

Teacher: Year: 2017-18  
 CORE  
 Geometry  
 Honors  
 Course: Month: All Months  
 Geometry  
 Honors

S Unit 1 -  
Tools of  
Geometry

e	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
p	Why do we measure?	1.1 – Points, Lines, and Planes	1.1 - Identify and model points, lines, and planes	undefined term	obtuse angle	Quiz - 1.1-1.4	Textbook	M11.C.1.4-Solve problems involving right triangles using the Pythagorean Theorem. (Reference: 2.10.11.B)
t		1.2 – Linear Measure	1.1 - Identify intersecting lines and planes	point	adjacent angles	Quiz - 1.5-1.7	Publisher Resources	
e		1.3 – Distance and Midpoints	1.2 - Measure segments and calculate with measures	line	linear pair	Unit 1 Test - 1.1-1.7		
m		1.4 – Angle Measure	1.3 - Find the distance between two points and find the midpoint of a segment	plane	vertical angles			
b		1.5 – Angle Relationships	1.4 - Measure and classify angles	collinear	complementary angles			
e		1.6 – Two-Dimensional Figures	1.4 - Identify and use congruent angles and the bisector of an angle	coplaner	supplementary angles			
r		1.7 – Three-Dimensional Figures	1.5 - Identify and use special pairs of angles	line segment	perpendicular			
			1.5 - Identify perpendicular lines	betweenness of points	polygon			
			1.6 - Identify and name polygons	congruent segments	equilateral polygon			
			1.6 - Find perimeter, circumference, and area of two dimensional figures	construction	regular polygon			
			1.7 - Identify and name three-dimensional figures	distance	perimeter			
			1.7 - Find surface area and volume	irrational number	circumference			
				midpoint	area			

segment  
bisector  
ray  
angle  
vertex  
degree  
right angle  
acute angle  
surface area

polyhedron  
face, edge  
prism  
base  
pyramid  
cylinder  
cone  
sphere

M11.B.2.3-Describe how a change in one dimension of a figure (2 or 3 dimensional) affects other measurements of that figure. (Reference: 2.3.8.E)

volume  
regular  
polyhedron  
Platonic solid

Unit 2 -  
Reasoning  
and Proof

Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
Why is it important to be able to think logically?	2.1 – Induc. Reasoning and Conjec.	2.1 - Make conjectures based on inductive reasoning.	Inductive Reasoning	Postulate	Quiz - 2.1-2.4	Textbook	
	2.2 - Logic	2.1 - Find counterexamples	Conjecture	Axiom	Quiz - 2.5-2.8	Publisher Resources	
	2.3 – Conditional Statements	2.2 - Determine truth values of negations.	Counterexample	Proof	Unit 2 Test - 2.1-2.8		
	2.4 – Deductive Reasoning	2.2 - Represent conjunctions and disjunctions using Venn diagrams	Statement	Theorem			
	2.5 – Postulates and Para. Proofs	2.3 - Analyze statements in if-then form	Truth Value	Deductive Argument			
	2.6 – Algebraic Proof	2.3 - Write converses, inverses, and contrapositives	Negation	Paragraph Proof			
	2.7 – Proving Segment Relationships	2.4 - Use the Law of Detachment	Compound Statement	Informal Proof			
	2.8 – Proving Angle Relationships	2.4 - Use the Law of Syllogism	Conjunction	Algebraic Proof			

2.5 - Identify and use basic postulates about points, lines, and planes	Disjunction	Two-Column Proof
2.5 - Write paragraph proofs	Truth Table	Formal Proof
2.6 - Use algebra to write two-column proofs	Conditional Statement	
2.6 - Use properties of equality to write geometric proofs	If-Then Statement	
2.7 - Write proofs involving segment addition	Conclusion	
2.7 - Write proofs involving congruence	Related Concepts	
2.8 - Write proofs involving supplementary and complementary angles	Converse	
2.8 - Write proofs involving congruent and right angles	Inverse	
	Contrapositive	
	Logically Equivalent	
	Deductive Reasoning	
	Valid	
	Law of Detachment	
	Law of Syllogism	

