Teacher: Black	Course: Geometry	Grade Level(s): 10-12
	Unit 1 Topic(s): The Tools of Geome	etry
Content/Big Ideas	Students will learn the basic continuing geometry.	geometry terms and there use for
Essential Questions	How are the lengths of segme	nd and use angles in Geometry?
Concepts	Points, lines, planes, segment angles relationships, polygor	ts, congruence, midpoint, distance, angles, 1s
Competencies	Apply geometric essentials fo	or geometric applications
Standards/Benchmarks	on a number line or on a coo G.2.1.2.1 Calculate the dista a number line or on a coordi CC2.3HS.A.11 Apply coordin theorems algebraically.	nce and/or midpoint between two points on inate plane ate geometry to prove simple geometric r compare angles in degrees (up to

Activities & Assessments	Debates Directed Paraphrasing Exit Ticket Follow-up Questioning Gallery Graphic Organizers KWL charts Guided Reciprocal Peer Questioning Hand Signals Interviews Journals Learning Muddiest Point "No Hands Up" A "No Hands Up" Open-ended Questions One-sentence Summary Performance Task Quick Write Random Rubrics Short Quizzes Student-generated Test Sturveys/Rating Scales Surveys and Rating Scales provide an easy-to-use Think-Pair-Share Write Before Discussion Graphic Organizer Unit Assessment Notebook Check Homework Correct the error	
Teacher: Black	Course: Geometry Grade Level(s): 10-12	
	Unit 2 Topic(s): Parallel and Perpendicular Lines	
Content/Big Ideas	Students will learn about perpendicular and parallel lines. They will be able to write the equation of a line given certain characteristics.	
Essential Questions	What relationships are created with lines and planes? How do slope and linear equations relate to parallel and perpendicular lines? Why are perpendicular lines important to distance in geometry?	

Concepts	Parallel lines and planes, perpendicular lines, skew lines, transversal, consecutive, alternate, corresponding, interior/exterior slope, rate of change, slope-intercept form, point-slope form, equidistant
Competencies	Students will make connections on how points, lines and planes are related. Use coordinate geometry to establish properties of 2- dimensional shapes. Apply coordinate geometry to calculate distance and/or midpoint between two points

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Standards/Benchmarks	 M11.B.2.1.1 Measure and/or compare angles in degrees (up to 360Z) (protractor must be provided or drawn). G.2.2.1.2 Use properties of angles formed when two parallel lines are cut by a transversal to find the measures of missing angles G.2.2.1.1 Use properties of angles formed by intersecting lines to find the measures of missing angles CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. M11.C.3.1.2 Relate slope to perpendicularity and/or parallelism (limit to linear algebraic expressions; slope formula provided on the reference sheet) M11.D.3.2.1 Apply the formula for the slope of a line to solve problems (formula given on reference sheet) M11.D.3.2.2 Given the graph of the line, 2 points on the line, or the slope and a point on a line, write or identify the linear equation in point-slope, standard and/or slope-intercept form M11.D.3.2.3 Compute the slope and/or y-intercept represented by a linear equation or graph G.2.1.2.2 Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations) CC2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically. M11.C.3.1.2 Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations) CC2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically. M11.C.3.1.2 Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations) CC2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraic ally. G.2.1.2.2 Relate slope to perpendicularity and/or parallelism (limit to linear algebraic equations) CC2.3.HS.D.10 Represent, solve and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.
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Teacher: Black	Course: Geometry Grade Level(s): 10-12	
	Unit 3 Topic(s): Congruent Triangles	
Content/Big Ideas	We will discuss how triangles sides and angles can relate to geometry.	
Essential Questions	How can we use sides and angles of triangles to classify them? How can we use the triangle theorems to prove triangles are congruent? What properties of isosceles triangles help us to find unknown measurements?	

Concepts	Classifying triangles and angle measures of triangles Triangle Congruence Two column proofs Isosceles Triangle Theorem
Competencies	<i>How are the sides and angles of triangles used in geometry?</i>
Standards/Benchmarks	 M11.C.1.2.3 Identify and/or use properties of isosceles and equilateral triangles G1.2.1.3 Identify and/or use properties of isosceles and equilateral triangles CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. M11.C.1.3.1 Identify and/or use properties of congruent and similar polygons or solids G1.2.1.3 Identify and/or use properties of isosceles and equilateral triangles CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. M11.C.1.2.3 Identify and/or use properties of isosceles and equilateral triangles CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. M11.C.1.2.3 Identify and/or use properties of isosceles and equilateral triangles G.1.2.1.1 Identify and/or use properties of isosceles and equilateral triangles G.1.2.1.3 Identify and/or use properties of triangles G.1.2.1.3 Identify and/or use properties of isosceles and equilateral triangles G.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects.

