Geometry

Unit 1 Coordinate Geometry & Right Triangles

	Course Preview Incidentals, Books, Seating Charts, Class Rules and Procedures Duration: 1 Day					

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 1 **21 Days**	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	2- and 3-dimensional figures	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships.	Slopes of Lines- Suggested Text-Glencoe Geometry (2010) Section 3-3 (pgs 186 -194) Objectives: SWBA to find slopes of lines- SWBA to use slope to identify parallel and perpendicular lines. Duration: 2 Days	Slope Rate of change	G.2.1.2-Solve problems using analytic geometry. G.2.1.2.2-Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations). G.2.1.3-Compute and/or use the slope of a line. G.2.1.3.1-Apply the concept of the slope of a line to solve problems.
	Relations and functions are mathematical relationships that can be represented and analyzed using words, tables, graphs, and equations.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	2- and 3-dimensional figures	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships	Equations of Lines- Suggested Text-Glencoe Geometry (2010) Section 3-4 (pgs 196- 204) Objectives: SWBA to write an equation of a line given information about the graph. SWBA to solve problems by writing equations.	Slope-intercept form Point-slope form	G.2.1.2-Solve problems using analytic geometry. G.2.1.2.2-Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations). G.2.1.3-Compute and/or use the slope of a line. G.2.1.3.1-Apply the concept of the slope of a line to solve problems.

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				Duration: 3 Days		
	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How can you use coordinates and algebraic techniques to represent interpret, and verify geometric relationships?	Analytic Geometry	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships	Distance and Midpoint Suggested Text-Glencoe Geometry (2010) Section 1-3 (pgs 25 to 35) Objectives: SWBA to find the distance between two points. SWBA to find the midpoint of a segment. Duration:3 Days	Distance Midpoint Segment bisector	G.2.1.2-Solve problems using analytic geometry. G.2.1.2.1-Calculate the distance and/or midpoint between two points on a number line or on a coordinate plane.
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	2- and 3-dimensional figures	Use concepts of congruence and similarity to relate and compare 2- and 3-dimensional figures, including trigonometric ratios.	Pythagorean Theorem and its Converse- Suggested Text-Glencoe Geometry (2010) Section 8-2 (pgs 541 - 551) Objectives: SWBA to use the Pythagorean Theorem. – SWBA to use the Converse of the Pythagorean Theorem. Duration: 2 Days	Pythagorean triple	G.2.1.1-Solve problems involving right triangles. G.2.1.1.1-Use the Pythagorean theorem to write and/or solve problems involving right triangles.
	There are some mathematical relationships that are always true and these	How can you use coordinates and algebraic techniques to	Trigonometric Ratios	Use concepts of congruence and similarity to relate and compare 2-	Special Right Triangle-Suggested Text-Glencoe Geometry (2010) Section 8-3 (pgs 552 - 560)-	Special Right Triangles	G.2.1.1-Solve problems involving right triangles. G.2.1.1.2-Use trigonometric ratios to write and/or solve problems involving right triangles.

	relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	represent, interpret, and verify geometric relationships?		and 3-dimensional figures, including trigonometric ratios.	Objectives: SWBA to use the properties of 45-45-90 triangle. – SWBA to use the properties of 30-60-90 triangle. Duration: 3 Days		
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	Trigonometric Ratios	Use concepts of congruence and similarity to relate and compare 2- and 3-dimensional figures, including trigonometric ratios.	Trigonometry- Suggested Text-Glencoe Geometry (2010) Section 8-4 (pgs 562 572) Objectives: SWBA to find trigonometric ratios using right triangles. SWBA to trigonometry ratios to find angle measure in right triangles. Duration: 3 Days	Trigonometry Trigonometric ratio Sine Cosine Tangent Inverse sine Inverse cosine Inverse tangent	G.2.1.1-Solve problems involving right triangles. G.2.1.1.2-Use trigonometric ratios to write and/or solve problems involving right triangles.
	There are some mathematical relationships that are always true and these relationships are used as the	How can a change in one measurement of a 2- or 3-dimensional figure effect other	Trigonometric Ratios	Use concepts of congruence and similarity to relate and compare 2- and 3-dimensional	Angles of Elevation and Depression- Suggested Text-Glencoe Geometry (2010) Section 8-5	Angle of elevation Angle of depression	G.2.1.1-Solve problems involving right triangles. G.2.1.1.2-Use trigonometric ratios to write and/or solve problems involving right triangles.

	rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	measurements such as perimeter, area, surface area or volume of that figure?		figures, including trigonometric ratios.	(pgs 574--581) Objectives: SWBA to find trigonometric ratios using right triangles.- SWBA to trigonometry ratios to find angle measure triangles. Duration: 3 Days	Angle of elevation Angle of depression	
	Unit 1 Common Assessment Review Coordinate Geometry & Right Triangles Duration:1 Day						
Unit 1 21 Days	Test Unit 1 Common Assessment Coordinate Geometry & Right Triangles Duration:1 Day						