O Unit 3 -  
Parallel and  
Perpendicular Lines

Content	Essential Questions						
	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
Why do we have undefined terms such	3.1 – Parallel Lines and Transversals	3.1 - Identify relationships between two lines or two planes	Parallel Lines	Quiz - 3.1-3.3		Textbook	M11.B.2.1-Use and/or compare measurements of angles. (Reference: 2.3.11.a, 2.3.11.B)

o	as point and line? How can we use these terms?	3.2 – Angles and Parallel Lines	3.1 - Name angle pairs formed by parallel lines and transversals	Parallel Planes	Quiz - 3.4-3.6	Publisher Resources	M11.C.1.3-Use properties of congruence, correspondence and similarity in problem-solving settings involving two- and three-dimensional figures. (Reference: 2.9.11.B)
b		3.3 – Slopes of Lines	3.2 - Use theorems to determine the relationships between specific pairs of angles	Skew Lines	Unit 3 Test - 3.1-3.6		
e		3.4 – Equations of Lines	3.2 - Use algebra to find angle measurements	Transversal			
r		3.5 – Proving Lines Parallel	3.3 - Find slopes of lines	Interior Angles			
		3.6 – Perpendiculars and Distance	3.3 - Use slope to identify parallel and perpendicular lines	Exterior Angles			
			3.4 - Write an equation of a line given information about the graph	Consecutive Interior Angles			
			3.4 - Solve problems by writing equations	Alternate Interior/Exterior Angles			
			3.5 - Recognize angle pairs that occur with parallel lines	Corresponding Angles			
			3.5 - Prove that two lines are parallel	Slope			
			3.6 - Find the distance between a point and a line	Rate of Change			
			3.6 - Find the distance between two parallel lines	Slope-Intercept Form Point-Slope Form Equidistant			

N Unit 4 -  
Congruent  
Triangles

o	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
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v	How can you tell if two objects are congruent?	4.1 – Classifying Triangles	4.1 - Identify and classify triangles by angle measures and side measures	Acute Triangle	Legs of an Isosceles Triangle	Quiz - 4.1-4.4	Textbook	M11.C.1.2-Recognize and/or apply properties of angles, triangles, and quadrilaterals. (Reference: 2.9.8.D, 2.9.11.C)
e		4.2 – Angles of Triangles	4.2 - Apply the triangle-angle sum theorem	Equilateral Triangle	Vertex Angle	Quiz - 4.5-4.7	Publisher Resources	M11.B.2.1-Use and/or compare measurements of angles. (Reference: 2.3.11.a, 2.3.11.B)
m		4.3 – Congruent Triangles	4.2 - Apply the exterior angle theorem	Obtuse Triangle	Base Angles	Unit 4 Test - 4.1-4.7		M11.C.1.3-Use properties of congruence, correspondence and similarity in problem-solving settings involving two- and three-dimensional figures. (Reference: 2.9.11.B)
b		4.4 – Proving Cong. Tri – SSS, SAS	4.3 - Name and use corresponding parts of congruent triangles	Right Triangle	Transformation			
e		4.5 – Proving Cong. Tri.- ASA, AAS	4.3 - Prove triangles are congruent using the definition of congruence	Equiangular Triangle	Preimage			
r		4.6 – Isosceles and Equilateral Tri. 4.7 – Congruence Transformations	4.4 - Use SSS and SAS postulates to test for triangle congruence 4.5 - Use the ASA and AAS postulates to test for triangle congruence 4.6 - Use properties of isosceles and equilateral triangles 4.7 - Identify reflections, translations, and rotations 4.7 - Verify congruence after a congruence transformation	Isosceles Triangle Scalene Triangle Auxiliary Line Exterior Angle Remote Interior Angle Flow Proof Corollary Congruent Congruent Polygon Corresponding Parts Included Angle	Image Congruence Transformation Isometry Reflection Translation Rotation			

