

Geometry

Unit Guide 2017 – 2018

Level 0: "Geometry" McDougal Littell; Larson, Boswell, Kanold, Stiff: 2007

Level 1: "Geometry" McDougal Littell; Larson, Boswell, Stiff: 2004

Level 2: "Geometry" Prentice Hall; Bass, Charles, Johnson, Kennedy: 2004

Unit 1: Geometry with Algebra Review

Essential Questions:

Are you able to graph lines and find the slope?

Can you identify points, lines, planes, segments, rays, and angles?

How do you write the equation of a line in different forms?

Find the area and perimeter of basic shapes involving algebraic sides.

How do you set-up and solve an equation involving proportions?

Total Days: 3

Plane Figures:

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
2	4.G - 1, 4.G - 2, 4.MD - 5, 4.MD - 6, 4MD - 7, 5.G - 1, 5.G - 2, 7.RP - 1, 7.G - 5, 8.EE - 6., 8.G - 5, 8.G - 6, 8.G - 7, 8.G - 8, N.RN - 2 Current: N.Q - 2: Define appropriate quantities for the purpose of descriptive modeling. N. Q.MA - 3a: Describe the effects of approximate error in measurement and rounding on measurements and on computed values from measurements. Identify significant figures in	Review topics for Pre-Test – <ul style="list-style-type: none"> Identify and/or recognize: points, lines, planes, segments, rays, planes, Be able to measure segments/angles Know how to use the coordinate plane Graph lines Find the slope between two points Write the equation of a line Know the sum of the 	<u>Level 0:</u> 1.1, 1.2, 1.4, 1.5, 3.4, 3.5, 3.6, 4.1, 6.1, 7.1 & pgs. 430, 878 <u>Level 1:</u> 1.2, 1.3, 1.4, 1.6, 3.6, 4.1, 8.1, 9.2 & pgs. 522, 792, 793, 795 <u>Level 2:</u> 1.2, 1.3, 1.4, 1.6, 2.5, 3.3, 3.5, 8.1, 7.2 & pg. 151	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration KWL 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs Review skills practice test Review skills test

	recorded measures and computed values based on the context given and the precision of the tools used to measure.	interior angles of triangles <ul style="list-style-type: none">• Know how to determine if two lines are parallel or perpendicular• Identify and/or recognize special pairs of angles (vertical, complementary, supplementary, alternate interior, alternate exterior, corresponding)• Find area, perimeter or circumference• Simplify ratios• Solve proportions• Determine sides of right triangle using the Pythagorean Theorem• Simplify radicals			
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Unit 2: Two and Three Dimensional Figures

Essential Questions:

How can Cavalieri's principle be used to represent volume?

How can Volume be used to solve problems in real life?

Total Days: 4

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Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
2	<p>G.GMD – 1: Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. <i>Use dissection arguments, Cavalieri's principle, and informal limit arguments.</i></p> <p>G.GMD – 3: Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems</p> <p>G.MG – 1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).</p>	<ul style="list-style-type: none"> Derive the formulas for the volume of a cylinder, pyramid, cone and sphere and use them to find the volume of figures that are representative of those shapes. 	<p><u>Level 0:</u> 12.4, 12.5, 12.6</p> <p><u>Level 1:</u> 12.4, 12.5, 12.6</p> <p><u>Level 2:</u> 10.5, 10.6, 10.7</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Application 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	<p>G.GMD – 1: Give an informal argument for the formulas for the circumference of a circle, area of a</p>	<ul style="list-style-type: none"> Apply Cavalieri's principle to volume of three dimensional geometric 	<p><u>Level 0:</u> 12.4</p> <p><u>Level 1:</u></p>	<ul style="list-style-type: none"> Discussion Cooperative Learning 	<ul style="list-style-type: none"> Homework Worksheets

