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

Sept Unit 1 - Tools of Geometry

Essential Questions	Content	Knowledge and Skills	Vocabulary		Assessments	Lessons	Resources	Standards
Why do we measure?	1.1 – Points, Lines, and Planes	1.1 - Identify and model points, lines, and planes	undefinded 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)
		1.1 - Identify intersecting lines and planes	point	adjacent angles	Quiz - 1.5-1.7		Publisher Resources	
	1.2 – Linear Measure	1.2 - Measure segments and calculate with measures	line	linear pair	Unit 1 Test - 1.1-1.7			
	1.3 – Distance and Midpoints	1.3 - Find the distance between two points and find the midpoint of a segment	plane	vertical angles				
	1.4 – Angle Measure	1.4 - Measure and classify angles	collinear	complementary angles				
		1.4 - Identify and use congruent angles and the bisector of an angle	coplaner	supplementary angles				
	1.5 – Angle Relationships	1.5 - Identify and use special pairs of angles	line segment	perpendicular				
		1.5 - Identify perpendicular lines	betweeness of points	polygon				
	1.6 – Two-Dimensional Figures	1.6 - Identify and name polygons	congruent segments	equilateral polygon				
		1.6 - Find perimeter, circumference, and area of two dimentional figures	construction	regular polygon				
	1.7 – Three-Dimensional Figures	1.7 - Identify and name three-dimentional 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	
		2.1 - Find counterexamples	Conjecture	Axiom	Quiz - 2.5-2.8		Publisher Resources	
	2.2 - Logic	2.2 - Determine truth values of negations.	Counterexample	Proof	Unit 2 Test - 2.1-2.8			
		2.2 - Represent conjunctions and disjunctions using Venn diagrams	Statement	Theorem				
	2.3 – Conditional Statements	2.3 - Analyze statements in if-then form	Truth Value	Deductive Argument				
		2.3 - Write converses, inverses, and contrapositives	Negation	Paragraph Proof				
	2.4 – Deductive Reasoning	2.4 - Use the Law of Detachment	Compound Statement	Informal Proof				

			Conjunction	Algebraic Proof
		2.4 - Use the Law of Syllogism		
	2.5 – Postulates and Para. Proofs	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 – Algebraic 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 – Proving Segment Relationships	2.7 - Write proofs involving segment addition	Conclusion	
		2.7 - Write proofs involving congruence	Related Concepts	
	2.8 – Proving Angle Relationships	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

c	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
t	Why do we have udefined terms such as point and line?	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 How can we use these terms?		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	3.2 – Angles and Parallel Lines	3.2 - Use theorems to determine the relationships between specific pairs of angles	Skew Lines	Unit 3 Test - 3.1-3.6			
e		3.2 - Use algebra to find angle measurements	Transversal				
r	3.3 – Slopes of Lines	3.3 - Find slopes of lines	Interior Angles				
		3.3 - Use slope to identify parallel and perpendicular lines	Exterior Angles				
	3.4 – Equations of Lines	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 – Proving Lines Parallel	3.5 - Recognize angle pairs that occur with parallel lines	Corresponding Angles				
		3.5 - Prove that two lines are parallel	Slope				
	3.6 – Perpendiculars and Distance	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

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			4.2 - 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		4.3 – Congruent Triangles	4.3 - Name and use corresponding parts of congruent triangles	Right Triangle	Transformation			
e			4.3 - Prove triangles are congruent using the definition of congruence	Equiangular Triangle	Preimage			
r		4.4 – Proving Cong. Tri – SSS, SAS	4.4 - Use SSS and SAS postulates to test for triangle congruence	Isosceles Triangle	Image			
		4.5 – Proving Cong. Tri.-ASA, AAS	4.5 - Use the ASA and AAS postulates to test for triangle congruence	Scalene Triangle	Congruence Transformation			
		4.6 – Isosceles and Equilateral Tri.	4.6 - Use properties of isosceles and equilateral triangles	Auxilary Line	Isometry			
		4.7 – Congruence Transformations	4.7 - Identify reflections, translations, and rotations	Exterior Angle	Reflection			
			4.7 - Verify congruence after a congruence transformation	Remote Interior Angle	Translation			
				Flow Proof	Rotation			
				Corollary				

				Congruent Congruent Polygon Corresponding Parts Included Angle				
D	Unit 5 - Relationships 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	**5.1 - Identify and use perpendiclar bisectors in triangles**	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			5.1 - 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)
		5.2 – Medians and Altitudes of Tri.	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)
			5.2 - Identify and use altitudes in triangles	Incenter				
		5.3 – Inequalities in One Triangle	5.3 - Recognize and apply properties of inequalities to the measures of the angles of a triangle	Median				
			5.3 - Recognize and apply properties of inequalities to the relationships between the angles and the sides of a triangle	Centroid				
		5.4 – Indirect Proof	5.4 - Write indirect algebraic proofs	Altitude				