D Unit 5 -  
Relationship  
s in  
Triangles

e	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
c	How are the sides and angles of a triangle related?	5.1 – Bisectors of Triangles	<b>5.1 - Identify and use perpendicular bisectors in triangles</b>	Perpendicular Bisector	Quiz - 5.1-5.3		Textbook	M11.C.1.2-Recognize and/or apply properties of angles, triangles, and quadrilaterals. (Reference: 2.9.8.D, 2.9.11.C)
e		5.2 – Medians and Altitudes of Tri.	5.1 - Identify and use angle bisectors in triangles	Point of Concurrency	Quiz - 5.4-5.6		Publisher Resources	M11.B.2.1-Use and/or compare measurements of angles. (Reference: 2.3.11.a, 2.3.11.B)
		5.3 – Inequalities in One Triangle	5.2 - Identify and use medians in triangles	Circumcenter	Unit 5 Test - 5.1-5.6			M11.C.1.3-Use properties of congruence, correspondence and similarity in problem-solving settings involving two- and three-dimensional figures. (Reference: 2.9.11.B)
		5.4 – Indirect Proof	5.2 - Identify and use altitudes in triangles	Incenter				
		5.5 – The Triangle Inequality	5.3 - Recognize and apply properties of inequalities to the measures of the angles of a triangle	Median				
		5.6 – Inequalities in Two Triangles	5.3 - Recognize and apply properties of inequalities to the relationships between the angles and the sides of a triangle	Centroid				
			5.4 - Write indirect algebraic proofs	Altitude				
			5.4 - Write indirect geometric proofs	Orthocenter				
			5.5 - Use the triangle inequality theorem to identify possible triangles	Indirect Reasoning				

m

b

Unit 6 -  
Quadrilaterals

5.5 - Prove triangle relationships using the triangle inequality theorem Indirect Proof

5.6 - Apply the hinge theorem or its converse to make comparisons in two triangles Proof by Contradiction

5.6 - Prove triangle relationships using the hinge theorem or its converse Equidistant

Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
What do we name figures?	6.1 - Find and use the sum of the measures of the interior angles of a polygon	6.1 – Angles of Polygons	Parallelogram	Quiz - 6.1-6.3		Textbook	M11.C.1.2-Recognize and/or apply properties of angles, triangles, and quadrilaterals. (Reference: 2.9.8.D, 2.9.11.C)
	6.1 - Find and use the sum of the measures of the exterior of a polygon	6.2 – Parallelograms	Rectangle	Quiz - 6.4-6.6		Publisher Resources	M11.B.2.1-Use and/or compare measurements of angles. (Reference: 2.3.11.a, 2.3.11.B)
	6.2 - Recognize and apply the properties of the sides and angles of parallelograms	6.3 – Tests for Parallelograms	Rhombus	Unit 6 Test - 6.1-6.6			M11.C.1.3-Use properties of congruence, correspondence and similarity in problem-solving settings involving two- and three-dimensional figures. (Reference: 2.9.11.B)
	6.2 - Recognize and apply the properties of diagonals of parallelograms	6.4 – Rectangles	Square				
	6.3 - Recognize the conditions that ensure a quadrilateral is a parallelogram	6.5 – Rhombi and Squares	Trapezoid				
	6.3 - Prove that a set of points form a parallelogram in the coordinate plane	6.6 – Trapezoids and Kites	Bases				

6.4 - Recognize and apply properties of rectangles  
 6.4 - Determine whether parallelograms are rectangles

Legs of a Trapezoid

Base Angles

6.5 - Recognize and apply properties of rombi and squares  
 6.6 - Recognize and apply the properties of trapezoids, including the medians of trapezoids  
 6.6 - Recognize and apply the properties of kites

