Discovering Geometry Curiculum Map 2010-2011

Chapter 0 Geometric Art

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
0.1	Geometry in Nature and Art	G.5.D	**Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		
0.2	Line Designs	G.5.D	**Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		
0.3	Circle Designs	G.3.I G.5.D	Explain and **perform constructions related to the circle. Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		
0.4	Op Art	G.5.D	**Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		
0.5	Knot Designs	G.5.D	**Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		
0.6	Islamic Tile Designs				
				Total days with assessments	0

Essential Understandings:

All components of unit zero are covered in subsequent chapters. It is recommended to begin at unit 1 and return to unit zero later in the semester if time allows.

Chapter 1	Introducing Geometry				
Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
1.1	Building Blocks of Geometry	G.7.E	**Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.**		2
	Algebra Skils 1: Midpoint	G.4.B	**Determine the coordinates of a point that is described geometrically.**		0.5
1.2	Poolroom Math	G.7.E	**Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.**	Emphasize how to use a protractor	0.5
1.3	What's a Widget?	G.1.E G.7.C	**Identify errors or gaps in a mathematical argument and develop counterexamples to refute invalid statements about geometric relationships. Evaluate a solution for reasonableness, verify it's accuracy, and interpret the solution in the context of the original problem.**		2
1.4	Polygons				1
1.5	Triangles and Special Quadrilaterals	G.1.E	**Identify errors or gaps in a mathematical argument and develop counterexamples to refute invalid statements about geometric relationships.**	second day could include a quiz	2
1.6	Circles				1
1.7	A Picture is Worth a 1000 Words	G.7.B	**Select and apply strategies to solve problems.**		1
1.8	Space Geometry	G.2.D G.3.K	**Describe the intersections of lines in the plane and in space, of lines and planes, and of planes and planes. Analyze cross sections of cubes, prisms, pyramids, and spheres and identify the resulting shapes.**		1
				Total instructional days	11
Essential Understandings:			**Vocabulary, symbols and notation**	Review and assess	3
				Total days	14
				Estimated finish date	Sept. 30

Chapter 2	Reasoning in Geometry				
Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
2.1	Inductive Reasoning	G.1.B G.7.B G.7.D G.7.H	Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counter example. **Select and apply strategies to solve problems.** Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems. Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.		1
2.2	Deductive Reasoning	G.1.A G.1 C	**Distinguish between deductive and inductive reasoning. Use deductive reasoning to prove that a valid geometric statement is true.**		1
2.3	Finding the nth term	G.7.A G.7.B G.7.E	**Analyze a problem situation and represent it mathematically. Select and apply strategis to solve problems. Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.**		1
2.4	Mathematical Modeling	G.7.A G.7.B G.7.H	**Analyze a problem situation and represent it mathematically. Select and apply strategis to solve problems.** Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.		0
2.5	Angle Relationships	G.1.A G.1 C G.2.B G.7.H	**Distinguish between deductive and inductive reasoning. Use deductive reasoning to prove that a valid geometric statement is true. Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.** Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.		1
2.6	Special Angles on Parallel Lines	G.1.A G.1.B G.2.A G.2.B G.7 E	**Distinguish between deductive and inductive reasoning.** Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counter example. **Know, prove, and apply theorems about parallel and perpendicular lines. Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal. Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.**		2
	Using Algebra Skills: Slope				1

Total instructional days	7
Review and assess	3
Total days	10
Estimated finish date	Oct.15

Essential Understandings:

Distinguish between inductive and deductive reasoning. Angle relationships and vocabulary

Chapter 3 **Using Tools of Geometry**

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
3.1	Duplicating Segments and angles			How can we utilize technology in this chapter? (Sketchpad)	1
3.2	Constructing Perpendicular Bisectors	G.2.C	Explain and **perform basic compass and straight edge constructions related to parallel and perpendicular lines.**		1
3.3	Constructing Perpendiculars to a Line	G.2.C	Explain and **perform basic compass and straight edge constructions related to parallel and perpendicular lines.**		2
3.4	Constructing Angle Bisectors				1
3.5	Constructing Parallel Lines	G.2.C	Explain and **perform basic compass and straight edge constructions related to parallel and perpendicular lines.**		1
	Algebra Skills 3: Slopes of Parallel and Perpendicular Lines	G.4.C	Verify and **apply properties of triangles and quadrilaterals in the coordinate plane.**		2
3.6	Construction Problems				0
3.7	Constructing Points of Concurrency	G.3.A G.3.I	**Know,** explain, **and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.** Explain **and perform constructions related to the circle.**		2
3.8	The Centroid	G.3.A	**Know**, explain, **and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.**		1
	Exploration: the Euler Line	G.3.A	**Know**, explain, **and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.**		0
				Total instructional days	11
				Review and assess	3
				Total days	14
				Estimated finish date	Nov. 3

Essential Understandings:

Students should be able to understand and perform all basic constructions. Understand slope of parallel and perpendicular lines.

