

Subject: Geometric Conventions			Grade: High School (10 th)	
Month	Unit / Theme	Content	Skills	Assessment
September	Unit1: Algebra Skill Review	<ul style="list-style-type: none"> ● Classification of numbers ● Order of Operations ● Evaluating an algebraic expression ● Translating words into mathematical statements 		<ul style="list-style-type: none"> ● Homework ● Quizzes ● Unit Test
September	Unit 2: Essentials of Geometry	<ul style="list-style-type: none"> ● Identify and name figures ● Classify angles and polygons ● Measure angles ● Identify important angle pairs ● Review basic area and perimeter 	<ul style="list-style-type: none"> ● Know the relationships between points, lines, and planes. ● Construct a bisector ● Investigate, justify, and apply the properties of triangles ● Recognize and use the markings used in geometry. ● know the differences between Euclidean and Non-Euclidean Geometry ● know the differences between Euclidean and Non-Euclidean Geometry ● know the differences between Euclidean and Non-Euclidean Geometry 	<ul style="list-style-type: none"> ● Homework ● Quizzes ● Unit Test
October	Unit 3: Parallel and Perpendicular Lines	<ul style="list-style-type: none"> ● Constructions: <ul style="list-style-type: none"> ○ Congruent Segments ○ Segment Bisector ○ Congruent Angles ○ Angle Bisector ○ Perpendicular Lines ○ Parallel Lines ● Angles formed by Parallel Lines and a Transversal <ul style="list-style-type: none"> ○ Corresponding Angles ○ Alternate Interior Angles ○ Alternate exterior Angles ○ Consecutive Angles ● Equation of a Line ● Slope ● Write equations of lines given <ul style="list-style-type: none"> ○ point, slope ○ two points ○ point, parallel line ○ point, perpendicular line ● Graph lines using <ul style="list-style-type: none"> ○ Use slope and y-intercept ○ Use intercepts (x and y) 	<ul style="list-style-type: none"> ● Identify angles relating to parallel lines <ul style="list-style-type: none"> ○ corresponding ○ consecutive interior ○ alternate interior ○ alternate exterior ● Find slopes of parallel lines ● Find slopes of perpendicular lines ● Write and graph equations of lines ● Write and graph equations of lines that are parallel and perpendicular to given lines 	<ul style="list-style-type: none"> ● Homework ● Quizzes ● Unit Test

November	Unit 4: Congruent Triangles	<ul style="list-style-type: none"> Triangle sum properties Congruence and triangles Isosceles and Equilateral triangles 	<ul style="list-style-type: none"> Write congruence statements for triangles and other geometric figures Classify triangles – scalene, isosceles, equilateral; acute, obtuse, right Identify corresponding parts of congruent triangles Investigate and apply theorems about the sum of the measures of the angles of a triangle Determine the congruence of two triangles by using one of the five congruence techniques (SSS, SAS, ASA, AAS, HL) given sufficient information about the sides and/or angles of two congruent triangles Investigate and apply algebraically the isosceles triangle theorem and its converse. 	<ul style="list-style-type: none"> Homework Quizzes Unit Test
December	Unit 5: Transformations	<ul style="list-style-type: none"> Translations and vectors Reflections Rotations Composition of transformations Symmetry Dilations 	<ul style="list-style-type: none"> Understand and use key vocabulary such as image, preimage and isometry Perform the following transformations in the Euclidian and Cartesian plane <ul style="list-style-type: none"> reflection (across an axis or a line) rotations (about a point, the origin and not the origin) translations (including vectors) Use coordinate rules for transformations Define and apply isometries in the plane using proper notation Apply transformations to problem solving Identify line symmetry and rotational symmetry Define and apply similarities 	<ul style="list-style-type: none"> Homework Quizzes Unit Test
January	Unit 6: Relationships within Triangles	<ul style="list-style-type: none"> Midsegment theorem Perpendicular bisectors Angle bisectors of triangles Medians and Altitudes Inequalities in triangles Inequalities in two triangles 	<ul style="list-style-type: none"> Use properties of midsegments to solve problems Investigate and apply the concurrence of medians, altitudes, angle bisectors, and perpendicular bisectors of triangles to solve problems. Investigate and apply algebraically the triangle inequality theorem 	<ul style="list-style-type: none"> Homework Quizzes Unit Test
January	Unit 7: Similarity	<ul style="list-style-type: none"> Ratio, proportion and geometric mean Similar triangles Similar polygons Similarity transformations 	<ul style="list-style-type: none"> Write and solve proportion problems Solve problems involving the geometric mean Solve problems involving similar triangles and similar polygons Solve problems using the proportionality theorems Relate similarity to dilations and solve problems 	<ul style="list-style-type: none"> Homework Quizzes Unit Test
February	Unit 8: Right Triangles and Trigonometry	<ul style="list-style-type: none"> Pythagorean Theorem Similar right triangles Special right triangles Sine, Cosine and Tangent Ratios 	<ul style="list-style-type: none"> Use the Pythagorean Theorem and its converse to solve problems Use proportional reasoning to solve problems involving similar right triangles Solve problems involving special right triangles Use trig ratios to solve indirect measurement problems Solve right triangles Apply inverse trig ratios to solve right triangle problems 	<ul style="list-style-type: none"> Homework Quizzes Unit Test
February	Unit 9: Quadrilaterals	<ul style="list-style-type: none"> Find angle measures in polygons Properties of 	<ul style="list-style-type: none"> Develop and solve problems using the interior and exterior angle measures of polygons 	<ul style="list-style-type: none"> Homework Quizzes