Isosceles Trapezoid

Midsegment of a Trapezoid

Kite

e  
r

J Unit 7  
Proportions  
and  
Similarity

a	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	How can two objects be similar? How does similarity in mathematics compare to similarity in everyday life?	7.1 Ratios and Proportions	7.1 Write Ratios        7.1 Write and solve proportions	Ratio, extended rations, proportions, extremes, means, cross products	Quiz 7.1-7.3        Quiz 7.4-7.5		Textbook        Worksheet	M11.B.2.1-Use and/or compare measurements of angles. (Reference: 2.3.11.a, 2.3.11.B)        M11.C.1.2-Recognize and/or apply properties of angles, triangles, and quadrilaterals. (Reference: 2.9.8.D, 2.9.11.C)





a	7.2 Similar Polygons	7.2 Use proportions to identify similar polygons	similar polygons, scale factor	Chapter 7 Test(7.1-7.5)	M11.C.1.3-Use properties of congruence, correspondence and similarity in problem-solving settings involving two- and three-dimensional figures. (Reference: 2.9.11.B)			
		←						
r		7.2 Solve problems using the properties of similar polygons						
y	7.3 Similar Triangles	7.3 Identify similar triangles using AA similarity postulate and the SAS, and SSS similarity theorems.						
		7.3 Use similar triangles to solve problems						
	7.4 Parallel Lines and Proportional Parts	7.4 Use proportional parts within triangles	midsegment of a triangle					
		7.4 Use proportional parts with parallel lines						
	7.5 Parts of Similar Triangles	7.5 Recognize and use proportional relationships of corresponding angle bisectors, altitudes, and medians of similar triangles						
		7.5 Use the triangle bisector theorem						
F	Unit 8 Right Triangles and Trigonometry							
e	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
b	Why do we use mathematics to model	8.1 Geometric Mean	8.1 Find the geometric mean between two numbers	geometric mean	Quiz 8.1-8.3		Textbook	M11.B.2.1-Use and/or compare measurements of angles. (Reference: 2.3.11.a, 2.3.11.B)

r	real-world situations?	8.1 Solve problems involving relationships between parts of a right triangle and the altitude to its hypotenuse		Quiz 8.4-8.5	Worksheet	M11.C.1.2-Recognize and/or apply properties of angles, triangles, and quadrilaterals. (Reference: 2.9.8.D, 2.9.11.C)
u	<b>8.2 The Pythagorean Theorem and its Converse</b>	8.2 Use the pythagorean theorem	pythagorean triple	Chapter 8 Test(8.1-8.5)		M11.C.1.4-Solve problems involving right triangles using the Pythagorean Theorem. (Reference: 2.10.11.B)
a		8.2 Use the converse of the pythagorean theorem				
r	<b>8.3 Special Right Triangles</b>	8.3 Use the properties of 45-45-90 triangles				
y		8.3 use the properties of 30-60-90 triangles				
	<b>8.4 Trigonometry</b>	8.4 Find trigonometric ratios using right triangles	trigonometry, trigonometric ratios, sine, cosine, tangent, inverse sine, inverse cosine, inverse tangent			
		8.4 Use trigonometric ratios to find angle measures in right triangles				
	<b>8.5 Angles of Elevation and Depression</b>	8.5 Solve problems involving angles of elevation and depression	angles of elevation, angle of depression			
		8.5 Use angles of elevation and depression to find the distance between two objects				

M Units 10  
Circles

a	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
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r	How can circles be used?	10.1 Circles and Circumference	10.1 Identify and use parts of circles	circle, center, radius, chord, diameter, concentric circles, circumference, pi, inscribed, circumscribed	Quiz 10.1-10.4	Textbook	M11.C.1.1-Identify and/or use parts of circles and segments associated with circles. (Reference: 2.9.11.F)
c			10.1 Solve problems involving the circumference of a circle		Quiz 10.5-10.8	Worksheet	M11.C.1.2-Recognize and/or apply properties of angles, triangles, and quadrilaterals. (Reference: 2.9.8.D, 2.9.11.C)
h		10.2 Measuring Angles and Arcs	10.2 Identify central angles, major arcs, minor arcs, and semicircles, and find their measures.	central angle, arc, minor arc, major arc, semicircle, congruent arcs, adjacent arcs, arc length	Chapter 10 Test		
		10.3 Arcs and Chords	10.2 Find arc lengths 8.3 Recognize and use relationships between arcs and chords 8.3 Recognize and use relationships between arcs, chords, and diameters				
		10.4 Inscribed Angles	10.4 Find the measures of inscribed angles.	inscribed angle, intercepted arc			
		10.5 Tangents	10.4 Find measures of angles of inscribed polygons. 10.5 Use properties of tangents.	tangent, point of tangency, common tangent			
			10.5 Solve problems involving circumscribed polygons.				