		5.4 - Write indirect geometric proofs	Orthocenter
	5.5 – The Triangle Inequality	5.5 - Use the triangle inequality theorem to identify possible triangles	Indirect Reasoning
		5.5 - Prove triangle relationships using the triangle inequality theorem	Indirect Proof
	5.6 – Inequalities in Two Triangles	5.6 - Apply the hinge theorem or its converse to make comparisons in two triangles	Proof by Contradiction
m		5.6 - Prove triange relationships using the hinge theorem or its converse	Equidistant

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Unit 6 - Quadrilaterals

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		Legs of a Trapezoid				
	6.4 - Determine whether parallelograms are rectangles		Base Angles				
	6.5 - Recognize and apply properties of rombi and squares		Isosceles Trapezoid				
	6.6 - Recognize and apply the properties of trapezoids, including the medians of trapezoids		Midsegment of a Trapezoid				
	6.6 - Recognize and apply the properties of kites		Kite				

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J Unit 7
Proportions
and Similarity

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Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
n **How can two objects be similar? How does similarity in**	**7.1 Ratios and Proportions**	7.1 Write Ratios	Ratio, extended rations, proportions, extremes, means, cross products	Quiz 7.1-7.3		Textbook	M11.B.2.1-Use and/or compare measurements of angles. (Reference: 2.3.11.a, 2.3.11.B)

u	**mathematics compare to similarity in everyday life?**		7.1 Write and solve proportions		Quiz 7.4-7.5		Worksheet	M11.C.1.2-Recognize and/or apply properties of angles, triangles, and quadrilaterals. (Reference: 2.9.8.D, 2.9.11.C)
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 7.4 Use proportional parts with parallel lines	midsegment of a triangle				
		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 r	**Why do we use mathematics to model real-world situations?**	**8.1 Geometric Mean**	8.1 Find the geometric mean between two numbers 8.1 Solve problemsa involving relationships between parts of a right triangle and the altitude to its hypotenuse	geometric mean	Quiz 8.1-8.3 Quiz 8.4-8.5		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)
u a		**8.2The Pythagorean Theorem and its Converse**	8.2 Use the pythagorean theorem 8.2 Use the converse of 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)
r y		**8.3 Special Right Triangles**	8.3 Use the properties of 45-45-90 triangles 8.3 use the properties of 30-60-90 triangles					
		8.4 Trigonometry	8.4 Find trigonometric ratios using right triangles 8.4 Use trigonometric ratios to find angle measures in right triangles	trigonometry, trigonometric ratios, sine, cosine, tangent, inverse sine, inverse cosine, inverse tangent				
		8.5 Angles of Elevation and Depression	8.5 Solve problems involving angles of elevation and depression 8.5 Use angles of elevation and depression to find the distance between two objects	angles of elevation, angle of depression				

M Units 10 Circles

a	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
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, ,onor arcs, and semicircles, and find theor measures.	central angle, arc, minor arc, major arc, semicirlce, congruent arcs, adjacent arcs, arc length	Chapter 10 Test			
			10.2 Find arc lengths					
		10.3 Arcs and Chords	10.3 Recognize and use relationships between arcs and chords					
			10.3 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				
			10.4 Find measures of angles of inscribed polygons.					
		10.5 Tangents	10.5 Use properties of tangents.	tangent, point of tangency, common tangent				
			10.5 Solve problems involving circumscribed polygons.					

		10.6 Secants, Tangents, and Angle Measures	10.6 Find measures of angles formed by lines intersectting on or inside a circle. 10.6 Find measures of angles formed by lines intersecting outside the circle.	secant				
		10.7 Special Segments in a Circle	10.7 Find measures of segments that intersect in the interior of a circle. 10.7 Find measures of segments that intersect in the exterior of a circle.	chord segment, secant segment, external secant segment, tangent segment				
		10.8 Equations of Circles	10.8 Write the equation of a circle. 10.8 Graph a circle on the coordinate plane.	locus				
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?**	**11.1 Areas of Parallelograms and Triangles**	11.1 Find perimeters and areas of parallelograms.	base of a parallelogram, heoght 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)
l	**11.2 Areas of Trapezoinds, 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.					

M Unit 12 Extending Surface Area and Volume

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 u n e					Q 12.5-12.6 Chpter 12 Test(12.2-12.6)		