Chapter 4 Discovering and Proving Triangle Properties

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
4.1	Triangle Sum Conjecture	G.1.B G.3.A G.6.E G.7.C	Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counter example. **Know**, explain, and **apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle. Use different degrees of precision in measurement, explain the reason for using a certain degree of precision, and apply estimation strategies to obtain reasonable measurements with appropriate precision for a given purpose. Evaluate a solution for reasonableness, verify it's accuracy, and interpret the solution in the context of the original problem.**		1
4.2	Properties of Special Triangles	G.1.D G 2.B G.3.A G.7.D	**Write the converse, inverse, and contrapositive of a valid proposition and determine their validity**. **Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal. Know,** explain, **and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.** Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.		1
	Algebra Skills 4: Writing Linear Equations	G.4.A	**Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line.**		1
4.3	Triangle Inequalities	G.3.A	**Know**, explain, **and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.**		1
4.4	Congruence Shortcuts (SSS,SAS)	G.3.B	**Determine and prove triangle congruence, triangle similarity, and other properties of triangles.**	See 13.1 Can we work formal proof in here?	1
4.5	Other Congruence Shortcuts (ASA)	G.3.B	**Determine and prove triangle congruence, triangle similarity, and other properties of triangles.**		1
4.6	Corresponding Parts of Congruent Triangles	G.2.D G.3.B G.7.B	**Describe the intersections of lines in the plane and in space, of lines and planes, and of planes and planes. Determine and prove triangle congruence, triangle similarity, and other properties of triangles. Select and apply strategis to solve problems.**		1

4.7	Flowchart Thinking	G.1.C G.7.G G.7.H	Use deductive reasoning to prove that a valid geometric statement is true. Synthesize information to draw conclusions and evaluate the arguments and conclusions of others. Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	See 13.2	1.5
4.8	Proving Isosceles Triangle Conjectures	G.1.C G.3.A G.7.H	Use deductive reasoning to prove that a valid geometric statement is true. **Know,** explain, and **apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.** Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	See 13.3	1.5
				Total instructional days	10
Essential Understandings:			**Understand basic properties of triangles.**	Review and assess	3
			Determine and prove trinagle congruence	Total days	13
				Estimated finish date	24-Nov

Chapter 5 Discovering and Proving Polygon Properties

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
5.1	Polygon Sum Conjecture	G.3.G G.7 H	**Know, prove, and apply theorems about properties of quadrilaterals and other polygons.** Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.		1
5.2	Exterior Angles of a Polygon	G.1.B G.2.B G.3.G G.7.D	Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counter example. **Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal. Know, prove, and apply theorems about properties of quadrilaterals and other polygons.** Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.		1
	Exploration: Star Polygons	G.2.B	**Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.**		0
5.3	Kite and Trapezoid Properties	G.3.G	**Know, prove, and apply theorems about properties of quadrilaterals and other polygons.**		2
5.4	Properties of Midsegments	G.3.A G.3.G G.4.B G.4.C	**Know**, explain, and **apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle. Know, prove, and apply theorems about properties of quadrilaterals and other polygons. Determine the coordinates of a point that is described geometrically**. Verify and apply properties of triangles and quadrilaterals in the coordinate plane.		2
5.5	Properties of Parallelograms	G.2.A G.3.F	**Know, prove, and apply theorems about parallel and perpendicular lines. Know, prove and apply basic theorems about parallelograms**.	Introduce Vectors	1
	Algebra Skills 5: Solving Systems of Linear Equations	G.4.A G.4 B G.7.A G.7.E	**Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line. Determine the coordinates of a point that is described geometrically. Analyze a problem situation and represent it mathematically. Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics**		2
5.6	Properties of Special Parallelograms	G.2.A G.3.F G.4.B	**Know, prove, and apply theorems about parallel and perpendicular lines. Know, prove and apply basic theorems about parallelograms. Determine the coordinates of a point that is described geometrically**		1