<b>10.6 Secants, Tangents, and Angle Measures</b>	10.6 Find measures of angles formed by lines intersecting on or inside a circle.	secant
	10.6 Find measures of angles formed by lines intersecting outside the circle.	
<b>10.7 Special Segments in a Circle</b>	10.7 Find measures of segments that intersect in the interior of a circle.	chord segment, secant segment, external secant segment, tangent segment
	10.7 Find measures of segments that intersect in the exterior of a circle.	
<b>10.8 Equations of Circles</b>	10.8 Write the equation of a circle.	locus
	10.8 Graph a circle on the coordinate plane.	

A Unit 11  
Areas of  
polygons  
and Circles

p	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
r	How can decomposing and recomposing shapes help us build our understanding of mathematics?	<b>11.1 Areas of Parallelograms and Triangles</b>	11.1 Find perimeters and areas of parallelograms.	base of a parallelogram, height of a parallelogram, base of a triangle, height of a triangle	Quiz 11.1-11.3		Textbook	M11.B.2.2-Use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface area and/or volume. (May require conversions within the same system.) (Reference: 2.3.8.A, 2.3.8.D).

i

Find perimeters and areas of triangles.

Quiz 11.4-11.5

Worksheet M11.B.2.3-Describe how a change in one dimension of a figure (2 or 3 dimensional) affects other measurements of that figure. (Reference: 2.3.8.E)

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**11.2 Areas of Trapezoids, Rhombi, and Kites**

11.2 Find areas of trapezoids.

height of a trapezoid

Chapter 11

11.2 Find areas of rhombi and kites.

**11.3 Areas of Circles and Sectors**

11.3 Find areas of circles

sector of a circle, segment of a circle

11.3 Find areas of sectors of circles

**11.4 Areas of Regular Polygons and Composite Figures**

11.4 Find areas of regular polygons.

center of a regular polygon, radius of a regular polygon, apothem, central angle of a regular polygon, composite figures

11.4 Find areas of composite figures.

**11.5 Areas of Similar Figures**

11.5 Find areas of similar figures by using scale factors.

11.5 Find scale factors or missing measures given the areas of similar figures.

a	Essential							
	Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
y	How are two-dimensional and three-dimensional figures related?	12.2 Surface Areas of Prisms and Cylinders	12.2 Find lateral areas and surface areas of prisms.	lateral face, lateral edge, base edge, altitude, height, lateral area, axis, composite solid	Quiz 12.2-12.4		Textbook	M11.D.2.1-Write, solve, and/or graph linear equations and inequalities using various methods. (Reference: 2.8.8.F; 2.8.11.D; 2.8.11.H; 2.8.11.J; 2.8.11.N; 2.8.11.L; 2.8.11.K)
			12.2 Find lateral areas and surface areas of cylinders.				Worksheet	M11.D.3.2-Compute and/or use the slope of a line. (Reference: 2.8.11.J, 2.8.11.L)
		12.3 Surface Areas of Pyramids and Cones	12.3 Find lateral areas and surface areas of pyramids	regular pyramid, slant height, right cone, oblique cone				
			12.3 Find lateral areas and surface areas of cones.					
		12.4 Volumes of Prisms and Cylinders	12.4 Find volumes of prisms.					
			12.4 Find volumes of cylinders.					
		12.5 Volumes of Pyramids and Cones	12.5 Find volumes of pyramids.					
			12.5 Find volumes of cones.					
		12.6 Surface Areas and Volumes of Spheres	12.6 Find surface areas of spheres.					
			12.6 Find volumes of spheres.					
J					Q 12.5-12.6			
u					Chapter 12			
					Test(12.2-12.6)			