	<p>circle, volume of a cylinder, pyramid, and cone. <i>Use dissection arguments, Cavalieri's principle, and informal limit arguments.</i></p> <p>G.GMD – 2: Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures.</p> <p>G.GMD – 4: Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.</p>	<p>figures.</p>	<p>12.4 <u>Level 2:</u> 10.5</p>	<ul style="list-style-type: none"> • Lecture • Exploration • Application 	<ul style="list-style-type: none"> • Quizzes • Test • Whiteboards • Type 2 & 3 WACs
<p>1 total</p>	<p>G.MG – 1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).</p> <p>G.MG – 2: Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).</p> <p>G.MG – 3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).</p> <p>G.MG.MA – 4: Use dimensional analysis for unit conversions to confirm that expressions and equations make sense.</p>	<ul style="list-style-type: none"> • Solve real world problems using surface area and volume. 	<p><u>Level 0:</u> Throughout chapter 12</p> <p><u>Level 1:</u> Throughout chapter 12</p> <p><u>Level 2:</u> Throughout chapter 10</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration • Application 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs • Surface Area and Volume Castle • Open Box Problem

Unit 3: Transformations

Essential Questions:

What does it mean to transform?

What are the main differences between the group of rigid transformations and dilations?

Total Days: 6

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Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
3	<p>Basics introduced in grade 8: 8.G – 1 – 8.G – 3.</p> <p>G.CO – 2: Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).</p> <p>G.CO – 3: Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.</p> <p>G.CO – 4: Develop definitions of rotations, reflections, and</p>	<ul style="list-style-type: none"> • Perform reflections over lines in the coordinate plane. • Identify reflections, rotations and translations performed in the coordinate plane. • State if a figure has been reflected, rotated or translated in a pre-image to image mapping. • Recognize if resulting images are isometries and state if the transformation performed was a rigid transformation. • Identify properties and occurrences of lines of symmetry or rotational 	<p><u>Level 0:</u> 9.1, 9.3, 9.4</p> <p><u>Level 1:</u> 7.2 – 7.4</p> <p><u>Level 2:</u> 12.1 – 12.3</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration • Sketchpad 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs

	<p>translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.</p> <p>G.CO – 5: Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.</p> <p>G.CO – 6: Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.</p>	<p>symmetry.</p>			
1	<p>G.CO – 5: Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.</p>	<ul style="list-style-type: none"> • State the composition of transformations in a correct/appropriate order. • Perform a sequence of transformations. 	<p><u>Level 0:</u> 9.5</p> <p><u>Level 1:</u> 7.5</p> <p><u>Level 2:</u> 12.4</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration • Sketchpad 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs • Transformations Project
1	<p>G.CO – 5: Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g.,</p>	<ul style="list-style-type: none"> • Perform reflections, rotations and translations that will result in the tessellations 	<p><u>Level 0:</u> Ext. pg. 616</p> <p><u>Level 1:</u> Proj. pg 452 – 453</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test

	graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.	of figures throughout a plane.	<u>Level 2:</u> 12.6	<ul style="list-style-type: none"> • Exploration • Sketchpad 	<ul style="list-style-type: none"> • Whiteboards • Type 2 & 3 WACs • Tessellations Project
1	<p>G.SRT – 1: Verify experimentally the properties of dilations given by a center and a scale factor:</p> <p>a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.</p> <p>b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.</p> <p>G.SRT – 2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.</p>	<ul style="list-style-type: none"> • Perform dilations in the coordinate plane. • Recognize dilations and determine the scale factor. • Recognize the connection between similar figures and dilated images. • Contrast the concept of dilations with the 3 rigid transformations. 	<u>Level 0:</u> 9.7 <u>Level 1:</u> 8.7 <u>Level 2:</u> 12.7	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration • Sketchpad 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs

Unit 4: Basics of Geometry

Essential Questions:

What are the differences between simplifying and rounding decimals?

How can one tell if two lines are parallel, perpendicular, neither or if they are the same line?

What are the differences between the processes of constructing perpendicular lines and perpendicular bisectors?

Total Days: 9

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1	G.CO – 1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. G.GPE – 6: Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	<p>Bisecting Angles</p> <ul style="list-style-type: none"> Identify the bisector of an angle. Be able to determine if two adjacent angles are congruent/determine if the angle has been bisected. <p>Be able to determine angle measure depending on given information regarding the angle bisector.</p>	<p><u>Level 0:</u> 1.4</p> <p><u>Level 1:</u> 1.5</p> <p><u>Level 2:</u> 1.5</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration KWL 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.CO – 1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. G.GPE – 6: Find the point on a directed line segment between	<p>Bisecting Segments:</p> <ul style="list-style-type: none"> Identify the midpoint of a segment. Determine if a segment or line is a bisector of a segment. Find point along a segment by using the 	<p><u>Level 0:</u> 1.3</p> <p><u>Level 1:</u> 1.3 & 1.5</p> <p><u>Level 2:</u> 1.6</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration KWL 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

	two given points that partitions the segment in a given ratio.	<p>midpoint formula.</p> <p>Lengths of Segments:</p> <ul style="list-style-type: none"> Determine the length of a segment using the distance formula. Determine if two segments are congruent. 			
1	G.GPE – 5: Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).	<p>Parallel/Perpendicular Lines</p> <ul style="list-style-type: none"> Identify if two lines are parallel, perpendicular or neither Graph a line parallel or perpendicular to another <p>Write the equation of a line that is parallel or perpendicular to another and passes through a given point on the line.</p>	<p><u>Level 0:</u> 3.4, 3.5, 3.6</p> <p><u>Level 1:</u> 3.6, 3.7</p> <p><u>Level 2:</u> 3.6</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Leading Questions 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.CO – 9: Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.	<p>Parallel Lines and Transversals</p> <ul style="list-style-type: none"> Identify the special pairs of angles given to parallel lines cut by a transversal. State the relationship between the angles. Justify conclusions about variables and/or angles using the parallel lines and transversals that create them. Given information about pairs of angles prove that the lines are parallel. 	<p><u>Level 0:</u> 3.2, 3.3</p> <p><u>Level 1:</u> 3.3, 3.4</p> <p><u>Level 2:</u> 3.1, 3.2</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Leading Questions 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.CO – 10: Prove theorems about triangles. <i>Theorems include:</i>	<p>Polygon Angle Sums:</p> <ul style="list-style-type: none"> Use knowledge of the 	<p><u>Level 0:</u> 4.1, Activity Pg. 506</p>	<ul style="list-style-type: none"> Discussion Cooperative 	<ul style="list-style-type: none"> Homework Worksheets

	<p><i>measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</i></p> <p>G.CO – MA.11a: Derive the formula for the relationship between the number of sides, sums of the interior, and sums of the exterior angles of polygons, and apply to solutions of mathematical and contextual problems. Prove theorems about polygons. Theorems include: measures of interior and exterior angles.</p>	<p>sum of the interior angles of a triangle to extend to the sum of the interior angles of any polygon.</p> <ul style="list-style-type: none"> Derive formula for the sum of the measures of the interior angles of any polygon. <p>Solve for the measure of the exterior angle of a polygon.</p>	<p>for 8.1 <u>Level 1:</u> 4.1, 11.1 <u>Level 2:</u> 3.3, 3.4</p>	<p>Learning</p> <ul style="list-style-type: none"> Lecture Exploration Investigation Graphic Organizer 	<ul style="list-style-type: none"> Quizzes Test Whiteboards Type 2 & 3 WACs Student investigation on interior angles and exterior angles (chart)
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Constructions:

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
½ - 1	<p>G.CO – 12: Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). <i>Copying a segment; copying an angle; bisecting a segment; bisecting an angle;</i></p>	<p>Angle Bisectors:</p> <ul style="list-style-type: none"> Using a compass, protractor, straightedge, sketchpad etc. construct the bisector of an angle.. 	<p><u>Level 0:</u> 1.4 (Activity pg. 33) <u>Level 1:</u> 1.5 <u>Level 2:</u> 1.5</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Sketchpad 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs Constructions

	<i>constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</i>				CFA
½ - 1	G.CO – 12: Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). <i>Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</i>	Parallel Lines: <ul style="list-style-type: none"> Using a compass, protractor, straightedge, sketchpad etc. construct a line parallel to a given line given a point not on the line. 	<u>Level 0:</u> 3.1 (pg. 152 #38) <u>Level 1:</u> Pg. 159 <u>Level 2:</u> 3.7	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Sketchpad 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs Constructions CFA
½ - 1	G.CO – 12: Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). <i>Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</i>	Perpendicular Lines: <ul style="list-style-type: none"> Using a compass, protractor, straightedge, sketchpad etc. construct a line perpendicular to a given line given a point not on the line. Using a compass, protractor, straightedge, sketchpad etc. construct a line perpendicular to a given line that also bisects the given line. 	<u>Level 0:</u> 1.4 <u>Level 1:</u> 1.5 <u>Level 2:</u> 3.7	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Sketchpad 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs Constructions CFA

Unit 5: Triangles

Essential Questions:

What is the difference between similar and congruent?

How can indirect measurement be used in real life situations?

Describe the information required to use the Law of Sines vs. The Law of Cosines?

Total Days: 21

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Comparing Two Triangles: Congruency

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
1	G.CO – 7: Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Congruent Polygons: <ul style="list-style-type: none"> Define what it means for two polygons to be congruent. Write a congruence statement for two congruent polygons Derive the “Third Angles Theorem” 	<u>Level 0:</u> 4.2 <u>Level 1:</u> 4.2 <u>Level 2:</u> 4.1	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.CO – 8: Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Prove Triangles are Congruent: <ul style="list-style-type: none"> Using SSS Using SAS Identify and define included angles 	<u>Level 0:</u> 4.3, 4.4 <u>Level 1:</u> 4.3 <u>Level 2:</u> 4.2	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Comparison 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.CO – 8: Explain how the criteria for triangle congruence (ASA,	Prove Triangles are Congruent: <ul style="list-style-type: none"> Using ASA 	<u>Level 0:</u> 4.5	<ul style="list-style-type: none"> Discussion 	<ul style="list-style-type: none"> Homework

	SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	<ul style="list-style-type: none"> Identify and define included sides Using AAS 	<u>Level 1:</u> 4.4 <u>Level 2:</u> 4.3	<ul style="list-style-type: none"> Cooperative Learning Lecture Exploration Comparison 	<ul style="list-style-type: none"> Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
2	HL Theorem is not directly in common core but works due to the Pythagorean Theorem and can be a derivation of SSS. Other info has been introduced in grades 4, 5 and 7 and thus need some review and added depth. (4.G – 2, 5.G – 3, 5.G – 4, 7.G - 2)	<p>Isosceles/equilateral and Right Triangles</p> <ul style="list-style-type: none"> Prove that two Triangles can be congruent using the HL Theorem (NOT IN COMMON CORE) Using the vertex and base angles of an isosceles triangle make conclusions regarding other measures of the triangle. <p>Inequalities in Triangles</p> <ul style="list-style-type: none"> Given information about the sides of a triangle be able to order the angles of the triangle and vice/versa. Using information regarding measures of triangle angles or sides determine if a triangle can exist 	<u>Level 0:</u> 4.4, 4.7, 5.5 <u>Level 1:</u> 4.6, 5.5 <u>Level 2:</u> 4.5, 4.6, 5.5	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Investigation 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

Comparing Two Triangles: Similarity

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
1	G.SRT – 2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	<p>Similar Polygons</p> <ul style="list-style-type: none"> Define what it means for two polygons to be similar Be able to calculate the scale factor of two similar polygons Use the scale factor to solve for missing measures of similar polygons Write similarity statements for similar polygons 	<p><u>Level 0:</u> 6.3</p> <p><u>Level 1:</u> 8.3</p> <p><u>Level 2:</u> 8.2</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Comparison 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.SRT – 2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. G.SRT – 3: Use the properties of similarity transformations to establish the Angle-Angle (AA) criterion for two triangles to be similar.	<p>Proving Triangles are Similar</p> <ul style="list-style-type: none"> Derive the AA Theorem and use it to prove two triangles are similar Use the SAS Similarity Theorem to prove two triangles are similar Use the SSS Similarity Theorem to prove two triangles are similar (review from day 1) 	<p><u>Level 0:</u> 6.4, 6.5</p> <p><u>Level 1:</u> 8.4, 8.5</p> <p><u>Level 2:</u> 8.3</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

	G.SRT – 5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.				
1	<p>G.SRT – 2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.</p> <p>G.SRT – 3: Use the properties of similarity transformations to establish the Angle-Angle (AA) criterion for two triangles to be similar.</p> <p>G.SRT – 5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.</p>	<p>Using Similar Triangles</p> <ul style="list-style-type: none"> Find missing measures using indirect measurement and two similar triangles 	<p><u>Level 0:</u> 6.4</p> <p><u>Level 1:</u> 8.5</p> <p><u>Level 2:</u> 8.3</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Investigation Application 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs Indirect Measurement Lab
1	G.SRT – 4: Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.	<p>Right Triangle Similarity</p> <ul style="list-style-type: none"> Solve for measures of right triangles given that a segment has divided one right triangle into two similar right triangles. 	<p><u>Level 0:</u> 7.3</p> <p><u>Level 1:</u> 9.1</p> <p><u>Level 2:</u> 8.4</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