5.7	Proving Quadrilateral Properties	G.1.C G.2.A G.3.F G.7.B	**Use deductive reasoning to prove that a valid geometric statement is true. Know, prove, and apply theorems about parallel and perpendicular lines. Know, prove and apply basic theorems about parallelograms. Select and apply strategies to solve problems.**	See 13.4	2
				Total instructional days	12
				Review and assess	3
				Total days	15
				Estimated finish date	17-Dec

Essential Understandings:

Understand basic properties of quadrilaterals

Proving properties of quadrilaterals

Chapter 6 Discovering and Proving Circle Properties

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
6.1	Chord Properties	G.3.H G.3.I	**Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.** Explain and **perform constructions related to the circle.**		2
6.2	Tangent Properties	G.3.H G.3.I	**Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.** Explain and **perform constructions related to the circle.**		1
6.3	Arcs and Angles	G.1.B G.3.H G.7.D	Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counter example. **Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.** Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems		2
6.4	Proving Circle Conjectures	G.1.C G.3.H G.7.H	**Use deductive reasoning to prove that a valid geometric statement is true. Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.** Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	2nd day can include a quiz	2
	Algebra Skills 6: Finding the Circumcenter	G.4.A	**Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line.**		0
6.5	The Circumference/Diameter Ratio	G.3.H G.6.E	**Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles. Use different degrees of precision in measurement, explain the reason for using a certain degree of precision, and apply estimation strategies to obtain reasonable measurements with appropriate precision for a given purpose.**	Make sure students know how to express answer in terms of pi	1
6.6	Around the World				1
6.7	Arc Length	G.6.A	Derive and **apply formulas for arc length and area of a sector of a circle.**		1
				Total instructional days	10
				Review and assess	3
				Total days	13
				Estimated finish date	20-Jan

Essential Understandings:

Understand basic properties of circles.

Vocabulary

Unit 6 should conclude semester 1. You should have appox. 6 days for review and finals at this pace

Chapter 7 Transformations and Tessellations

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
7.1	Transformations and Symmetry	G.5.A G.5.B G.5.D	**Sketch results of transformations and compositions of transformations for a given two-dimensional figure on the coordinate plane, and describe the rule(s) for performing translations or for performing reflections about the coordinate axis or the line y=x. Determine and apply properties of transformations. Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		1
7.2	Properties of Isometries	G.5.A G.5.B G.5.D	**Sketch results of transformations and compositions of transformations for a given two-dimensional figure on the coordinate plane, and describe the rule(s) for performing translations or for performing reflections about the coordinate axis or the line y=x. Determine and apply properties of transformations. Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		1
7.3	Compositions of Transformations	G.5.A G.5.B G.5.C G.5.D	**Sketch results of transformations and compositions of transformations for a given two-dimensional figure on the coordinate plane, and describe the rule(s) for performing translations or for performing reflections about the coordinate axis or the line y=x. Determine and apply properties of transformations. Given two congruent or similar figures in a coordinate plane, describe a composition of translations, relections, rotations and dilations that superimpose one figure on the other. Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.**		1
7.4	Tessellations with Regular Polygons	G.3.G G.5.B	**Know, prove, and apply theorems about properties of quadrilaterals and other polygons. Determine and apply properties of transformations.**		0
7.5	Tessellations With Non-Regular Polygons	G.3.G G.5.B	**Know, prove, and apply theorems about properties of quadrilaterals and other polygons. Determine and apply properties of transformations.**		0
7.6	Tessellations Using Only Translations	G.5.B	**Determine and apply properties of transformations.**		0
7.7	Tessellations That Use Rotations	G.5.B	**Determine and apply properties of transformations.**		0

7.8	Tessellations That Use Glide-Reflections	G.5.B	**Determine and apply properties of transformations.**		0
	Algebra skills 7: Finding the Orthocenter and Centroid	G.4.A G.4.B G.4.C	**Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line. Determine the coordinates of a point that is described geometrically.** Verify and **apply properties of triangles and quadrilaterals in the coordinate plane**		
				Total instructional days	3
Essential Understandings:			**Understand and apply the basic transformations of translation, rotation and reflection** **See section 11.1 for dilation**	Review and assess	3
				Total days	6
				Estimated finish date	9-Feb