Activities & Assessments	Debates Directed Paraphrasing Exit Ticket Follow-up Questioning Gallery Graphic Organizers KWL charts Guided Reciprocal Peer Questioning Hand Signals Interviews Journals Learning Muddiest Point "No Hands Up" A "No Hands Up" Open-ended Questions One-sentence Summary Performance Task Quick Write Random Rubrics Short Quizzes Student-generated Test Surveys/Rating Scales Surveys and Rating Scales p Think-Pair-Share Write Before Discussion Graphic Organizer Unit Assessment Notebook Check Homework Correct the error	rovide an easy-to-use
Teacher: Black	Course: Geometry Grade Level	(s): 10-12
	Unit 4	
	Topic(s): Relationships in Triangles	
Content/Big Ideas	We will discuss how triangles sides and angles can relate to geometry.	
Essential Questions	How do we use medians, altitudes and bisectors in triangles? How can inequalities be used in triangles? How does indirect reasoning work?	

Concepts	Bisectors, medians and altitudes Triangle Inequalities
Competencies	<i>How are the sides and angles of triangles used in geometry?</i>
Standards/Benchmarks	 M11.C.1.2.1 Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. M11.C.1.2.1 Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles (c.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles (c.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles (c.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles (c.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles (c.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) G.1.2.1.1 Identify and/or use properties of triangles (c.g., medians, altitudes, angle bisectors, side/angle relationships, and and theorems as they relate to geometric figures. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects.

Activities & Assessments	Debates Directed Paraphrasing Exit Ticket Follow-up Questioning Gallery Graphic Organizers KWL charts Guided Reciprocal Peer Questioning Hand Signals Interviews Journals Learning Muddiest Point "No Hands Up" A "No Hands Up" Open-ended Questions One-sentence Summary Performance Task Quick Write Random Rubrics Short Quizzes Student-generated Test Surveys/Rating Scales Surveys and R Think-Pair-Share Write Before Discussion Graphic Organizer Unit Assessment Notebook Check Homework Correct the error	ating Scales provide an easy-to-use
Teacher: Black	Course: Geo	Grade Level(s): 10-12
	Unit 5 Topic(s): Proportions and Similari	tv
Content/Big Ideas	Ratios, similar figures, proportions	
Essential Questions	How can we use proportions to determine missing information? How do we use proportions to determine missing sides or lengths of figures? How can we use proportional relationships of similar figures in order to find other measurements?	

Concepts	Proportions, similar figures, proportional parts
Competencies	Use ratios and proportions to find similarity in figures.

	<i>M11.A.2.1.3</i> Identify and/or use proportional relationships in problem solving settings
	G.1.3.1.1 Identify and/or use properties of congruent and similar
	polygons or solids
	<i>G.1.3.1.2 Identify and/or use proportional relationships in similar</i>
	figures
	<i>CC2.3.HS.A.2 Apply rigid transformations to determine and explain congruence.</i>
	<i>CC2.3.HS.A.5 Create justifications based on transformations to establish</i>
	similarity of plane figures.
	CC2.3.HS.A.6 Verify and apply theorems involving similarity as they
	relate to plane figures.
	M11.C.1.3.1 Identify and/or use properties of congruent and similar
	polygons or solids
	<i>G.1.3.1.1 Identify and/or use properties of congruent and similar</i>
	polygons or solids
	<i>G.1.3.1.2</i> Identify and/or use proportional relationships in similar
	figures
	CC2.3.HS.A.2 Apply rigid transformations to determine and explain
Standards/Benchmarks	congruence.
	CC2.3.HS.A.5 Create justifications based on transformations to establish
	similarity of plane figures.
	CC2.3.HS.A.6 Verify and apply theorems involving similarity as they
	relate to plane figures. M11.A.2.1.3 Identify and/or use proportional relationships in problem
	solving settings
	M11.C.1.3.1 Identify and/or use properties of congruent and similar
	polygons or solids
	<i>G.1.3.1.1 Identify and/or use properties of congruent and similar</i>
	polygons or solids
	<i>G.1.3.1.2</i> Identify and/or use proportional relationships in similar
	figures
	<i>CC2.3.HS.A.2 Apply rigid transformations to determine and explain</i>
	congruence.
	CC2.3.HS.A.5 Create justifications based on transformations to establish
	similarity of plane figures.
	CC2.3.HS.A.6 Verify and apply theorems involving similarity as they
	relate to plane figures.

