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.

				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 574581) 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 A	ssessment Review C	oordinate Geome	try & Right Triangles Duration:1	Day	
Unit 1 21 Days		Test Unit 1 Comr	mon Assessment Co	ordinate Geometr	ry & Right Triangles Duration:1	1 Day	
			Unit 2 Buildir	ng 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	How can you use coordinates and algebraic	Geometric Representations	Use coordinates and algebraic techniques to interpret,	Points, Lines and Planes - Suggested Text-Glencoe Geometry (2010) Section 1-1 (pgs 5 to 13)	Undefined term Point	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.

SWBA to identify and model

Collinear

points, lines and planes.

SWBA to identify

geometric

relationships

verify geometric

relationships?

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

					Degree	
					2 08. 00	
					Right angle	
					Acute angle	
					Obtuse angle	
					Angle bisector	
Spatial	How can you	2- and 3-	Define,	Angles Relationships -	Adjacent angles	G.2.2.1-Use and/or compare
reasoning and visualization are ways to orient	explain the relationship between	dimensional figures	describe, and analyze 2- and 3-dimensional	Suggested Text-Glencoe Geometry (2010) Section 1-5 (pgs 46 - 55)	Linear pair	measurements of angles. G.2.2.1.1-Use properties of angles formed by intersecting lines to find the
thinking about	congruence		figures, their	30000011 3 (pgs 10 33)	Vertical angles	measures of missing angles.
the physical	and similarity		properties and	Objectives:		
world.	in both 2- and		relationships,		Complementary	
	3-dimensional figures?		including how	SWBA to identify and use	angles	
	liguresr		a change in one	special pairs of angles.	Supplementary	
			measurement	SWBA to identify	angles	
			will affect	perpendicular lines.	angles	
			other	perpendicular lines.	Perpendicular	
			measurements	Duration: 3 Days	- Ci perialcalai	
			of that figure.			
There are some	How can a	2- and 3-	Define,	Two Dimensional Figures -	Polygon	G.1.2.1-Recognize and/or apply
mathematical	change in one	dimensional	describe, and	Suggested Text-Glencoe		properties of angles, polygons, and
relationships	measurement	figures	analyze 2- and	Geometry (2010)	Vertex of a	polyhedra.
that are always	of a 2- or 3-		3-dimensional	Section 1-6 (pgs 56 - 66)	polygon	G.1.2.1.4-Identify and/or use
true and these	dimensional		figures, their			properties of regular polygons.
relationships	figure effect		properties and	Objectives:	Concave	G.2.3.2-Describe how a change in one
are used as the	other		relationships,			dimension of a 3 dimensional figure
rules of	measurements		including how	SWBA to identify and name	Convex	affects other measurements of that
arithmetic and	such as		a change in	polygons.		figure.
algebra and are useful for	perimeter,		one	CIMPA to find novimetor	n-gon	G.2.3.2.1-Describe how a change in the
writing	area, surface area or		measurement will affect	SWBA to find perimeter, circumference and area of		linear dimension of a figure affects its surface area or volume (e.g., How does
equivalent	volume of that		other	two dimensional figures.	Equilateral	changing the length of the edge of a
Equivalent	volume of that		otilei	two unitensional ligures.	<u> </u>	changing the length of the eage 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	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	Area 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.

		Review for Com	nmon Assessment (Unit 2 Building Blo	cks for Geometry Duration: 1 Da	Platonic solid Surface area Volume	
Unit 2 17 Days		Test Commo	on Assessment Unit	2 Building Blocks	for Geometry Duration: 1 Day		
			Unit 3 R	Reasoning and	d 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.