Unit 2   Building Blocks for Geometry

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 2 17 Days	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can you use coordinates and algebraic techniques to represent interpret, and verify geometric relationships?	Geometric Representations	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships	Points, Lines and Planes - Suggested Text-Glencoe Geometry (2010) Section 1-1 (pgs 5 to 13) Objectives: SWBA to identify and model points, lines and planes. SWBA to identify	Undefined term Point Line Plane Collinear	G.2.1.2-Solve problems using analytic geometry. G.2.1.2.1-Calculate the distance and/or midpoint between two points on a number line or on a coordinate plane.

					intersecting lines and planes Duration: 3 Days	Coplanar Intersection Definition Defined term Space	
	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How can you use coordinates and algebraic techniques to represent interpret, and verify geometric relationships?	Concept: Analytic Geometry	Competencies: Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships	Linear Measure Suggested Text-Glencoe Geometry (2010) Section 1-2 (pgs 14 - 21) Objectives: SWBA to measure segments. SWBA to calculate with measures. Duration: 2 Days	Line segment Betweenness of points Between Congruent segments Construction	G.2.1.2-Solve problems using analytic geometry. G.2.1.2.1-Calculate the distance and/or midpoint between two points on a number line or on a coordinate plane.
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can you explain the relationship between congruence and similarity in both 2- and 3-dimensional figures?	2- and 3-dimensional figures	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.	Angle Measure-- Suggested Text-Glencoe Geometry (2010) Section 1-4 (pgs 36 to 44) Objectives: SWBA to measure and classify angles SWBA to identify and use congruent angles and the bisector of an angle. Duration: 2 Days	Ray Opposite rays Angle Side Vertex Interior Exterior	G.2.2.1-Use and/or compare measurements of angles. G.2.2.1.1-Use properties of angles formed by intersecting lines to fiand the measures of missing angles.

						Degree
						Right angle	
						Acute angle	
						Obtuse angle	
						Angle bisector	
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can you explain the relationship between congruence and similarity in both 2- and 3-dimensional figures?	2- and 3-dimensional figures	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.	Angles Relationships - Suggested Text-Glencoe Geometry (2010) Section 1-5 (pgs 46 - 55) Objectives: SWBA to identify and use special pairs of angles. SWBA to identify perpendicular lines. Duration: 3 Days	Adjacent angles Linear pair Vertical angles Complementary angles Supplementary angles Perpendicular	G.2.2.1-Use and/or compare measurements of angles. G.2.2.1.1-Use properties of angles formed by intersecting lines to find the measures of missing angles.
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that	2- and 3-dimensional figures	Define, describe, and analyze 2- and 3-dimensional figures, their properties and relationships, including how a change in one measurement will affect other	Two Dimensional Figures - Suggested Text-Glencoe Geometry (2010) Section 1-6 (pgs 56 - 66) Objectives: SWBA to identify and name polygons. SWBA to find perimeter, circumference and area of two dimensional figures.	Polygon Vertex of a polygon Concave Convex n-gon Equilateral	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. G.2.3.2-Describe how a change in one dimension of a 3 dimensional figure affects other measurements of that figure. G.2.3.2.1-Describe how a change in the linear dimension of a figure affects its surface area or volume (e.g., How does changing the length of the edge of a

	forms of expressions and solving equations and inequalities.	figure?		measurements of that figure.	Duration: 3 Days	polygon Equiangular polygon Regular polygon Perimeter Circumference Area	cube affect the volume of the cube?).
	There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Three Dimensional Figures-Suggested Text-Glencoe Geometry (2010) Section 1-7 (pgs 67 - 75) Objectives: SWBA to identify and name three dimensional figures. SWBA to find surface area and volume. Duration: 2 Days	Polyhedron Face Edge Vertex Prism Base Pyramid Cylinder Cone Sphere Regular polyhedron	G.1.2.1-Recognize and/or apply properties of angles, polygons, and polyhedra. G.1.2.1.5-Identify and/or use properties of pyramids and prisms.

					Platonic solid Surface area Volume	

Review for Common Assessment   Unit 2 Building Blocks for Geometry Duration: 1 Day

Unit 2 17 Days	Test Common Assessment Unit 2 Building Blocks for Geometry Duration: 1 Day

Unit 3 Reasoning and Proof

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 3 11 Days	Mathematical statements can be justified through deductive and inductive reasoning and proof.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Reasoning and Proof	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	Conditional Statements and Deductive Reasoning Suggestive Text: Glencoe Geometry (2012) Section 2-3 and 2-4 (pgs. 105-124) Objectives: SWBA to analyze statements in If-Then form. SWBA to use the Laws of Detachment. SWBA to use the Law of Syllogism.	Conditional statement If-then Statement Hypothesis Conclusion Deductive reasoning Law of Detachment Law of	Standard: 2.4.G.A Write a formal proofs (direct proofs, indirect proofs, proofs by contradiction, use of counter-examples, truth tables, etc.) to validate arguments or conjectures Anchor Descriptor: G.1.3.2.Write formal proofs and/or use logic statements to construct or validate arguments. Eligible Content: G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/ proofs by contradiction.

				Duration: 3 Days	Syllogism.	
	Mathematical statements can be justified through deductive and inductive reasoning and proof.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Reasoning and Proof	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	Proving Segment Relationships Suggested text: Glencoe Geometry (2012) Section 2-7 (pgs. 144-145) Objectives: SWBA to write proofs involving segment addition SWBA to write proofs involving segment congruence. Duration: 3 Days		Standard: 2.4.G.A Write a formal proofs (direct proofs, indirect proofs, proofs by contradiction, use of counter-examples, truth tables, etc.) to validate arguments or conjectures Anchor Descriptor: G.1.3.2.Write formal proofs and/or use logic statements to construct or validate arguments. Eligible Content: G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/ proofs by contradiction.
	Mathematical statements can be justified through deductive and inductive reasoning and proof.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Reasoning and Proof	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	Proving Angle Relationships Suggested text: Glencoe Geometry (2012) Section 2-8 (Pgs. 151-159) Objectives: SWBA to write proofs involving supplementary and complementary angles. Duration: 3 Days		Anchor Descriptor: G.1.3.2.Write formal proofs and/or use logic statements to construct or validate arguments. G.2.2.1 Use and compare measurements of angles. Eligible Content: G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/ proofs by contradiction. G.2.2.1.1 Use properties of angles formed by intersecting lines to find measures of missing angles. G2.2.1.2 Use properties od angles formed when two parallel lines are cut by a transversal find the measures of

							the missing angles'

Unit 3 11 Days	Test Common Assessment Unit 3 Reasoning and Proof Duration: 1 Day

Unit 4   Parallels and Perpendiculars

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 4 **12 Days**	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface are or volume of that figure?	2- and 3-dimensional figures	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.	Parallel and Perpendicular Lines/ Parallel Lines and Transversals Suggested Text-Glencoe Geometry (2010)- Chapter 3 Section 3-1 (pgs 171- 176) Objectives: SWBA to identify the relationships between two lines or two planes. SWBA to name angle pairs formed by parallel lines and transversals. Duration: 2 Days	Parallel lines Skew lines Parallel planes Transversal Interior angles Exterior angles Consecutive interior angles Alternate interior angles Alternate	G.2.2.1-Use and/or compare measurements of angles. 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.

					exterior angles Corresponding angles	
	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface are or volume of that figure?	2- and 3-dimensional figures	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.	Angles and Parallel Lines - Suggested Text-Glencoe Geometry (2010) Section 3-2 (pgs 178 - 184) Objectives: SWBA to use theorems to determine the relationships between specific pairs of angles. SWBA to use algebra to find angle measures. Duration: 3 Days	Parallel Lines
	Mathematical statements can be justified through deductive and inductive reasoning and proof.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	Reasoning and Proof	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	Proving Lines Parallel- Suggested Text-Glencoe Geometry (2010) Section 3-5 (pgs.) Objectives: SWBA to recognize angle Pairs that occur with parallel lines. SWBA to prove that two lines are parallel.	Parallel

Continuation of last column:

G.2.2.1-Use and/or compare measurements of angles.
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.

G.2.2.1-Use and/or compare measurements of angles.
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.

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
					invalid conjecture.		
					Duration; 2 Days		
	Relations and functions are mathematical relationships that can be represented and analyzed using words, tables, graphs, and equations.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	Reasoning and Proof	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.	Perpendiculars and Distance - Suggested Text-Glencoe Geometry (2010) Section 3-6 (pgs 213 - 222) Objectives: SWBA to recognize angle pairs that occur with parallel lines. SWBA to prove that two lines are parallel using angle relationships. Duration: 3 Days	Equidistant	G.2.1.2-Solve problems using analytic geometry. G.2.1.2.2-Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations). G.2.1.3-Compute and/or use the slope of a line. G.2.1.3.1-Apply the concept of the slope of a line to solve problems.

	Review Common Assessment Unit 4 Parallels and Perpendiculars Duration:1 Day

Unit 4 12 Days	Test Common Assessment Unit 4 Parallels and Perpendiculars Duration: 1 Day

Unit 5 Triangles Congruence and Similarity

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 5 14 Days	Spatial reasoning and visualization are ways to orient thinking about	How can a change in one measurement of a 2- or 3 dimensional	Geometric Relations: Congruence and Similarity	Define, describe, and analyze 2- and 3-dimensional figures, their	Congruent Triangles/ Classifying Triangles - Suggested Text-Glencoe Geometry	Acute Triangle Equiangular triangle	G.1.2.1-Recognize and/or apply properties of angles, polygons, and polyhedra. G.1.2.1.3-Identify and/or use properties of isosceles and equilateral

	the physical world.	figure effect other measurements such as perimeter, area, surface area or volume of that figure?		properties and relationships, including how a change in one measurement will affect other measurements of that figure.	(2010) Chapter 4 Section 4-1(pgs 235 -242) Objectives: SWBA to identify and classify triangles by angle measures. SWBA to identify and classify triangles by side measures. Dutation: 2 Days	Obtuse triangle Right Triangle Equilateral triangle Isosceles triangle Scalene triangle	triangles.
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3- dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	Geometric Relations: Congruence and Similarity	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.	Angles of Triangles- Suggested Text- Glencoe Geometry (2010) Section 4-2 (pgs 244 - 252) Objectives: SWBA to apply the triangle angle sum theorem. SWBA to apply the Exterior Angle Theorem.- Duration: 2 Days	Auxiliary line Exterior angle Remote interior angles Flow proof	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.
	Mathematical statements can be justified	How do you use the ideas of direct and	Geometric Relations: Congruence and	Define and describe types of geometrical	Isosceles and Equilateral Triangles-	Legs of an isosceles triangle	G.1.2.1-Recognize and/or apply properties of angles, polygons, and polyhedra.

	through deductive and inductive reasoning and proof.	indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Similarity	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.	Suggested Text- Glencoe Geometry (2010)- Section 4-6 (pgs 283 - 291 Objectives: SWBA to use the ASA Postulate to test for triangle congruence. SWBA to use the AAS Postulate to test for triangle congruence. Duration:2 Days	Vertex angle Base angles	G.1.2.1.3-Identify and/or use properties of isosceles and equilateral triangles.
	Mathematical statements can be justified through deductive and inductive reasoning and proof.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Geometric Relations: Congruence and Similarity	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.	Congruent Triangles- Suggested Text- Glencoe Geometry (2010) Section 4-3 (pgs 253 - 261) Objectives: SWBA to name and use corresponding parts of congruent polygons. SWBA to prove triangles congruent uses the definition	Congruent Congruent polygons Corresponding parts	G.1.3.1-Use properties of congruence, correspondence, and similarity in problem solving settings involving 2 and 3 dimensional figures. G.1.3.1.1-Identify and/or use properties of congruent and similar polygons or solids. G.1.3.1.2-Identify and/or use proportional relationships in similar figures.

				of congruence. Duration:1 Day		
	Mathematical statements can be justified through deductive and inductive reasoning and proof.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Geometric Relations: Congruence and Similarity	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.	Proving Triangles Congruent SSS, SAS Suggested Text-Glencoe Geometry (2010) Section 4-4 (pgs 263-271) Objectives: SWBA to use the SSS Postulate to test for triangle congruence. SWBA to use the SAS Postulate to test for triangle congruence. Duration: 3 Days	Included angle	G.1.3.1-Use properties of congruence, correspondence, and similarity in problem solving settings involving 2 and 3 dimensional figures. G.1.3.1.1-Identify and/or use properties of congruent and similar polygons or solids. G.1.3.1.2-Identify and/or use proportional relationships in similar figures.
	Mathematical statements can be justified through deductive and inductive reasoning and proof.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Geometric Relations: Congruence and Similarity	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	Proving Triangles Congruent ASA, AAS, CPCTC Suggested Text-Glencoe Geometry (2010)- Section 4-5 (pgs 273 - 280) Objectives: SWBA to use the ASA Postulate to test for triangle - congruence.	Included side	G.1.3.1-Use properties of congruence, correspondence, and similarity in problem solving settings involving 2 and 3 dimensional figures. G.1.3.1.1-Identify and/or use properties of congruent and similar polygons or solids. G.1.3.1.2-Identify and/or use proportional relationships in similar figures.

| | | | | invalid conjecture. | SWBA to use the AAS Postulate to test for triangle congruence.

Duration: 2 Days | | |

Unit 6 Relationships in Triangles

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 6 **13 Days**	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Geometric Representations	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.	Bisectors of Triangles - Suggested Text- Glencoe Geometry (2010) Chapter 5 Section 5-1 (pgs 321- 331) Objectives: SWBA to identify and use perpendicular bisectors in triangles.	Perpendicular bisector Concurrent lines Point of concurrency Circumcenter Incenter	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.

					SWBA to identify and use angles bisectors in triangles. Duration: 2 Days		
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How do you use the ideas of direct and indirect proof, and counter-examples to verify valid conjectures and refute invalid conjectures?	Geometric Representations	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.	Medians and Altitudes of Triangles Suggested Text-Glencoe Geometry (2010) Section 5-2 (pgs 332 - 341) Objectives: SWBA to identify and use medians in triangles. SWBA to identify and use altitudes in triangles. Duration: 2 Days	Median Centroid Altitude Orthocenter	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.
	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent	How do you use the ideas of direct and indirect proof, and counter examples to verify valid conjectures and refute invalid conjectures?	Geometric Representations	Define, describe, and analyze 2- and 3-dimensional figures, their properties and relationships, including how a change in one measurement	Inequalities in One Triangles Suggested Text-Glencoe Geometry (2010) Section 5-3 (pgs 342 - 349) Objectives: SWBA to recognize	Inequalities in One Triangle	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.

	forms.			will affect other measurements of that figure.	and apply properties of inequalities to the measures of the angles of triangles. SWBA to recognize and apply properties of inequalities the relationship between the angles and sides of a triangle. Duration: 2 Days		
	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How do you use the ideas of direct and indirect proof, and counter examples to verify valid conjectures and refute invalid conjectures?	2- and 3-dimensional figures	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.	The Triangle Inequality-Suggested Text-Glencoe Geometry (2010) Section 5-5 (pgs 359 - 366) Objectives: SWBA to use the Triangle Inequality Theorem to identify possible triangle. SWBA to prove triangle relationships using the Triangle Inequality Theorem. Duration: 2 Days	Triangle Inequality	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.

	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How do you use the ideas of direct and indirect proof, and counter examples to verify valid conjectures and refute invalid conjectures?	Reasoning and Proof	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	Indirect Proof Suggested Text-Glencoe Geometry (2010) (pgs. 351-358) Section 5-4 Objectives: SWBA to write indirect algebraic and/or geometric proofs Duration: 3 Days	Indirect reasoning Indirect Proof Proof by Contradiction	Standard: 2.4.G.A Write a formal proofs (direct proofs, indirect proofs, proofs by contradiction, use of counter-examples, truth tables, etc.) to validate arguments or conjectures Anchor Descriptor: Write formal proofs and/or use logic statements to construct or validate arguments. Eligible Content: Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/ proofs by contradiction.
	Review Common Assessment Unit 6 Triangle Relationships Duration: 1 Day						
Unit 6 13 Days	Test Common Assessment Unit 6 Triangle Relationships Duration: 1 Day						
Unit 7 Quadrilaterals							
Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 7 **16 Days**	Patterns exhibit relationships that can be extended, described, and generalized.	How can you use coordinates and algebraic techniques to represent,	2- and 3-dimensional figures	Define, describe, and analyze 2- and 3-dimensional figures, their properties and	Quadrilaterals/ Angles of Polygons-Suggested Text-Glencoe Geometry (2010) Section 6-1	Diagonal	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.

		interpret, and verify geometric relationships?		relationships, including how a change in one measurement will affect other measurements of that figure.	(pgs 389 - 397) Objectives: SWBA to find and use the sum of the measures of the interior angles of a polygon. SWBA to find and use the sum of the measures of the exterior angles of a polygon. Duration: 2 Days		
	Patterns exhibit relationships that can be extended, described, and generalized.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	2- and 3-dimensional figures	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.	Parallelograms-Suggested Text- Glencoe Geometry (2010) Section 6-2 (pgs 399- 407)- Objectives: SWBA to recognize and apply properties of the sides and angles of parallelograms. SWBA to recognize and apply properties of the diagonals of parallelograms. Duration: 3 Days	Parallelogram	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.

Patterns exhibit relationships that can be extended, described, and generalized.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	2- and 3-dimensional figures	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.	Tests for Parallelograms Suggested Text-Glencoe Geometry (2010) Section 6-3 (pgs 409- 417) Objectives: SWBA to recognize the conditions that ensure a quadrilateral is a parallelogram.- SWBA to prove that the set of points forms a parallelogram in the coordinate plane. Duration: 3 Days	Parallelogram	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 two points on a coordinate plane to establish properties of a 2-dimensional shape.
Patterns exhibit relationships that can be extended, described, and generalized.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	2- and 3-dimensional figures	Define, describe, and analyze 2- and 3-dimensional figures, their properties and relationships, including how a change in one measurement will affect other measurements	Rectangles - Suggested Text-Glencoe Geometry (2010) Section 6-4 (pgs 419-425) Objectives: SWBA to recognize and apply properties of rectangles.	Rectangle	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 two points on a coordinate plane to establish properties of a 2-dimensional shape.

			of that figure.	SWBA to determine whether parallelograms are rectangles. Duration: 2 Days		
	Patterns exhibit relationships that can be extended, described, and generalized.	How can you use coordinates and algebraic techniques to represent, interpret, and verify geometric relationships?	2- and 3-dimensional figures	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.	Rhombi and Squares- Suggested Text-Glencoe Geometry (2010) Section 6-5 (pgs 426- 434) Objectives: SWBA to recognize and apply the properties of rhombi and squares,- SWBA to determine whether quadrilaterals are rectangles, rhombi, or squares Duration: 2 Days	Rhombus Square	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 two points on a coordinate plane to establish properties of a 2dimensional shape.
	Patterns exhibit relationships that can be extended, described, and generalized.	How can you use coordinates and algebraic techniques to represent, interpret, and verify	2- and 3-dimensional figures	Define, describe, and analyze 2- and 3-dimensional figures, their properties and relationships, including how	Trapezoids and Kites - Suggested Text-Glencoe Geometry (2010) Section 6-6 (pgs 435- 444) Objectives:	Trapezoid Bases Legs of a trapezoid	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

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
		geometric relationships?		a change in one measurement will affect other measurements of that figure.	SWBA to apply the properties of trapezoids. SWBA to apply the properties of kites. Duration: 2 Days	Base angles Isosceles trapezoid Midsegment of a trapezoid Kite	midpoint between two points on a coordinate plane to establish properties of a 2?dimensional shape.
	Review Common Assessment Unit 7 Quadrilateral Duration: 1 Day						
Unit 7 16 Days	Test Common Assessment Unit 7 Quadrilaterals Duration: 1 Day						
	Unit 8 Proportions and Similarity						

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 8 **12 Days**	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How can you use coordinates and algebraic techniques to represent interpret, and verify geometric relationships?	Geometric Relations: Congruence and Similarity	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships.	Ratios and Proportions - Suggested Text- Glencoe Geometry (2010) Section 7-1 (pgs 457- 463) Objectives: SWBA to write ratios. SWBA to write and	Ratio Extended ratios Proportion Extremes Mans Cross products	G.1.3.1-Use properties of congruence, correspondence, and similarity in problem solving settings involving 2 and 3 dimensional figures. G.1.3.1.1-Identify and/or use properties of congruent and similar polygons or solids. G.1.3.1.2-Identify and/or use proportional relationships in similar figures.

	Big Idea	Essential Question	Geometric Relations	Skill	Resource/Objectives	Vocabulary	Standards
					solve proportions. Duration:2 Days		
	Big Idea: Similarity relationships between objects are a form of proportional relationships. Congruence describes a special similarity relationship between objects and is a form of equivalence.	How can you explain the relationship between congruence and similarity in both 2- and 3-dimensional figures?	Geometric Relations: Congruence and Similarity	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships.	Similar Polygons- Suggested Text- Glencoe Geometry (2010) Section 7-2 (pgs 465- 473) Objectives: SWBA to use proportions to identify similar polygons. SWBA to solve problems using the properties of similar polygons. Duration: 3 Days	Similar polygons Similarity ratio Scale factor	G.1.3.1-Use properties of congruence, correspondence, and similarity in problem solving settings involving 2 and 3 dimensional figures. G.1.3.1.1-Identify and/or use properties of congruent and similar polygons or solids. G.1.3.1.2-Identify and/or use proportional relationships in similar figures.
	Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.	How can you use coordinates and algebraic techniques to represent interpret, and verify geometric relationships?	Geometric Relations: Congruence and Similarity	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.	Drawings and Models- Suggested Text-Glencoe Geometry (2010) Section 7-7 (pgs 512 - 517) Objectives: SWBA to interpret scale models. SWBA to use scale factor to solve problems.- Duration: 3 Days	Scale model Scale drawing Scale	G.1.3.1-Use properties of congruence, correspondence, and similarity in problem solving settings involving 2 and 3 dimensional figures. G.1.3.1.1-Identify and/or use properties of congruent and similar polygons or solids. G.1.3.1.2-Identify and/or use proportional relationships in similar figures.

	Similarity relationships between objects are a form of proportional relationships. Congruence describes a special similarity relationship between objects and is a form of equivalence.	How can you explain the relationship between congruence and similarity in both 2- and 3-dimensional figures?	Geometric Relations: Congruence and Similarity	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.	Similar Triangles- Suggested Text- Glencoe Geometry (2010) Section 7-3 (pgs 474 - 483) Objectives: SWBA to use the AA Similarity Postulate and the SSS and SAS Similarity Theorems. SWBA to use similar triangles to solve problems. Duration: 2 Days	Similar Triangles	G.1.3.1-Use properties of congruence, correspondence, and similarity in problem solving settings involving 2 and 3 dimensional figures. G.1.3.1.1-Identify and/or use properties of congruent and similar polygons or solids. G.1.3.1.2-Identify and/or use proportional relationships in similar figures.
	Review Common Assessment Unit 8 Proportions and Similarity Duration: 1 Day						
Unit 8 12 Days	Test Common Assessment Unit 8 Proportions and Similarity Duration: 1 Day						
	Unit 9 Circles						
Estimated Unit Time Frames	**Big Ideas**	**Essential Questions**	**Concepts**	**Competencies**	**Lesson Objectives and Suggested Resources**	**Vocabulary**	**Standards**
Unit 9 **16 Days**	Spatial reasoning and visualization are ways to orient	How can a change in one measurement of a 2- or 3-	2- and 3-dimensional figures	Define, describe, and analyze 2- and 3-dimensional	Circle and Circumference - Suggested Text- Glencoe Geometry	Circle Center	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

	thinking about the physical world.	dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?		figures, their properties and relationships, including how a change in one measurement will affect other measurements of that figure.	(2010) Chapter 10 Section 10-1 (pgs 683 - 691) Objectives: SWBA to identify and use parts of a circle. SWBA to solve problems involving the circumference of a circle. Duration: 2 Days	Radius Chord Diameter Congruent circles Concentric circles Circumference Pi Inscribed Circumscribed	use the radius, diameter, segment, and/or tangent of a circle.
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Measuring Angles and Arcs Suggested Text-Glencoe Geometry (2010) Section 10-2 (pgs 692 - 700) Objectives: SWBA to identify central angles, major arcs, minor arcs and semi-circles, and find their measures. SWBA to find arc lengths. Duration: 3 Days	Central angle Arc Minor arc Major arc Semicircle Congruent arcs Adjacent arcs	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, 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.

	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Arcs and Chords-Suggested Text-Glencoe Geometry (2010) Section 10-3 (pgs 701- 708) Objectives: SWBA to recognize and use relationships between arcs and chords. SWBA to recognize and use relationships between arcs, chords, and diameters. Duration: 2 Days	Arcs Chords	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. G.1.1.1.3-Use chords, tangents, and secants to find missing arc measures or missing segment measures.
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Inscribed Angles Suggested Text-Glencoe Geometry (2010) Section 10-4 (pgs 709 - 716) Objectives: SWBA to find measures of inscribed angles. SWBA to find measures of angles	Inscribed angles intercepted arc	2.9.G.A-Identify and use properties and relations of geometric figures; create justifications for arguments related to geometric relations 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.

				of inscribed polygons. Duration: 2 Days		
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Tangents-Suggested Text- Glencoe Geometry (2010) Section 10-5 (pgs 718- 726) Objectives: SWBA to use the properties of tangents. SWBA to solve problems involving circumscribed polygons. Duration: 2 Days	Tangent Point of tangency Common tangent	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, segment, and/or tangent of a circle. G.1.1.1.3-Use chords, tangents, and secants to find missing arc measures or missing segment measures.
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Secants, Tangents and Angle Measures Suggested Text- Glencoe Geometry (2010) Section 10-6 (pgs 727 -735) Objectives: SWBA to find the measures of angles formed by lines-intersecting on or inside the circle.	Secant	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, segment, and/or tangent of a circle. G.1.1.1.3-Use chords, tangents, and secants to find missing arc measures or missing segment measures.

					SWBA to find the measures of angles formed by lines intersecting outside the circle. Duration: 3 Days		

	Review Common Assessment Unit 9 Circles Duration: 1 Day						

Unit 9 16 Days	Test Common Assessment Unit 9 Circles Duration: 1 Day						

Unit 10 Measurement in Two Dimensional Figures							

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 10 15 Days	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Areas of Parallelograms and Triangles Suggested Text-Glencoe Geometry (2010) Section 11-1 (pgs 760 - 770) Objectives: SWBA to find perimeters and areas of parallelograms. SWBA to find perimeters and	Base of a parallelogram Height of a parallelogram Base of a triangle Height of a triangle	G.2.3.2-Describe how a change in one dimension of a 3 dimensional figure affects other measurements of that figure. G.2.3.2.1-Describe how a change in the linear dimension of a figure affects its surface area or volume (e.g., How does changing the length of the edge of a cube affect the volume of the cube?).

				areas of triangles. Duration: 2 Days		
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Areas of Trapezoids, Rhombi, and Kites - Suggested Text-Glencoe Geometry (2010) Section 11-2 (pgs 773 - 780) Objectives: SWBA to find areas of trapezoids. SWBA to find areas of rhombi and kites. Duration: 2 Days	Height of a trapezoid	G.2.3.2-Describe how a change in one dimension of a 3?dimensional figure affects other measurements of that figure. G.2.3.2.1-Describe how a change in the linear dimension of a figure affects its surface area or volume (e.g., How does changing the length of the edge of a cube affect the volume of the cube?).
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure?	2- and 3-dimensional figures	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.	Areas of Circles and Sectors - Suggested Text-Glencoe Geometry (2010) Section 11-3 (pgs 782 - 788) Objectives: SWBA to find areas of circles. SWBA to find areas of sectors of circles. Duration: 2 Days	Sector of a circle Segment of a circle	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. 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.2.2.2.5-Find the area of a sector of a circle. G.2.3.2-Describe how a change in one dimension of a 3?dimensional figure affects other measurements of that

							figure. G.2.3.2.1-Describe how a change in the linear dimension of a figure affects its surface area or volume (e.g., How does changing the length of the edge of a cube affect the volume of the cube?).
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure	2- and 3-dimensional figures	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.	Areas of Regular Polygons and Composite Figures-Suggested Text-Glencoe Geometry (2010) Section 11-4 (pg 791-801) Objectives: SWBA to find areas of regular polygons. SWBA to find areas of composite figures. Duration: 3 Days	Center of a regular polygon Radius of a regular polygon Apothem Central angle of a regular polygon Composite figure	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. 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 circumference of an irregular figure. G.2.2.2.3-Find the side lengths of a polygon with a given perimeter to maximize the area of the polygon. G.2.2.2.4-Develop and/or use strategies to estimate the area of a compound/composite figure. G.2.3.2-Describe how a change in one dimension of a 3?dimensional figure affects other measurements of that figure. G.2.3.2.1-Describe how a change in the linear dimension of a figure affects its surface area or volume (e.g., How does changing the length of the edge of a cube affect the volume of the cube?).
	Some geometric relationships can be described and explored as	How can we represent the probability of an event using geometric	Geometric Probability	Apply geometric properties of length or area to represent	Geometric Probability - Suggested Text-Glencoe Geometry (2010)	Geometric probability	G.2.2.4-Apply probability to practical situations. G.2.2.4.1-Use area models to find probabilities.

	functional relationships.	properties of length or area?		and calculate probabilities.	Section 13-3 (pgs 915 - 922-) Objectives: SWBA to find probabilities by using length. SWBA to find probabilities by using areas. Duration: 4 Days		

	Review Common Assessment Unit 10 Measurement in Two Dimensions Duration: 1 Day
Unit 10 15 Days	Test Common Assessment Unit 10 Measurement in Two Dimensions Duration: 1 Day