Activities & Assessments	Debates Directed Paraphrasing Exit Ticket Follow-up Questioning Gallery Graphic Organizers KWL charts Guided Reciprocal Peer Questioning Hand Signals Interviews Journals Learning Muddiest Point "No Hands Up" A "No Hands Up" A "No Hands Up" Open-ended Questions One-sentence Summary Performance Task Quick Write Random Rubrics Short Quizzes Student-generated Test Surveys/Rating Scales Surveys and Rating Scales provide an easy-to-use Think-Pair-Share Write Before Discussion Graphic Organizer Unit Assessment Notebook Check Homework Correct the error
Teacher: Black	Course: Geometry Grade Level(s): 10-12
	Unit 6 Topic(s): Right Triangles and Trigonometry
Content/Big Ideas	radicals, geometric mean, right triangles, trigonometry Patterns exhibit relationships that can be extended, described, and generalized. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization

Essential Questions	How can we use square roots in geometry? How do you use the geometric mean to find unknown sides in right triangles? How can we apply the Pythagorean Theorem to solve real world problems? How do fractions contribute to solving problems in right triangles? How can we use the laws to solve for missing measures in non right triangles?
Concepts	Radicals, Geometric Mean, Right triangles, Trigonometry, Law of Sines and Cosines*
Competencies	Define and/or apply trigonometric ratios. Solve problems involving right triangles (Pythagorean Theorem, right triangle trigonometry)

Standards/Benchmarks	 M11.A.1.1.3 Simplify square roots. A1.1.1.1.2 Simplify square roots CC(ALg1)2.1.8.E.1 Distinguish between rational and irrational numbers using their properties. CC(Alg1)2.1.8.E.4 Estimate irrational numbers by comparing them to rational numbers. CC(Alg1)2.1.8.E.4 Estimate irrational numbers by comparing them to rational numbers. CC(Alg1)2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents. CC(Alg1)2.1.HS.F.2 Apply properties of rational and irrational numbers to solve eal world or mathematical problems. Standards: M11.C.1.2.1 Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem) M11.C.1.4.1 Find the measure of a side of a right triangle using the Pythagorean Theorem (Pythagorean Theorem included on the reference sheet) G.2.1.1.1 Use the Pythagorean theorem to write and/or solve problems involving right triangles. CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. CC2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios. G.2.1.1.2 Use trigonometric ratios to write and/or solve problems involving right triangles. CC2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios. G.2.1.1.2 Use trigonometric r
	trigonometric ratios.
	involving right triangles
	<i>CC2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.</i>
	<i>CC2.2.HS.C.9</i> Prove the Pythagorean identity and use it to calculate
	trigonometric ratios.

Teacher: Black Content/Big Ideas	Course: Geo Grade Level(s): 10-12 Unit 7
Activities & Assessments	Debates Directed Paraphrasing Exit Ticket Follow-up Questioning Gallery Graphic Organizers KWL charts Guided Reciprocal Peer Questioning Hand Signals Interviews Journals Learning Muddiest Point "No Hands Up" Open-ended Questions One-sentence Summary Performance Task Quick Write Random Rubrics Short Quizzes Student-generated Test Surveys/Rating Scales Surveys and Rating Scales provide an easy-to-use Think-Pair-Share Write Before Discussion Graphic Organizer Unit Assessment Notebook Check Homework Correct the error

Essential Questions	How does the name of a polygon relate to finding their angle measures? How can the properties of sides and angles of polygons be used to ensure a quadrilateral is a parallelogram? Lesson EQ's: How do the properties of special parallelograms differ? How can we identify a shape on the coordinate plane using the slope and distance formula? How can we use the properties of trapezoids to find missing values?
Concepts	Basics of Polygons, Basics of Parallelograms, Rectangles,Rhombi, Squares, Kites, Trapezoids
Competencies	How can we apply the properties of polygons to determine certain figures?
Standards/Benchmarks	 Standards: M11.C.1.2.2 Identify and/or use properties of quadrilaterals (e.g.,parallel sides, diagonals, bisectors, congruent sides/angles and G.1.2.1.4 Identify and/or use properties of regular polygons CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. Standards: G.1.2.1.2 Identify and/or use properties of quadrilaterals CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.3 Verify and apply geometric theorems as they relate to

Activities & Assessments	Debates Directed Paraphrasing Exit Ticket Follow-up Questioning Gallery Graphic Organizers KWL charts Guided Reciprocal Peer Questioning Hand Signals Interviews Journals Learning Muddiest Point "No Hands Up" A "No Hands Up" Open-ended Questions One-sentence Summary Performance Task Quick Write Random Rubrics Short Quizzes Student-generated Test Surveys/Rating Scales Surveys and Rating Scales provide an easy-to-use Think-Pair-Share Write Before Discussion Graphic Organizer Unit Assessment Notebook Check Homework Correct the error
Teacher: Black	Course: Geometry Grade Level(s): 10-12
	Unit 8 Topic(s): Circles
Content/Big Ideas	parts of circles, relationships with arcs, chords and diameters, inscribed angles and tangents of circles