					Syllogism.	
				Duration: 3 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	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'			
	Review for Common Assessment Unit 3 Reasoning and Proof Duration: 1 Day									
Unit 3 11 Days	Test (Common Assessmen	t Unit 3 Reasoni	ng 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	Numbers,	How can a	2- and 3-	Define,	Parallel and Perpendicular	Parallel lines	G.2.2.1-Use and/or compare
12 Days	measures, expressions, equations, and	change in one measurement of a 2- or 3-	dimensional figures	describe, and analyze 2- and 3-dimensional	Lines/ Parallel Lines and Transversals Suggested Text-Glencoe	Skew lines	measurements of angles. G.2.2.1.2-Use properties of angles formed when two parallel lines are cut
	inequalities can represent	dimensional figure effect		figures, their properties and	Geometry (2010)- Chapter 3 Section 3-1 (pgs 171- 176)	Parallel planes	by a transversal to find the measures of missing angles.
	mathematical situations and	other measurements		relationships, including how	Objectives:	Transversal	
	structures in many	such as perimeter,		a change in one	SWBA to identify the	Interior angles	
	equivalent forms.	area, surface are or volume of that figure?		measurement will affect other	relationships between two lines or two planes.	Exterior angles	
		of that lighte:		measurements	SWBA to name angle pairs	Consecutive	
				of that figure.	formed by parallel lines and transversals.	interior angles	
					Duration: 2 Days	Alternate interior angles	
						Alternate	

					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	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.
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	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.

				invalid	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	conjecture. 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 Dista Suggested Text-Glenco Geometry (2010) Section 3-6 (pgs 213 - 2 Objectives: SWBA to recognize angle pairs that occur with parlines. SWBA to prove that two are parallel using angle relationships. Duration: 3 Days	e rallel	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 <i>i</i>	Assessment Unit 4	Parallels and Perp	pendiculars Duration:1 Da	ау	
Unit 4 12 Days	1	Test Common Ass	essment Unit 4 Pa	arallels and Perper	ndiculars Duration: 1 Day	у	
			Unit 5	Triangles Co	ngruence and Sim	ilarity	
Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives \\ and Suggested Resources	/ocabulary	Standards
Unit 5 14 Days	Spatial reasoning and visualization are ways to orient	How can a change in one measurement of a 2- or 3	Geometric Relations: Congruence and Similarity	Define, describe, and analyze 2- and 3-dimensional	Triangles/ Classifying Triangles - Suggested Text-	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
14 Days			_			Equiangular triangle	

the physical	figure effect		properties and	(2010) Chapter 4	Obtuse triangle	triangles.
world.	other		relationships,	Section 4-1(pgs 235		than great
	measurements		including how	-242)	Right Triangle	
	such as		a change in	,	MgHt Hungle	
	perimeter,		one	Objectives:	Equilateral triangle	
	area, surface		measurement	,	Lquilateral trialigie	
	area or		will affect	SWBA to identify	to control to the control of	
	volume of that		other	and classify	Isosceles triangle	
	figure?		measurements	triangles by angle		
			of that figure.	measures.	Scalene triangle	
				SWBA to identify		
				and classify		
				triangles by side		
				measures.		
				Dutation: 2 Days		
Spatial	How can a	Geometric	Define,	Angles of Triangles-	Auxiliary line	G.1.2.1-Recognize and/or apply
reasoning and	change in one	Relations:	describe, and	Suggested Text-		properties of angles, polygons, and
visualization are	measurement	Congruence and	analyze 2- and	Glencoe Geometry	Exterior angle	polyhedra.
ways to orient	of a 2- or 3-	Similarity	3-dimensional	(2010)		G.1.2.1.1-Identify and/or use
thinking about	dimensional		figures, their	Section 4-2 (pgs 244	Remote interior angles	properties of triangles.
the physical	figure effect		properties and	- 252)		
world.	other		relationships,		Flow proof	
	measurements		including how	Objectives:		
	such as		a change in			
	perimeter,		one	SWBA to apply the		
	area, surface		measurement	triangle angle sum		
	area or		will affect	theorem.		
	volume of that		other			
	figure?		measurements	SWBA to apply the		
			of that figure.	Exterior Angle		
				Theorem		
				Duration: 2 Days		
Mathematical	How do you	Geometric	Define and	Isosceles and	Legs of an isosceles	G.1.2.1-Recognize and/or apply
statements can	use the ideas	Relations:	describe types	Equilateral	triangle	properties of angles, polygons, and
be justified	of direct and	Congruence and	of geometrical	Triangles-		polyhedra.

c i r	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.	Vertex angle Base angles	G.1.2.1.3-Identify and/or use properties of isosceles and equilateral triangles.
s k t c	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.	Duration:2 Days 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		
	Re	eview Common Ass	sessment Unit 5	Congruent Triangl	les Duration: 1 Day		
Unit 5 14 Days	Те	st Common Ass	sessment Unit 5	Congruent Triangl	es Duration: 1 Day		
			Unit 6	Relationship	os in Triangles		
Estimated Unit Time Frames	Big Ideas	Essential Questions	Unit 6 Concepts	Relationship Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit Time	Big Ideas Spatial reasoning and				Lesson Objectives and Suggested	Vocabulary Perpendicular bisector	Standards G.1.2.1-Recognize and/or apply properties of angles, polygons, and
Unit Time Frames	Spatial reasoning and visualization are ways to orient	Questions How do you use the ideas of direct and indirect proof,	Concepts Geometric	Define, describe, and analyze 2- and 3-dimensional	Lesson Objectives and Suggested Resources Bisectors of Triangles - Suggested Text- Glencoe Geometry	,	G.1.2.1-Recognize and/or apply properties of angles, polygons, and polyhedra. G.1.2.1.1-Identify and/or use
Unit Time Frames Unit 6	Spatial reasoning and visualization are ways to orient thinking about the physical	Questions How do you use the ideas of direct and indirect proof, and counterexamples to	Concepts Geometric	Define, describe, and analyze 2- and 3-dimensional figures, their properties and	Lesson Objectives and Suggested Resources Bisectors of Triangles - Suggested Text- Glencoe Geometry (2010) Chapter 5 Section 5-1	Perpendicular bisector	G.1.2.1-Recognize and/or apply properties of angles, polygons, and polyhedra.
Unit Time Frames Unit 6	Spatial reasoning and visualization are ways to orient thinking about	Questions How do you use the ideas of direct and indirect proof, and counter-	Concepts Geometric	Define, describe, and analyze 2- and 3-dimensional figures, their	Lesson Objectives and Suggested Resources Bisectors of Triangles - Suggested Text- Glencoe Geometry (2010) Chapter 5	Perpendicular bisector Concurrent lines	G.1.2.1-Recognize and/or apply properties of angles, polygons, and polyhedra. G.1.2.1.1-Identify and/or use

SWBA to identify

perpendicular

bisectors in

triangles.

and use

measurement

measurements

of that figure.

will affect

other

conjectures?

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.	SWBA to identify and use angles bisectors in triangles. Duration: 2 Days 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	and apply properties of inequalities to the		
			of that figure.	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,	How do you use the ideas of direct and	Reasoning and Proof	Define and describe types	Indirect Proof Suggested Text-	Indirect reasoning	Standard: 2.4.G.A Write a formal proofs (direct proofs, indirect proofs, proofs by contradiction, use of
	expressions, equations, and	indirect and		of geometrical reasoning and	Glencoe Geometry (2010)	Indirect Proof	counter-examples, truth tables, etc.)
	inequalities can represent mathematical situations and structures in many equivalent forms.	and counter examples to verify valid conjectures and refute invalid conjectures?		proof using them to verify valid conjectures as they surface in the study of Geometry; develop a counter example to refute an invalid	(pgs. 351-358) Section 5-4 Objectives: SWBA to write indirect algebraic and/or geometric proofs Duration: 3 Days	Proof by Contradiction	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.
				conjecture			
		Review Com	nmon Assessment U	nit 6 Triangle Rela	ntionships Duration: 1 I	Day	
Unit 6 13 Days		Test Com	nmon Assessment U	nit 6 Triangle Rela	tionships Duration: 1	Day	
			Unit 7	Quadrilater	rals		
Estimated Unit Time Frames	Big Ideas	Essential Questions	Concepts	Competencies	Lesson Objectives and Suggested Resources	Vocabulary	Standards
Unit 7	Patterns exhibit	How can you	2- and 3-	Define,	Quadrilaterals/	Diagonal	G.1.2.1-Recognize and/or apply
16 Days	relationships that can be extended, described, and	use coordinates and algebraic techniques to	dimensional figures	describe, and analyze 2- and 3-dimensional figures, their	Angles of Polygons- Suggested Text- Glencoe Geometry (2010)		properties of angles, polygons, and polyhedra. G.1.2.1.4-Identify and/or use properties of regular polygons.
	generalized.	represent,		properties and	Section 6-1		

	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.		
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 sides and angles of parallelograms.	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.

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.	SWBA to determine whether parallelograms are rectangles. Duration: 2 Days 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

		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.
		Re	eview Common Asse	ssment Unit 7 Qu	adrilateral Duration: 1	Day	
Unit 7 16 Days		-	Test Common Assess	sment Unit 7 Qua	drilaterals Duration: 1	Day	
			Unit 8 Pr	oportions an	d 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	How can you use coordinates and algebraic techniques to represent interpret, and verify geometric	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:	Ratio Extended ratios Proportion Extremes Mans	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

				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 Cor	nmon Assessment (Jnit 8 Proportions	and Similarity Duration	n: 1 Day	
Unit 8 12 Days		Test Commo	on Assessment Unit	8 Proportions and	d Similarity Duration:	1 Day	
				Unit 9 Circle	es		
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-Identify, determine, and/or

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thinking about	dimensional		figures, their	(2010)	Radius	use the radius, diameter, segment,
the physical	figure effect		properties and	Chapter 10		and/or tangent of a circle.
world.	other .		relationships,	Section 10-1	Chord	
	measurements		including how	(pgs 683 - 691)		
	such as		a change in		Diameter	
	perimeter,		one	Objectives:		
	area, surface		measurement		Congruent circles	
	area or		will affect	SWBA to identify		
	volume of that		other	and use parts of a	Concentric circles	
	figure?		measurements	circle.	Concentrate en cies	
			of that figure.		Circumference	
				SWBA to solve	Circumerence	
				problems involving		
				the circumference	Pi	
				of a circle.		
					Inscribed	
				Duration: 2 Days		
					Circumscribed	
Spatial	How can a	2- and 3-	Define,	Measuring Angles	Central angle	G.1.1.1-Identify and/or use parts of
reasoning and	change in one	dimensional	describe, and	and Arcs Suggested		circles and segments associated with
visualization are	measurement	figures	analyze 2- and	Text-Glencoe	Arc	circles, spheres, and cylinders.
ways to orient	of a 2- or 3-		3-dimensional	Geometry (2010)		G.1.1.1.1-Identify, determine, and/or
thinking about	dimensional		figures, their	Section 10-2	Minor arc	use the radius, diameter, segment,
the physical	figure effect		properties and	(pgs 692 - 700)	Willion arc	and/or tangent of a circle.
world.	other		relationships,	, ,	Maioron	G.1.1.1.2-Identify, determine, and/or
	measurements		including how	Objectives:	Major arc	use the arcs, semicircles, sectors,
	such as		a change in	,		and/or angles of a circle.
	perimeter,		one	SWBA to identify	Semicircle	, ,
	area, surface		measurement	central angles,		
	area or		will affect	major arcs, minor	Congruent arcs	
	volume of that		other	arcs and semi-		
	figure?		measurements	circles, and find	Adjacent arcs	
	0		of that figure.	their measures.	-	
				SWBA to find arc		
				lengths.		
				- 0		
				Duration: 3 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.	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, 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	How can a	2- and 3-	Define,	Inscribed Angles	Inscribed angles	2.9.G.A-Identify and use properties
reasoning and	change in one	dimensional	describe, and	Suggested Text-		and relations of geometric figures;
visualization are	measurement	figures	analyze 2- and	Glencoe Geometry	intercepted arc	create justifications for arguments
ways to orient	of a 2- or 3-		3-dimensional	(2010)		related to geometric relations
thinking about	dimensional		figures, their	Section 10-4		G.1.1.1-Identify and/or use parts of
the physical	figure effect		properties and	(pgs 709 - 716)		circles and segments associated with
world.	other .		relationships,	01: .:		circles, spheres, and cylinders.
	measurements		including how	Objectives:		G.1.1.1.3-Use chords, tangents, and
	such as		a change in	CM/DA to find		secants to find missing arc measures
	perimeter, area, surface		one	SWBA to find measures of		or missing segment measures.
	area, surface		measurement will affect	inscribed angles.		
	volume of that		other	miscribed aligies.		
	figure?		measurements	SWBA to find		
			of that figure.	measures of angles		

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.	of inscribed polygons. Duration: 2 Days 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.	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.	Duration: 2 Days 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-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				
		Revie	ew Common Assessr	ment Unit 9 Circle	es 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	Spatial	How can a	2- and 3-	Define,	Areas of	Base of a parallelogram	G.2.3.2-Describe how a change in one
	reasoning and	change in one	dimensional	describe, and	Parallelograms and		dimension of a 3 dimensional figure
15 Days	visualization are	measurement	figures	analyze 2- and	Triangles Suggested	Height of a parallelogram	affects other measurements of that
15 Days	ways to orient	of a 2- or 3-		3-dimensional	Text-Glencoe		figure.
	thinking about	dimensional		figures, their	Geometry (2010)	Base of a triangle	G.2.3.2.1-Describe how a change in the
	the physical	figure effect		properties and	Section 11-1 (pgs	S	linear dimension of a figure affects its
	world.	other		relationships,	760 - 770)	Height of a triangle	surface area or volume (e.g., How does
		measurements		including how	Objectives:	Treight of a triangle	changing the length of the edge of a
		such as		a change in			cube affect the volume of the cube?).
		perimeter,		one	SWBA to find		
		area, surface		measurement	perimeters and		
		area or		will affect	areas of		
		volume of that		other	parallelograms.		
		figure?		measurements			
				of that figure.	SWBA to find		
					perimeters and		

				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

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	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?). 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	How can we represent the probability of an event using	Geometric Probability	Apply geometric properties of length or area	Geometric Probability - Suggested Text- Glencoe Geometry	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 Comm	non Assessment Unit	t 10 Measurement	in Two Dimensions Du	uration: 1 Day				
Unit 10 15 Days		Test Common Assessment Unit 10 Measurement in Two Dimensions Duration: 1 Day								
			Unit 11 Mea	surement Th	ree-Dimensiona	l 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-Find the measurement of a			

world.	other		verify	Section 12-2	Altitude	missing length, given the perimeter,
	measurements		geometric	(pgs 830 - 837)		circumference, or area.
	such as		relationships.		Height	G.2.3.1-Use and/or develop
	perimeter,			Objectives:	l	procedures to determine or describe
	area, surface			-	Lateral area	measures of surface area and/or
	area or			SWBA to find lateral	Laterararea	volume. (May require conversions
	volume of that			areas and surface	Audia	within the same system.)
	figure			areas of prisms.	Axis	G.2.3.1.1-Calculate the surface area of
				,		prisms, cylinders, cones, pyramids,
				SWBA to find lateral	Composite solid	and/or spheres. Formulas are provided
				areas and surface		on a reference sheet.
				areas of cylinders.		G.2.3.1.3-Find the measurement of a
						missing length, given the surface area
				Duration: 3 Days		or volume.
Spatial	How can a	2- and 3-	Use	Surface Areas of	Regular pyramid	G.1.2.1-Recognize and/or apply
reasoning and	change in one	dimensional	coordinates	Pyramids and	, and the second second	properties of angles, polygons, and
visualization are	measurement	figures	and algebraic	Cones- Suggested	Slant height	polyhedra.
ways to orient	of a 2- or 3-	0	techniques to	Text-Glencoe	Sidire ricigire	G.1.2.1.5-Identify and/or use
thinking about	dimensional		interpret,	Geometry (2010)-	Right cone	properties of pyramids and prisms.
the physical	figure effect		represent, and	Section 12-3	Right cone	G.2.3.1-Use and/or develop
world.	other		verify	(pgs 838 - 846)		procedures to determine or describe
	measurements		geometric	,	Oblique cone	measures of surface area and/or
	such as		relationships.			volume. (May require conversions
	perimeter,					within the same system.)
	area, surface			Objectives:		G.2.3.1.1-Calculate the surface area of
	area or					prisms, cylinders, cones, pyramids,
	volume of that			SWBA to find lateral		and/or spheres. Formulas are provided
	figure			areas and surface		on a reference sheet.
	0			areas of pyramids.		G.2.3.1.3-Find the measurement of a
						missing length, given the surface area
				SWBA to find lateral		or volume.
				areas and surface		
				areas of cones.		
				Duration: 3 Days		
Spatial	How can a	2- and 3-	Use	Volumes of Prisms	Prisms and Cylinders	G.2.3.1-Use and/or develop
reasoning and	change in one	dimensional	coordinates	and Cylinders -		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.

	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-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	-	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-Glenc Algebra 2(2010) Section 0-3 (pgs P7-P	oe Polynomials	A2.1.2.2-Simplify expressions involving polynomials. A2.1.2.2.1-Factor algebraic expressions, including difference of				

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

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.