Chapter 8 Area

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
8.1	Areas of Rectangles and Parallelograms				1
8.2	Areas of Triangles, Trapezoids and Kites				1
8.3	Area Problems				1
8.4	Areas of Regular Polygons				1
	Exploration: Picks Formula	G.7.D	Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.		0
8.5	Areas of Circles				1
8.6	Any Way You Slice It	G.6.A	Derive and **apply formulas for arc length and area of a sector of a circle**.		2
8.7	Surface Area	G.6.C	**Apply formulas for surface area and volume of three-dimensional figures to solve problems**		2
				Total instructional days	9
				Review and assess	3
				Total days	12
				Estimated finish date	3-Mar

Essential Understandings:

Understand and apply formula's for area, arc length, area of a sector of a circle, surface area of three-dimensional figures

Chapter 9 The Pythagorean Theorem

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
	Using Your Algebra Skills 8: Radical Expressions Page 473			Spend two days on simplifying radical expressions prior to beginning unit 9. Show students what it meand to rationalize the denominator.	2
9.1	The Theorem of Pythagoras	G.1.C G.3.D G.7.F	**Use deductive reasoning to prove that a valid geometric statement is true. Know,** prove, **and apply the Pythagorean Theorem and its converse.** Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	Apply beyond a basic right triangle. (How to find the diagonal in a box)	1
9.2	The Converse of the Pythagorean Theorem	G.1.B G.1.D G.3.D	Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counter example. **Write the converse, inverse, and contrapositive of a valid proposition and determine their validity. Know,** prove, **and apply the Pythagorean Theorem and its converse.**		1
9.3	Two Special Right Triangles	G.1.B G.3.C	Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counter example. **Use properties of special right triangles (30-60-90 and 45-45-90) to solve problems**		2
9.4	Story Problems	G.3.D	**Know,** prove, **and apply the Pythagorean Theorem and its converse.**		1
9.5	Distance in Coordinate Geometry	G.3.D G.4.D G.7.D	**Know,** prove, **and apply the Pythagorean Theorem and its converse. Determine the equation of a circle that is described geometrically in the coordinate plane and, given equations for a circle and a line, determine the coordinates of their intersection(s).** Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.		1
9.6	Circles and the Pythagorean Theorem	G.3.C G.3.D	**Use properties of special right triangles (30-60-90 and 45-45-90) to solve problems. Know,** prove**, and apply the Pythagorean Theorem and its converse**		0
				Total instructional days	8
				Review and assess	3
				Total days	11
				Estimated finish date	21-Mar

Essential Understandings:

Know and apply the Pythagorean Thm and its Converse. Understand and apply properties of 30-60 and 45-45 right triangles. Solve problems using these properties.

Chapter 10 Volume

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
10.1	Geometry of Solids	G.3.J G.7.E	**Describe prisms, pyramids, parallelepipeds, tetrahedra, and regular polyhedra in terms of their faces, edges, vertices, and properties. Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.**		1
	Exploration: Eulers Formulas for Polyhedrons	G.3.J	**Describe prisms, pyramids, parallelepipeds, tetrahedra, and regular polyhedra in terms of their faces, edges, vertices, and properties.**		0
10.2	Volume of Prisms and Cylinders	G.6.C	**Apply formulas for surface area and volume of three-dimensional figures to solve problems**		1
10.3	Volumes of Pyramids and Cones	G.6.C	**Apply formulas for surface area and volume of three-dimensional figures to solve problems**		1
	Exploration: 5 Platonic Sol	G.3.J	**Describe prisms, pyramids, parallelepipeds, tetrahedra, and regular polyhedra in terms of their faces, edges, vertices, and properties.**	This section is optional. It can be done if time permits. 2-3 days may be needed.	0
10.4	Volume Problems	G.6.C	**Apply formulas for surface area and volume of three-dimensional figures to solve problems**		1
10.5	Displacement and Density	G.6.C	**Apply formulas for surface area and volume of three-dimensional figures to solve problems**		1
10.6	Volume of a Sphere	G.6.C	**Apply formulas for surface area and volume of three-dimensional figures to solve problems**		1.5
10.7	Surface Area of a Sphere	G.6.C	**Apply formulas for surface area and volume of three-dimensional figures to solve problems**		1.5
				Total instructional days	8
				Review and assess	3
				Total days	11
				Estimated finish date	18-Apr

Essential Understandings:

Understand and apply formulas for surface area and volume of three-dimensional figures

