



Key Course Objectives or Enduring Understandings:

Important ideas and core processes

- Triangle congruence and similarity criteria
- Using coordinates to establish geometric results
- Calculating length and angle measures
- Using geometric representations as modeling tools
- Using construction tools, physical and computational to draft models of geometric phenomenon

Overarching Skills/Essential Questions:

Ideas or skills that transcend discipline-specific learning

Congruence

- Understand congruence in terms of rigid motions
- Prove geometric theorems

Similarity, Right Triangles, and Trigonometry

- Understand similarity in terms of similarity transformations
- Prove theorems using similarity
- Define trigonometric ratios and solve problems involving right triangles

Expressing Geometric Properties with Equations

- Use coordinates to prove simple geometric theorems algebraically

Modeling with Geometry

- Apply geometric concepts in modeling situations

Assessments

- Common Unit Assessments for Units 1-11
- Common Mid-Unit Quizzes
- Midterm
- Common Core Geometry Exam

Unit Pacing Names of units and approximate pacing	Unit Learning Targets By the end of the unit, students will be able to:	Standards Identify content and/or CCLS Standards
<p style="text-align: center;"><u>Unit 1</u> Angle Relationships - 12 days</p>	<ul style="list-style-type: none"> ● Construct <ul style="list-style-type: none"> ○ Copy an Angle ○ Parallel Lines ● Identify and apply the following theorems: <ul style="list-style-type: none"> ○ Vertical ○ Linear Pair ○ Consecutive Adjacent Angles on a Line ○ Alternate Interior ○ Corresponding ○ Same Side Interior ● Prove Parallel Lines (converse theorems) ● Write angle proofs <ul style="list-style-type: none"> ○ Transitive and Substitution Properties 	<p style="text-align: center;">G-CO.1, G-CO.9, G-CO.12</p>
<p style="text-align: center;"><u>Unit 2</u> Triangles - 13 days</p>	<ul style="list-style-type: none"> ● Construct <ul style="list-style-type: none"> ○ Equilateral Triangle ○ Isosceles Triangle ○ Regular Hexagon ○ Midsegment ○ Centroid ○ Perpendicular Lines and Bisector ○ Altitude ○ Circumcenter ○ Angle Bisector ○ Incenter ● Identify and apply the following theorems: <ul style="list-style-type: none"> ○ Triangle Sum Theorem ○ Isosceles Triangle/Converse ○ Exterior Angle ○ Midsegment ○ Centroid ● Write triangle proofs 	<p style="text-align: center;">G-CO.1, G-CO.10, G-CO.12, G-CO.13</p>

<p><u>Unit 3</u> Properties of Quadrilaterals - 7 days</p>	<ul style="list-style-type: none"> ● Identify and apply the following properties: <ul style="list-style-type: none"> ○ parallelogram ○ rectangle ○ rhombus ○ square ○ trapezoid 	<p>G-CO.9, G-CO.10, G-CO.11, G-CO.13</p>
<p><u>Unit 4</u> Rigid Motions - 13 days</p>	<ul style="list-style-type: none"> ● Construct <ul style="list-style-type: none"> ○ Rotations 180 and 60 ○ Center of Rotation ○ Reflection ○ Line of Reflection ○ Translation ● Perform the following rigid motions on a coordinate plane <ul style="list-style-type: none"> ○ Reflection (x-axis, y-axis, $y=x$, the origin) ○ Rotation (90, 180, 270) ○ Translation ● Describe the rotations and reflections that carry the following figures onto themselves <ul style="list-style-type: none"> ○ Rectangle ○ Parallelogram ○ Trapezoid ○ Regular Polygon 	<p>G-CO.2, G-CO.3, G-CO.4, G-CO.5, G-CO.6</p>
<p><u>Unit 5</u> Proving Congruent Triangles - 14 days</p>	<ul style="list-style-type: none"> ● Identify corresponding parts of congruent triangles ● Use the definition of congruence in terms of rigid motions to decide if two triangles are congruent ● Prove two triangles are congruent by: <ul style="list-style-type: none"> ○ SSS ○ SAS ○ ASA ○ AAS ○ HL ● Apply the following properties in proofs <ul style="list-style-type: none"> ○ Isosceles ○ Supplementary Angles ● Prove corresponding parts of congruent triangles are congruent ● Use congruent triangles to prove additional theorems (isosceles, parallel lines, midpoint, etc.) 	<p>G-CO.7, G-CO.8</p>