1	<p>G.SRT – 2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.</p> <p>G.SRT – 4: Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.</p> <p>G.SRT – 5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.</p>	<p>Proportions in Triangles:</p> <ul style="list-style-type: none"> Determine which segments of triangles are proportional depending on how a segment intersects the sides of the triangle. 	<p><u>Level 0:</u> 6.6</p> <p><u>Level 1:</u> 8.6</p> <p><u>Level 2:</u> 8.5</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Comparison 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
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Special Segments in Triangles **with Constructions:**

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
1	<p>G.CO – 1: Prove theorems about triangles and when appropriate the converse. <i>Theorems include: measures of interior angles of a triangle sum to 180°; base angles</i></p>	<p>Midsegments of Triangles:</p> <ul style="list-style-type: none"> Know the properties of the midsegment of a triangle. Justify that a segment is a 	<p><u>Level 0:</u> 5.1</p> <p><u>Level 1:</u> 5.4</p> <p><u>Level 2:</u></p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards

	<p><i>of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</i></p>	<p>midsegment using slope and distance</p> <ul style="list-style-type: none"> Find the midpoint of triangle segments using constructions and/or algebra and create the midsegments of triangles. 	5.1	<ul style="list-style-type: none"> Sketchpad 	<ul style="list-style-type: none"> Type 2 & 3 WACs
1	<p>G.CO – 9: Prove theorems about lines and angles and when appropriate the converse. <i>Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.</i></p>	<p>Bisectors of Triangles:</p> <ul style="list-style-type: none"> Use the properties of segment and angle bisectors to make conclusions and solve for variable measures. 	<p><u>Level 0:</u> 5.2, 5.3 <u>Level 1:</u> 5.1, 5.2 <u>Level 2:</u> 5.2</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
2	<p>G.CO – 9: Prove theorems about lines and angles and when appropriate the converse. <i>Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.</i></p>	<p>Concurrency:</p> <ul style="list-style-type: none"> Understand the partnership between specific segments of triangles and their points of concurrency. Use the properties of the following points of concurrency to make conclusions and solve for variable measures: circumcenter, incenter, centroid and 	<p><u>Level 0:</u> 5.2 – 5.4 <u>Level 1:</u> 5.2, 5.3 <u>Level 2:</u> 5.3</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

	<p>G.CO – 10: Prove theorems about triangles and when appropriate the converse. <i>Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</i></p> <p>G.GPE – 6: Find the point on a directed line segment between two given points that partitions the segment in a given ratio.</p>	<p>orthocenter.</p>			
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Right Triangles and Trigonometry:

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
1	<p>Originally introduced in grade 8: 8.G – 6, 8.G – 7, 8.G – 8. Only requires depth, review done at beginning of year.</p> <p>G.SRT – 8: Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.</p> <p>G.MG – 1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a</p>	<ul style="list-style-type: none"> • Use the Pythagorean Theorem and its converse to determine if a triangle is acute, right or obtuse. • Combine with the distance formula and slope to verify a right triangle. 	<p><u>Level 0:</u> 7.1, 7.2</p> <p><u>Level 1:</u> 9.2, 9.3</p> <p><u>Level 2:</u> 7.2</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration • Leading Questions • KWL 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs

	human torso as a cylinder).				
1	G.SRT – 6: Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	<ul style="list-style-type: none"> Be able to use the side ratios of special right triangles to solve for variable measures. 	<u>Level 0:</u> 7.4 <u>Level 1:</u> 9.4 <u>Level 2:</u> 7.3	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Leading Questions 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
2	<p>G.SRT – 6: Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.</p> <p>G.SRT – 7: Explain and use the relationship between the sine and cosine of complementary angles.</p> <p>G.SRT – 8: Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems</p> <p>G.MG – 1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).</p>	<p>Trigonometric Ratios:</p> <ul style="list-style-type: none"> Derive the trigonometric ratios (sine, cosine and tangent) Use the trigonometric ratios to solve for missing measures of triangles. In solving for angles of triangles understand the difference between angles of elevation and depression as they relate to real life situations. 	<u>Level 0:</u> 7.5, 7.6 <u>Level 1:</u> 9.5 <u>Level 2:</u> 9.1 – 9.3	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Drill and Practice Application 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.CO – MA.11a: Derive the formula for the relationship between the number of sides, sums of the interior, and sums of the exterior angles of polygons, and apply to solutions of	<p>Trigonometry and Area:</p> <ul style="list-style-type: none"> Use the apothem and perimeter to find the area of regular polygons. Derive the formula; $\frac{1}{2}absinC$ from 	<u>Level 0:</u> 11.6 (apothem), PH Alg. 2 14.3 <u>Level 1:</u> 11.2 (apothem), PH Alg. 2 14.3	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Drill and 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3

	<p>mathematical and contextual problems. Prove theorems about polygons. <i>Theorems include: measures of interior and exterior angles.</i></p> <p>G.SRT – 9: Derive the formula $A = \frac{1}{2}ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.</p>	<p>the area of a right triangle and the sine ratio and use it to find the area of a non-right triangle.</p>	<p><u>Level 2:</u> 9.5 (apothem), PH Alg. 2 14.3</p>	<ul style="list-style-type: none"> Practice Application 	<p>WACs</p>
2	<p>G.SRT – 10: Prove the Laws of Sines and Cosines and use them to solve problems.</p> <p>G.SRT – 11: Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).</p>	<ul style="list-style-type: none"> Use the Law of Sines and Cosines to find missing variable measures in non-right triangles. Recognize when to use either law depending on given information. Use the Law of Sines and Cosines to solve problems modeling real life situations. 	<p><u>Level 0:</u> PH Alg. 2 14.3, 14.4</p> <p><u>Level 1:</u> PH Alg. 2 14.3, 14.4</p> <p><u>Level 2:</u> PH Alg. 2 14.3, 14.4</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Investigation Comparison Drill and Practice 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs MIDTERM

Unit 6: Quadrilaterals

Essential Questions:

Given a graph of a quadrilateral what can be used to determine its classification?

What are the differences between the properties of: parallelograms, rhombuses, squares, rectangles, kites and trapezoids?

Total Days:4

Geometry Unit Guide 2017 – 2018

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
½	Introduced in grade 5 (5.G – 4). Add depth/application problems: G.MG -1 : Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).	<ul style="list-style-type: none"> Classify polygons by their sides and angles. Name polygons by their sides Identify and recognize polygons in real world applications 	<u>Level 0:</u> 1.6 <u>Level 1:</u> 6.1 <u>Level 2:</u> 6.1	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Leading Questions Graphic Organizer 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1.5	G.CO – 11: Prove theorems about parallelograms and when appropriate the converse . <i>Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.</i>	<ul style="list-style-type: none"> Identify the properties of parallelograms. Use the properties to justify/prove if a quadrilateral is a parallelogram 	<u>Level 0:</u> 8.2, 8.3 <u>Level 1:</u> 6.2, 6.3 <u>Level 2:</u> 6.2, 6.3	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Graphic Organizer 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
2	Introduced in grade 5 (5.G – 4). G.CO – 11: Prove theorems about parallelograms. <i>Theorems include: opposite sides are congruent, opposite angles are</i>	<ul style="list-style-type: none"> Identify, compare and contrast the properties of special parallelograms: Rhombus, rectangle, and square. 	<u>Level 0:</u> 8.4, 8.5 <u>Level 1:</u> 6.4, 6.5 <u>Level 2:</u>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards

	<p><i>congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.</i></p> <p>G.MG – 1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).</p>	<ul style="list-style-type: none"> • Identify, compare and contrast the properties of the trapezoid and kite. Use these properties to solve for variable measures in real life problems. • Apply slope and the distance formula to figures plotted on the coordinate plane in order to classify/name the polygon. Combine calculations to definitions to support/justify reasoning. 	6.4, 6.5	<ul style="list-style-type: none"> • Compare and Contrast • Graphic Organizer 	<ul style="list-style-type: none"> • Type 2 & 3 WACs
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Unit 7: Circles and Conic Sections

Essential Questions:

What is the connection between the equation of a circle and the Pythagorean Theorem and/or the Distance Formula?

What is the relationship between arc length and circumference? Between area of a sector and area?

Total Days: 8

Geometry Unit Guide 2017 – 2018

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
1	G.C – 1: Prove that all circles are similar. G.C – 2: Identify and describe relationships among inscribed angles, radii, and chords. <i>Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</i> G.C – 4: Construct a tangent line from a point outside a given circle to the circle.	<ul style="list-style-type: none"> Be able to recognize/label/identify the parts of a circle. Define major and minor arc's and their connection to the central angle of a circle Use the arc addition postulate to determine the measure of the arc of a circle. 	<u>Level 0:</u> 10.1, 10.2 <u>Level 1:</u> 10.1, 10.2 <u>Level 2:</u> 7.6	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Investigation Comparison 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	G.C – 2: Identify and describe relationships among inscribed angles, radii, and chords. <i>Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the</i>	<ul style="list-style-type: none"> Determine the measure of an arc given an inscribed angle and vice versa. Combine with the arc addition postulate to solve for variable 	<u>Level 0:</u> 10.4 <u>Level 1:</u> 10.3 <u>Level 2:</u> 11.3	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3

	<p><i>radius of a circle is perpendicular to the tangent where the radius intersects the circle.</i></p> <p>G.C – 3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.</p>	measures in circles.			WACs
1	<p>G.C – 2: Identify and describe relationships among inscribed angles, radii, and chords. <i>Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</i></p> <p>G.C – 3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.</p> <p>G.C – 5: Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.</p>	<ul style="list-style-type: none"> Using knowledge of ratios and proportions derive the formulas for the length of an arc and the area of a sector. Use the formula for arc length to determine: arc measure, arc length, the circle's radius/ diameter or the circle's circumference. Use the formula for the area of a sector to determine: sector area, circle area, radius/diameter or the measure of the arc. 	<p><u>Level 0:</u> 11.4, 11.5</p> <p><u>Level 1:</u> 11.4, 11.5</p> <p><u>Level 2:</u> 7.6, 7.7</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	<p>G.C – 2: Identify and describe relationships among inscribed angles, radii, and chords. Include</p>	<ul style="list-style-type: none"> Identify and construct tangent lines to circles. Use previously learned 	<p><u>Level 0:</u> 10.1</p> <p><u>Level 1:</u></p>	<ul style="list-style-type: none"> Discussion Cooperative Learning 	<ul style="list-style-type: none"> Homework Worksheets Quizzes

	<p>the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</p> <p>G.C – 4: Construct a tangent line from a point outside a given circle to the circle.</p>	<p>theorems (ex. Pythagorean Theorem) to solve for variable measures relating to tangent lines (ex. The radius of a circle, missing angles within a right triangle inscribed in a circle)</p> <ul style="list-style-type: none"> Equilateral triangles, squares, and regular hexagons inscribed in circles. 	<p>10.1 <u>Level 2:</u> 11.1</p>	<ul style="list-style-type: none"> Lecture Exploration Leading Questions Ticket to Leave 	<ul style="list-style-type: none"> Test Whiteboards Type 2 & 3 WACs Tangents CFA
1	<p>G.C – 2: Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</p>	<ul style="list-style-type: none"> Use Properties of chords to solve for variable measures in a circle. Combine with the arc addition postulate to further solve for additional measures in a circle. 	<p><u>Level 0:</u> 10.3 <u>Level 1:</u> 10.2 <u>Level 2:</u> 11.2</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Leading Questions 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
1	<p>G.C – 2: Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</p>	<ul style="list-style-type: none"> Use secants, chords and tangent lines to determine the measures of: segments of intersecting chords in the interior of a circle, the measure of arcs along the circle, the measure of angles created by two intersecting tangents or secants in the exterior of the circle, and the length of segments stemming from a point on the exterior of a circle. 	<p><u>Level 0:</u> 10.5, 10.6 <u>Level 1:</u> 10.4, 10.5 <u>Level 2:</u> 11.4</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration KWL 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

1	<p>G.GPE – 1: Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.</p> <p>G.GPE – 4: Use coordinates to prove simple geometric theorems algebraically including the distance formula and its relationship to the Pythagorean Theorem. <i>For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$.</i></p> <p>G.MG – 1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).</p>	<ul style="list-style-type: none"> • Derive the equation of a circle. • Graph a circle given its equation. • Write the equation of a circle: given the graph of a circle and the center and radius, the center and point along the edge of a circle. • Determine if a point in the coordinate plane will fall inside, on or outside of a circle. 	<p><u>Level 0:</u> 10.7</p> <p><u>Level 1:</u> 10.6</p> <p><u>Level 2:</u> 11.5</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration • Leading Questions • Application 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs
1	<p>G.GPE – 2: Derive the equation of a parabola given a focus and directrix.</p>	<ul style="list-style-type: none"> • Derive the equation of a parabola. • Use the equation of a parabola to graph the parabola and find the focus and directrix. • Using a graph of a parabola determine its equation with the help of the focus and directrix. 	<p><u>Level 0:</u> PH Alg 2 10.2, 10.6</p> <p><u>Level 1:</u> PH Alg 2 10.2, 10.6</p> <p><u>Level 2:</u> PH Alg 2 10.2, 10.6</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs

Unit 8: Statistics and Probability

Essential Questions:

What is the difference between Experimental and Theoretical Probability?

What is the difference between Combinations and Permutations?

How can one distinguish between an independent and dependent event?

Total Days: 8

Geometry Unit Guide 2017 – 2018

Days	Common Core Standards (blue book)	Skills	Resources/Sections (text book)	Instructional Strategies	Assessments
2	<p>S.CP – 1: Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).</p> <p>S.CP – 3: Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.</p> <p>S.CP – 5: Recognize and explain the concepts of conditional probability and independence in everyday language and everyday</p>	<p>Experimental/theoretical probability:</p> <ul style="list-style-type: none"> Determine the probability of an event taking place. Place events into subsets of unions, intersections. Find the complement of an event taking place. Determine if the probability of an event taking place is independent or dependent. Apply experimental/theoretical probability to real life situations. Interpret data from simulations or experiments. 	<p><u>Level 0:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 1:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 2:</u> Pearson Common Core Geometry Ch. 13</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Comparison Application Leading Questions 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

	<p>situations. <i>For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.</i></p> <p>S.CP – 6: Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.</p> <p>S.MD – 6: Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).</p> <p>S.MD – 7: Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game and replacing with an extra skater).</p>				
2	<p>S.CP – 4: Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. <i>For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly</i></p>	<p>Distributions/frequency tables:</p> <ul style="list-style-type: none"> • Develop a frequency table using probability data. • Use the data from the table to determine the probability of an event taking place. Model events in the form of real life applications. • Interpret data from simulations or experiments. 	<p><u>Level 0:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 1:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 2:</u> Pearson Common Core Geometry Ch. 13</p>	<ul style="list-style-type: none"> • Discussion • Cooperative Learning • Lecture • Exploration • Comparison • Application 	<ul style="list-style-type: none"> • Homework • Worksheets • Quizzes • Test • Whiteboards • Type 2 & 3 WACs

	<i>selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.</i>				
2	S.CP – 9: Use permutations and combinations to compute probabilities of compound events and solve problems.	<p>Permutations/Combinations:</p> <ul style="list-style-type: none"> Determine the number of ways events could take place. Compare and contrast the happenings of events based off of the importance of order (Combination vs. Permutation). Use both permutations and combinations to determine the probability of an event taking place. 	<p><u>Level 0:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 1:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 2:</u> Pearson Common Core Geometry Ch. 13</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Comparison Application 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs
2	<p>S.CP – 2: Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.</p> <p>S.CP – 3: Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and</p>	<p>Compound Probability:</p> <ul style="list-style-type: none"> Determine the probability of two or more events occurring independently or simultaneously 	<p><u>Level 0:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 1:</u> Pearson Common Core Geometry Ch. 13</p> <p><u>Level 2:</u> Pearson Common Core Geometry Ch. 13</p>	<ul style="list-style-type: none"> Discussion Cooperative Learning Lecture Exploration Comparison Application 	<ul style="list-style-type: none"> Homework Worksheets Quizzes Test Whiteboards Type 2 & 3 WACs

	<p>the conditional probability of B given A is the same as the probability of B.</p> <p>S.CP – 7: Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.</p> <p>S.CP – 8: Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.</p>				
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Total days not including: quizzes, tests, MCAS, review days, final exam days, “midterms”/pretests, presentations etc: 62

Total # of expected class days not factoring in half days, pep rallies etc: 90