Unit 11   Measurement Three-Dimensional Figures

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 11 17 Days	Spatial reasoning and visualization are ways to orient thinking about the physical	How can a change in one measurement of a 2- or 3- dimensional figure effect	2- and 3- dimensional figures	Use coordinates and algebraic techniques to interpret, represent, and	Surface Areas of Prisms and Cylinders - Suggested Text- Glencoe Geometry (2010) Chapter 12	Lateral face Lateral edge Base edge	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.2.2.2.2-Find the measurement of a

	world.	other measurements such as perimeter, area, surface area or volume of that figure		verify geometric relationships.	Section 12-2 (pgs 830 - 837) Objectives: SWBA to find lateral areas and surface areas of prisms. SWBA to find lateral areas and surface areas of cylinders. Duration: 3 Days	Altitude Height Lateral area Axis Composite solid	missing length, given the perimeter, circumference, or area. 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 a reference sheet. G.2.3.1.3-Find the measurement of a missing length, given the surface area or volume.
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure	2- and 3-dimensional figures	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships.	Surface Areas of Pyramids and Cones- Suggested Text-Glencoe Geometry (2010)-Section 12-3 (pgs 838 - 846) Objectives: SWBA to find lateral areas and surface areas of pyramids. SWBA to find lateral areas and surface areas of cones. Duration: 3 Days	Regular pyramid Slant height Right cone Oblique cone	G.1.2.1-Recognize and/or apply properties of angles, polygons, and polyhedra. G.1.2.1.5-Identify and/or use properties of pyramids and prisms. 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 a reference sheet. G.2.3.1.3-Find the measurement of a missing length, given the surface area or volume.
	Spatial reasoning and	How can a change in one	2- and 3-dimensional	Use coordinates	Volumes of Prisms and Cylinders -	Prisms and Cylinders	G.2.3.1-Use and/or develop procedures to determine or describe

	visualization are ways to orient thinking about the physical world.	measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure	figures	and algebraic techniques to interpret, represent, and verify geometric relationships.	Suggested Text- Glencoe Geometry (2010) Section 12-4 (pgs 847 - 854) Objectives: SWBA to find volumes of prisms. SWBA to find volumes of cylinders. Duration: 3 Days		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 a reference sheet. G.2.3.1.3-Find the measurement of a missing length, given the surface area or volume.
	Spatial reasoning and visualization are ways to orient thinking about the physical world.	How can a change in one measurement of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure	2- and 3-dimensional figures	Use coordinates and algebraic techniques to interpret, represent, and verify geometric relationships.	Volumes Pyramids and Cones - Suggested Text- Glencoe Geometry (2010) Section 12-5 (pgs 857 - 863) Objectives: SWBA to find volumes of pyramids. SWBA to find volumes of cones. Duration: 3 Days	Pyramids and Cones	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.2.3.1.2-Calculate the volume of prisms, cylinders, cones, pyramids, and/or spheres. Formulas are provided on a reference sheet. G.2.3.1.3-Find the measurement of a missing length, given the surface area or volume.
	Spatial reasoning and visualization are	How can a change in one measurement	2- and 3-dimensional figures	Use coordinates and algebraic	Surface Areas and Volumes of Spheres- Suggested	Great circle	G.1.1.1-Identify and/or use parts of circles and segments associated with circles, spheres, and cylinders.

	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
	ways to orient thinking about the physical world.	of a 2- or 3-dimensional figure effect other measurements such as perimeter, area, surface area or volume of that figure		techniques to interpret, represent, and verify geometric relationships	Text-Glencoe Geometry (2010)- Section 12-6 (pgs 864 - 871) Objectives: SWBA to find surface areas of spheres. SWBA to find volumes of spheres. Duration" 3 Days	Pole Hemisphere	G.1.1.1.4-Identify and/or use the properties of a sphere or cylinder. 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.2.2.2.2-Find the measurement of a missing length, given the perimeter, circumference, or area. 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 a reference sheet.

	Review Common Assessment Unit 11 Measurement in Three Dimensions Duration: 1 Day
Unit 11 17 Days	Test Common Assessment Unit 11 Measurement in Three Dimensions Duration: 1 Day

Unit 12   Preparing for Advanced Algebra

Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 12 **5 Days**	Numbers, measures, expressions, equations, and	How can you extend algebraic properties and	Algebraic properties and processes	Use algebraic properties and processes in mathematical	Factoring Polynomials - Suggested Text-Glencoe Algebra 2(2010) Section 0-3 (pgs P7-P8)	Factoring Polynomials	A2.1.2.2-Simplify expressions involving polynomials. A2.1.2.2.1-Factor algebraic expressions, including difference of

inequalities can represent mathematical situations and structures in many equivalent forms.	processes to quadratic, exponential and polynomial expressions and equations and then apply them to solve real world problems?		situations and apply them to solve real world problems.	Objectives: SWBA to factor polynomials by using various techniques Duration: 5 Days		squares and trinomials. Note: Trinomials limited to the form ax2+bx+c where a is not equal to 0.

During the course of the year, we will have at least 6 days scheduled for the use of the Classroom Diagnostic Tool for this course. Since these dates have not been scheduled, there may need to be adjustment to the day to day schedule when these testing dates are schedules in. Also, there needs to be 4 days build in for the PSSA or Keystone Exams. These 10 days will need to be distributed throughout the year thus totaling 180 instructional days.