Essential Questions	How can we use the parts of circles to solve problems about their dimension, length and measurement? What relationships of arcs, chords and diameters are used in circles? How can we find the measures of inscribed angles and polygons? How can you use the properties of a tangent to a circle? How do you find measures of angles formed by lines intersecting on, inside or outside a circle? What is the relationship of segments that intersect inside or outside a circle?
Concepts	Basics of Circles, Arcs and Chords, Inscribed Angles, Tangents, Secants, Tangents, and angle measures, Special Segments in Circles
Competencies	Identify, determine, and/or use parts of circles and segments, lines, and angles associated with circles. Extend the concept of similarity to determine arc lengths and areas of sectors. Understand and apply theorems about circles
Standards/Benchmarks	 M11.C.1.1.1 Identify and/or use the properties of a radius, diameter and/or tangent of a circle (given numbers should be whole) M11.C.1.1.2 Identify and/or use the properties of arcs, semicircles, inscribed angles and/or central angles G.1.1.1.3 Use chords, tangents, and secants to find missing arc measures or missing segment measures CC2.3.HS.A.8 Apply geometric theorems to verify properties of circles. CC2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles. CC2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional objects. G.2.2.2.5 Find the area of a sector of a circle. CC2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles. CC2.3.HS.A.13 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles. CC2.3.HS.A.10 Extend the concept of similarity to determine arc lengths and areas of sectors of circles. CC2.3.HS.A.2 Verify and apply geometric theorems as they relate to geometric figures. CC2.3.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context.

Activities & Assessments	Debates Directed Paraphrasing Exit Ticket Follow-up Questioning Gallery Graphic Organizers KWL charts Guided Reciprocal Peer Questioning Hand Signals Interviews Journals Learning Muddiest Point "No Hands Up" A "No Hands Up" Open-ended Questions One-sentence Summary Performance Task Quick Write Random Rubrics Short Quizzes Student-generated Test Surveys/Rating Scales Surveys and Rating Scales provide an easy-to-use Think-Pair-Share Write Before Discussion Graphic Organizer Unit Assessment Notebook Check Homework Correct the error
Teacher: Black	Course: Geometry Grade Level(s): 10-12
	Unit 9 Topic(s): Area, Perimeter, Surface Area, Volume
Content/Big Ideas	Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.

Essential Questions	How are the dimensions of two-dimensional figures used in the real world? How does change in the linear dimension of a figure affect its perimeter, circumference and area? How are the dimensions of three- dimensional figures used in the real world? How does change in the linear dimension of a figure affect its surface area and volume? How do you find the measurement of the missing length given the surface area or volume?
Concepts	Measuremen t and Dimension
Competencies	Use and/or compare measurements of angles. Use and/or develop procedures to determine, describe, or estimate measures of perimeter, circumference, area, surface area, and/or volume. Describe how a change in the linear dimension can affect perimeter, circumference, area, surface area, and/or volume. Visualize the relation between two- and three-dimensional objects. Apply geometric concepts in modeling situations.

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Standards/Benchmarks	 M11.B.2.2.4 Find the measurement of a missing length given the perimeter, circumference, area or volume. M11.B.2.3.1 Describe how a change in the linear dimension of a figure affects its perimeter, circumference, area or volume. G.2.2.2 Find the measurement of a missing length, given the perimeter, circumference, or area Standards: M11.B.2.3.1 Describe how a change in the linear dimension of a figure affects its perimeter, circumference, area or volume. M11.B.2.3.1 Describe how a change in the linear dimension of a figure affects its perimeter, circumference, area or volume. M11.B.2.3.1 Describe how a change in the linear dimension of a figure affects its perimeter, circumference, area or volume. M11.B.2.3.1 Calculate the surface area of prisms, cylinders, cones, pyramids and/or spheres. Formulas are provided on the reference sheet G.3.1.2 Calculate the surface area of prisms, cylinders, cones, pyramids, and/or spheres. Formulas are provided on a reference sheet G.2.3.1.2 Calculate the volume of prisms, cylinders, cones, pyramids, and/or spheres. Formulas are provided on a reference sheet G.2.3.1.2 Calculate the volume of prisms, cylinders, cones, pyramids, and/or spheres. Formulas are provided on a reference sheet G.2.3.H.S.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles. CC2.3.H.S.A.13 Analyze relationships between two-dimensional and three-dimensional objects CC2.3.H.S.A.12 Explain volume formulas and use them to solve problems. G.2.3.1.1 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?).
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