Chapter 11 Similarity

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
	Using Your Algebra Skills 9: Proportion and Reasoning				1
11.1	Similar Polygons				1
11.2	Similar Triangles	G.3.B	**Determine and prove triangle congruence, triangle similarity, and other properties of triangles.**		1
11.3	Indirect Measurement with Similar Triangles				1
11.4	Corresponding Parts of Similar Triangles	G.3.B G.7.F	**Determine and prove triangle congruence, triangle similarity, and other properties of triangles.** Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	See section 13.7	1.5
11.5	Proportions with Area and Volume	G.6.D	Predict and **verify the effect that changing one, two or three linear dimensions has on perimeter, area, volume,or surface area of two-and three-dimensional figures.**		1.5
11.6	Proportional Segments Between Parallel Lines				0
	Exploration: Two More forms of Valid Reasoning	G.1.D	**Write the converse, inverse, and contrapositive of a valid proposition and determine their validity.**		0
				Total instructional days	7
				Review and assess	3
				Total days	10
				Estimated finish date	3-May

Essential Understandings:

Understand and apply properties of similar triangles. Understand how the proportion between area and volume change as a linear measurement changes

Chapter 12 Trigonometry

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
12.1	Trigonometric Ratios	G.3.E G.6.E	**Solve problems involving the basic trigonometric ratios of sine, cosine and tangent. Use different degrees of precision in measurement, explain the reason for using a certain degree of precision, and apply estimation strategies to obtain reasonable measurements with appropriate precision for a given purpose.**		3
12.2	Problem Solving with Right triangles	G.3.E G.7.A	**Solve problems involving the basic trigonometric ratios of sine, cosine and tangent. Analyze a problem situation and represent it mathematically.**		3
12.3	The Law of Sines			Spend time a desired	
12.4	The Law of Cosines			Spend time a desired	
12.5	Problem Solving with Trigonometry			Spend time a desired	
				Total instructional days	6
				Review and assess	2
				Total days	8
				Estimated finish date	16-May

Essential Understandings:

Understand basic definitions of sine, cosine, tangent ratio's. Solve problems involving basic sine, cosine, tangent ratios.

Complete portions of unit 13 that were not incorporated along the way.

Options for use of any extra time:
- **Prep for Geom EOC exam**
- **Prep for teacher generated final**
- **Review essential algebra skills to prep students for Algebra II (systems of eq, quadratics, radicals,….)**

Chapter 13 Geometry as a Mathematical System

Section	Description	PE #	Performance Expectation	Lesson Notes	Time (Days)
13.1	The Premises of Geometry	G.1.C G.1.F G.7.E	**Use deductive reasoning to prove that a valid geometric statement is true.** Distinguish between definitions and undefined geometric terms and **explain the role of definitions, undefined terms, postulates (axioms), and theorems. Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.**	As time permits	
13.2	Planning a Geometry Proof	G.1.C G.1.F G.2.A G.2.B G.7.G G.7.H	**Use deductive reasoning to prove that a valid geometric statement is true.** Distinguish between definitions and undefined geometric terms and **explain the role of definitions, undefined terms, postulates (axioms), and theorems. Know, prove, and apply theorems about parallel and perpendicular lines. Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal. Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.** Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	As time permits	
13.3	Triangle Proofs	G.1.C G.1.F G.3.A G.3.B G.7.H	**Use deductive reasoning to prove that a valid geometric statement is true.** Distinguish between definitions and undefined geometric terms and **explain the role of definitions, undefined terms, postulates (axioms), and theorems. Know,** explain, **and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle. Determine and prove triangle congruence, triangle similarity, and other properties of triangles.** Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	As time permits	
13.4	Quadrilateral Proofs	G.3.F G.3.G	**Know, prove and apply basic theorems about parallelograms. Know, prove, and apply theorems about properties of quadrilaterals and other polygons.**	As time permits	
13.5	Indirect Proof			As time permits	
13.6	Circle Proofs	G.1.F G.3.H	Distinguish between definitions and undefined geometric terms and **explain the role of definitions, undefined terms, postulates (axioms), and theorems. Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.**	As time permits	

13.7	Similarity Proofs	G.1.F G.3.B	Distinguish between definitions and undefined geometric terms and **explain the role of definitions, undefined terms, postulates (axioms), and theorems. Determine and prove triangle congruence, triangle similarity, and other properties of triangles.**	As time permits	
	Algebra skills 10: Coordinate Proof	G.4.C	Verify and **apply properties of triangles and quadrilaterals in the coordinate plane.**	As time permits	
	Exploration: Non-Eulcidean Geometries	G.6.B	Analyze distance and angle measures on a sphere and apply these measurements to the geometry of the earth.		

Total instructional days	
Review and assess	
Total days	
Estimated finish date	

Essential Understandings: