.1 Identify and/or use properties of congruent and similar polygons or solids. | Indirect Measurement | Chapter Test | 3 days |
| 3 | 7.4 - Similarity in Right Triangles | The students will learn to identify and/or use proportional relationships in problem solving settings. | M11.A2.1.3 Identify and/or use proportional relationships in problem solving settings. | Geometric Mean | Chapter Test | 3 days |

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| 3 | 7.5 - Proportions in Triangles | The students will learn to identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem). | M11.C1.2.1 Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem). | | Chapter Test | 3 days |
| 3 | 8.1 - The Pythagorean Theorem and Its Converse | The students will learn to find the measure of a side of a right triangle using the Pythagorean Theorem. | CC.2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios. G.2.1.1 Solve problems involving right triangles. G.2.1.1.1 Use the Pythagorean Theorem or trigonometric ratios to write and/or solve problems involving right triangles. | Pythagorean Triple | Chapter Test | 3 days |

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| 3 | 8.2 - Special Right Triangles | The students will learn to find the measure of a side of a right triangle using the Pythagorean Theorem. | G.2.1.1 Solve problems involving right triangles. | | Chapter Test | 3 days |
| 3 | 8.3 - The Tangent Ratio | The students will learn to use tangent ratios to determine side lengths in triangles. | CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.<br><br>G.2.1.1 Solve problems involving right triangles.<br>G.2.1.1.2 Use trigonometric ratios to write and/or solve problems involving right triangles. | Tangent | Chapter Test | 4 days |
| 3 | 8.4 - Sine and Cosine Ratios | The students will learn to use sine and cosine to determine side lengths and triangles. | CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving | Sine<br>Cosine<br>Identity | Chapter Test | 4 days |

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| | | | right triangles.<br><br>G.2.1.1 Solve problems involving right triangles.<br>G.2.1.1.2 Use trigonometric ratios to write and/or solve problems involving right triangles. | | | |
| 3 | 8.5 - Angles of Elevation and Depression | The students will learn to use angles of elevation and depression to solve problems. | CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.<br>G.2.1.1 Solve problems involving right triangles.<br>G.2.1.1.2 Use trigonometric ratios to write and/or solve problems involving right | Angle of elevation<br>Angle of depression | Chapter Test | 4 days |

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| | | | triangles. | | | |
| 3 | 10.1 - Areas of Parallelograms and Triangles | The students will learn to use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface area and/or volume. (May require conversion within the same system) | M11.B.2.2 Use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface area and/or volume. (May require conversion within the same system) | Base of parallelogram<br>Altitude of parallelogram<br>Height of parallelogram<br>Height and base of triangle | Chapter Test | 4 days |
| 3 | 10.2 - Areas of Trapezoids, Rhombuses, and Kites | The students will learn to use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface area and/or volume. (May require conversion within the same system) | M11.B.2.2 Use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface | Height of Trapezoid | Chapter Test | 4 days |

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| | | | area and/or volume. (May require conversion within the same system) | | | |
| 3 | 1.2 - Drawings, Nets, and Other Models | The students will learn to make isometric, orthographic drawings, and draw nets for three-dimensional figures. | CC.2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. | Isometric Drawing<br>Orthographic Drawing<br>Foundation Drawing<br>Net | Chapter Test | 4 days |
| 4 | 11.1 - Space Figures and Cross Sections | The students will learn to recognize polyhedra and their parts and visualize cross sections of space figures. | CC.2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects | Polyhedron<br>Face<br>Edge<br>Vertex<br>Cross Section | Chapter Test | 3 days |
| 4 | 11.2 - Surface Areas of Prisms and Cylinders | The students will learn to calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. | CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems. | Prism<br>Bases<br>Lateral Faces<br>Altitude<br>Height | Chapter Test | 3 days |

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| | | | G.2.3.1 Use and/or develop procedures to determine or describe measures of surface area and/or volume. (May require conversions within the same system.) G.2.3.1.1 Calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. Formulas are provided on the reference sheet. G.2.3.1.3 Find the measuremen t of a missing length given the surface area or volume. | Right Prisms<br>Oblique Prisms<br>Lateral Area<br>Surface Area<br>Cylinder<br>Right Cylinders<br>Oblique Cylinders | | |
| 4 | 11.3 - Surface Areas of Pyramids and Cones | The students will learn to calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. | CC.2.3.HS.A.14 Apply geometric concepts to model and | Pyramid<br>Regular Pyramid<br>Slant Height<br>Cone | Chapter Test | 3 days |

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| | | | solve real world problems.<br><br>G.2.3.1<br>Use and/or develop procedures to determine or describe measures of surface area and/or volume. (May require conversions within the same system.)<br>G.2.3.1.1<br>Calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. Formulas are provided on the reference sheet.<br>G.2.3.1.3<br>Find the measurement of a missing length given the surface area or volume. | Right Cone | | |

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| 4 | 11.4 - Volumes of Prisms and Cylinders | The students will learn to calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. | CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems.<br>CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.<br><br>G.2.3.1 Use and/or develop procedures to determine or describe measures of surface area and/or volume. (May require conversions within the same system.)<br>G.2.3.1.2 Calculate the volume of prisms, cylinders, cones, pyramids and/or spheres. Formulas are provided on the reference | Volume<br>Composite Space Figure | Chapter Test | 3 days |

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| | | | sheet.<br>G.2.3.1.3<br>Find the measuremen t of a missing length given the surface area or volume. | | | |
| 4 | 11.5 - Volumes of Pyramids and Cones | The students will learn to calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. | CC.2.3.HS.A. 12<br>Explain volume formulas and use them to solve problems.<br>CC.2.3.HS.A. 14<br>Apply geometric concepts to model and solve real world problems.<br><br>G.2.3.1<br>Use and/or develop procedures to determine or describe measures of surface area and/or volume. (May require conversions within the same system.)<br>G.2.3.1<br>Use and/or | | Chapter Test | 3 days |

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| | | | develop procedures to determine or describe measures of surface area and/or volume. (May require conversions within the same system.) G.2.3.1.2 Calculate the volume of prisms, cylinders, cones, pyramids and/or spheres. Formulas are provided on the reference sheet. G.2.3.1.3 Find the measurement of a missing length given the surface area or volume. | | | |
| 4 | 11.6 - Surface Areas and Volumes of Spheres | The students will learn to calculate the surface area and volume of prisms, cylinders, cones, pyramids and/or spheres. | CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. CC.2.3.HS.A.14 | Sphere<br>Center<br>Radius<br>Diameter<br>Great Circle<br>Circumference | Chapter Test | 3 days |

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| | | | Apply geometric concepts to model and solve real world problems. G.2.3.1 Use and/or develop procedures to determine or describe measures of surface area and/or volume. (May require conversions within the same system.) G.2.3.1.1 Calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. Formulas are provided on the reference sheet. G.2.3.1.2 Calculate the volume of prisms, cylinders, cones, pyramids and/or spheres. Formulas are | Hemispheres | | |

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| | | | provided on the reference sheet.<br>G.2.3.1.3<br>Find the measurement of a missing length given the surface area or volume. | | | |
| 4 | 10.6 - Circles and Arcs | The students will learn to use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface area and/or volume. (May require conversion within the same system) | CC.2.3.HS.A.8<br>Apply geometric theorems to verify properties of circles.<br><br>CC.2.3.HS.A.9<br>Extend the concept of similarity to determine arc lengths and areas of sectors of circles.<br><br>G.1.1.1<br>Identify and/or use parts of circles and segments associated with circles, spheres, and cylinders.<br>G.1.1.1.1<br>Identify, determine | Circle<br>Center<br>Radius<br>Congruent Circles<br>Diameter<br>Central Angle<br>Semicircle<br>Minor Arc<br>Major Arc<br>Adjacent Arcs<br>Circumference<br>Concentric Circles<br>Arc Length<br>Congruent Arcs | Chapter Test | 3 days |

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| | | | and/or use the radius, diameter, segment and/or tangent of a circle. G.1.1.1.2 Identify, determine and/or use the arcs, semicircles, sectors, and/or angles of a circle. | | | |
| 4 | 10.7 - Areas of Circles and Sectors | The students will learn to use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface area and/or volume. (May require conversion within the same system) | CC.2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles.<br><br>G.1.1.1 Identify and/or use parts of circles and segments associated with circles, spheres, and cylinders. G.1.1.1.1 Identify, determine and/or use the radius, diameter, | Sector of a Circle<br>Segment of a Circle | Chapter Test | 4 days |

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| | | | segment and/or tangent of a circle. G.1.1.1.2 Identify, determine and/or use the arcs, semicircles, sectors, and/or angles of a circle. G.1.1.1.3 Use chords, tangents, and secants to find missing arc measures or missing segment measures. | | | |
| 4 | 12.1 - Tangent Lines | The students will learn to identify and/or use the properties of a radius, diameter and/or tangent of a circle (given numbers should be whole). | CC.2.3.HS.A.8 Apply geometric theorems to verify properties of circles. G.1.1.1 Identify and/or use parts of circles and segments associated with circles, spheres, and cylinders. G.1.1.1.1 Identify, | Tangent to a Circle<br>Point of Tangency | Chapter Test | 4 days |

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| | | | determine and/or use the radius, diameter, segment and/or tangent of a circle.<br>G.1.1.1.2<br>Identify, determine and/or use the arcs, semicircles, sectors, and/or angles of a circle.<br>G.1.1.1.3<br>Use chords, tangents, and secants to find missing arc measures or missing segment measures. | | | |
| 4 | 12.2 - Chords and Arcs | The students will learn to identify and/or use the properties of arcs, semicircles, inscribed angles and/or central angles. | CC.2.3.HS.A.8<br>Apply geometric theorems to verify properties of circles.<br><br>G.1.1.1<br>Identify and/or use parts of circles and segments | Chord | Chapter Test | 4 days |

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| | | | associated with circles, spheres, and cylinders. G.1.1.1.3 Use chords, tangents, and secants to find missing arc measures or missing segment measures. | | | |
| 4 | 12.3 - Inscribed Angles | The students will learn to identify and/or use the properties of arcs, semicircles, inscribed angles and/or central angles. | CC.2.3.HS.A.8 Apply geometric theorems to verify properties of circles.<br><br>G.1.1.1 Identify and/or use parts of circles and segments associated with circles, spheres, and cylinders. G.1.1.1.2 Identify, determine and/or use the arcs, semicircles, sectors, and/or angles of a circle. | Inscribed Angle<br>Intercepted Arc | Chapter Test | 4 days |

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| 4 | 12.4 - Angle Measures and Segment Lengths | Students will learn how to identify and or use the properties of arcs, semicircles, inscribed angles, and/or central angles. | CC.2.3.HS.A.8 Apply geometric theorems to verify properties of circles. G.1.1.1 Identify and/or use parts of circles and segments associated with circles, spheres, and cylinders. G.1.1.1.3 Use chords, tangents, and secants to find missing arc measures or missing segment measures. | Secant | Chapter Test | 4 days |
| 4 | 12.5 - Circles in the Coordinate Plane | Students will learn how to write the equation of a circle and to find the center and radius of a circle. | CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically. CC.2.3.HS.A.8 Apply geometric theorems to verify properties of | Standard Form of an Equation of a Circle<br>Standard form | | 4 days |

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| | | | circles. G.2.1.2 Solve problems using analytic geometry. G.2.1.2.3 Use slope, distance and/or midpoint between 2 points on a coordinate plane to establish properties of a 2-dimensional shape. | | | |