<p><u>Unit 6</u> Similarity - 15 days</p>	<ul style="list-style-type: none"> Construct <ul style="list-style-type: none"> Center of Dilation Dilations with scale factor of one-half and $r > 1$ Perform dilations on the coordinate plane Write the equation of a line that is dilated with the center of dilation on and off the line Use similarity transformations to justify whether two figures are similar Use the properties of similar triangles to find missing side lengths Find the perimeter of similar figures Apply the side-splitter theorem Prove two triangles are similar by: <ul style="list-style-type: none"> AA SAS Similarity SSS Similarity 	<p>G-SRT.1, G-SRT.2, G-SRT.3, G-SRT.4, G-SRT.5</p>
<p><u>Unit 7</u> Quadrilateral Proofs - 5 days</p>	<ul style="list-style-type: none"> Use the properties of parallelograms and special quadrilaterals to write quadrilateral proofs 	<p>G-CO.11</p>
<p><u>Unit 8</u> Right Triangle Trigonometry- 13 days</p>	<ul style="list-style-type: none"> Solve similar right triangle problems Apply the Pythagorean theorem (perimeter of a rhombus) Use trigonometry to solve right triangle problems <ul style="list-style-type: none"> Angle of Elevation and Depression Cofunctions Law of Sines 	<p>G-SRT.6, G-SRT.7, G-SRT.8</p>
<p><u>Unit 9</u> Area and Volume - 13 days</p>	<ul style="list-style-type: none"> Calculate the perimeter/circumference and area of: <ul style="list-style-type: none"> Square Rectangle Triangle Circles Shaded Area Find the area of similar figures Calculate the volume of: <ul style="list-style-type: none"> Prisms Pyramids Cylinders Cones Spheres Identify cross-sections Solve volume word problems (Dimensional Analysis, Shaded) Find the volume of similar figures Apply the density formula to volume word problems 	<p>G-MG.1, G-MG.2, G-MG.3 G-GMD.1, G-GMD.3, G-GMD.4</p>

<p style="text-align: center;"><u>Unit 10</u> Coordinate Geometry - 12 days</p>	<ul style="list-style-type: none"> ● Use the slope criteria for parallel and perpendicular lines to solve problems ● Write the equation of a line that is parallel or perpendicular to a given line and goes through a specific point ● Use the distance and midpoint formulas ● Calculate the perimeter polygons on the coordinate plane ● Calculate the area of triangles and rectangles on the coordinate plane ● Write the equation of a perpendicular bisector ● Partition a segment ● Use the distance and slope formulas to prove two triangles are: <ul style="list-style-type: none"> ○ Scalene ○ Isosceles ○ Equilateral ○ Right ● Use the distance, slope, and midpoint formulas to prove diagonals are: <ul style="list-style-type: none"> ○ Congruent ○ Perpendicular ○ Bisect Each Other ● Use the distance, slope and midpoint formulas to prove a quadrilateral is a: <ul style="list-style-type: none"> ○ Trapezoid/Isosceles Trapezoid ○ Parallelogram ○ Rectangle ○ Rhombus ○ Square 	<p style="text-align: center;">G-GPE.4, G-GPE.5, G-GPE.6, G-GPE.7</p>
<p style="text-align: center;"><u>Unit 11</u> Circles - 18 days</p>	<ul style="list-style-type: none"> ● Write the equation of a circle given the center and radius ● Graph a circle given the center and radius ● Write the equation of circle given the graph ● Determine if a point is on a circle ● Use the distance formula, midpoint formula, and/or Pythagorean theorem to write the equation of a circle given the endpoints of the diameter ● Write the equation of a circle in center-radius form given standard form ● Apply circle theorems <ul style="list-style-type: none"> ○ Central/Inscribed/Interior/Exterior ○ Parallel Chords ○ Congruent Chords/Congruent Arcs ○ Tangent Perpendicular to the Radius ○ Inscribed Quadrilateral 	<p style="text-align: center;">G-C.1, G-C.2, G-C.3, G-C.5 G-GPE.1, G-GPE.4</p>

	<ul style="list-style-type: none">○ Radius Perpendicular to a Chord○ 2 Tangents Drawn to a Circle are Congruent○ Secant-Tangent○ Secant-Secant● Write Circle Proofs● Calculate the area of a sector and arc length of a circle (radians)	
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