		<ul style="list-style-type: none"> ○ quadrilaterals ○ parallelograms ○ rhombuses ○ rectangles ○ squares ○ trapezoids ○ kites 	<ul style="list-style-type: none"> ● Classify quadrilaterals by their properties ● Use properties of parallelograms to solve problems including their angles, sides and diagonals ● Determine if a quadrilateral is just a parallelogram or a special parallelogram (rectangle, rhombus, square) ● Investigate and apply theorems algebraically about trapezoids (including isosceles trapezoids) involving their angles, sides, medians, and diagonals. ● Use properties of all quadrilaterals to solve problems ● Justify that some quadrilaterals are parallelograms, rhombuses, rectangles, squares, or trapezoids 	<ul style="list-style-type: none"> ● Unit Test
March	Unit 10: Properties of Circles	<ul style="list-style-type: none"> ● Tangents ● Arc measures ● Chords ● Inscribed angles and polygons ● Angle relationships in circles ● Segment lengths in circles ● Equations and graphs of circles 	<ul style="list-style-type: none"> ● Identify tangents, chords and secants of circles and use them to solve problems ● Find arc measures in circles ● Use properties of chords to solve problems ● Investigate and apply algebraically theorems about tangent lines to a circle <ul style="list-style-type: none"> ○ a perpendicular to the tangent at the point of tangency ○ two tangents to a circle from the same external point ● Investigate and apply theorems regarding chords of a circle – perpendicular bisectors of chords ● Investigate and apply algebraically theorems about arcs of a circle - arc cut by two parallel lines ● Investigate and apply algebraically theorems regarding segments intersected by a circle: along two intersecting chords of a given circle ● Write the equation of a circle <ul style="list-style-type: none"> ○ given its center and radius ○ given the endpoints of a diameter ○ given the standard form, complete the square to put it in center-radius form, 	<ul style="list-style-type: none"> ● Homework ● Quizzes ● Unit Test
April	Unit 11: Measuring Length and Area	<ul style="list-style-type: none"> ● Area of <ul style="list-style-type: none"> ○ Triangles ○ Parallelograms ○ Trapezoids ○ Rhombuses ○ Kites ● Perimeter and area of similar figures ● Circumference and arc length ● Areas of circles and sectors ● Areas of regular polygons 	<ul style="list-style-type: none"> ● Justify and use the formulas for the areas of triangles, parallelograms, rectangles, rhombuses, trapezoids and kites to solve problems ● Justify and use the formulas for finding the area and circumference of a circle and for finding arc lengths and areas of sectors ● Find areas and perimeters of regular polygons ● Solve problems involving composite figures ● Find perimeters and areas of similar figures ● Construct an equilateral triangle 	<ul style="list-style-type: none"> ● Homework ● Quizzes ● Unit Test

May	Unit 12 Surface Area and Volume	<ul style="list-style-type: none"> ● Surface area of <ul style="list-style-type: none"> ○ Prisms ○ Cylinders ○ Pyramids ○ Cones ● Volume of <ul style="list-style-type: none"> ○ Prisms ○ Cylinders ○ Pyramids ○ Cones ● Surface area and volume of spheres ● Similar solids 	<ul style="list-style-type: none"> ● Classify and sketch solids ● Describe cross sections ● Apply surface area and volume formulas of prisms, cylinders, pyramids, cones, and spheres to solve problems ● Apply Cavalier's principle ● Solve problems involving composite solids ● Solve problems involving similar solids 	<ul style="list-style-type: none"> ● Homework ● Quizzes ● Unit Test
June	Course Final Exam	●	●	Castle Learning