

Honors Geometry Curriculum

Chambersburg Area School District

Course Map Timeline (40 min classes) 2016

Units	Suggested Days
*Note: unit numbers are for reference only and do not indicate the order in which concepts need to be taught	
Unit 1: Foundations for Geometry	13 Days
Unit 2: Geometric Reasoning	15 Days
Unit 3: Parallel and Perpendicular Lines	12 Days
Unit 4: Triangle Congruence	19 Days
Unit 5: Properties and Attributes of Triangles	15 Days
Unit 6: Polygons and Quadrilaterals	14 Days
Unit 7: Similarity	12 Days
Unit 8: Right Triangles and Trigonometry	15 Days
Unit 9: Extending Transformational Geometry	11 Days
Unit 10: Extending Perimeter Circumference and Area	12 Days
Unit 11: Spatial Reasoning	8 Days
Unit 12: Circles	17 Days

*Honors Geometry will include more in depth proofs and application problems. This is needed to expose students to the mathematical logic and reasoning for advanced math courses.

Topic: Unit 1 Foundations for Geometry
Subject(s): Math

Days: 13
Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **Plane geometry can be derived from three undefined terms.**
- **Coordinate geometry provides a framework for connecting geometry to algebra.**

Unit Essential Question(s):

- **What are the three undefined terms?**
- **How are the three undefined terms used to establish definitions in geometry?**
- **How do the rules of geometry apply to the coordinate plane?**

Concept:	Concept:	Concept:
Understanding Points, Lines, and Planes	Measuring & Constructing Segments & Angles	Pairs of Angles
CC.2.3.HS.A.3	CC.2.3.HS.A.3	CC.2.3.HS.A.3
Lesson Essential Question(s): What are the undefined terms? (A) What is their importance in geometry? (A) What is the difference between a line, a ray, and a line segment? (ET)	Lesson Essential Question(s): How are the lengths of segments used to determine congruency? (ET) What is segment addition and how is it used? (A) What are angles and how are they measured? (A) How are measures of angles used to determine congruency? (ET) What is angle addition and how is it used? (A)	Lesson Essential Question(s): How do we identify adjacent and vertical angles? (A) How do we identify complementary and supplementary angles? (A) How can we calculate the measures of pairs of angles? (A)
Vocabulary: geometry, point, line, plane, space, postulate, collinear, coplanar, line segment, ray, congruent, segment addition, midpoint, segment	Vocabulary: congruent, segment addition, midpoint, segment bisector, compass, vertex, angle, acute angle, right angle, obtuse angle, straight angle, angle addition, protractor	Vocabulary: complementary angles, supplementary angles, vertical angles, linear pairs, adjacent angles

Concept:	Concept:
Using Formulas in Geometry	Midpoint & Distance in the Coordinate Plane
CC.2.3.HS.A.3	CC.2.3.HS.A.3, CC.2.3.HS.A.11
Lesson Essential Question(s): How can we apply the formulas for perimeter, circumference, and area? How do we find a missing length when the perimeter or circumference is known? (ET) How do we find a missing length when the area is known? (ET)	Lesson Essential Question(s): How can the midpoint of a segment be determined on the coordinate plane? (A) How can the Pythagorean Theorem be used to derive the distance formula? (A) How can the distance formula be used to solve problems and prove conjectures? (A)
Vocabulary: perimeter, area, base, height, diameter, radius, circumference, π (pi)	Vocabulary: x-coordinate, y-coordinate, midpoint formula, distance, length, distance formula

Topic: Unit 2 Reasoning and Proofs
Subject(s): Math

Days: 15
Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **Conditional statements underlie and support geometric reasoning.**

Unit Essential Question(s):

- **How do conditional statements support geometric reasoning?**
- **What strategies can we use to draw conclusions in geometry?**

Concept:	Concept:	Concept:
Types of Reasoning	Statements of Logic	Constructing Proofs
CC.2.3.HS.A.3	CC.2.3.HS.A.3	CC.2.3.HS.A.11
Lesson Essential Question(s): What is the difference between inductive and deductive reasoning? (A) How do we use inductive reasoning to make conjectures? (A) How do we use deductive reasoning to draw conclusions? (A) How can we disprove conjectures? (A)	Lesson Essential Question(s): What are the different kinds of conditional statements? (A) How do we determine the truth value of a conditional statement? (A) How is a biconditional statement composed? (A)	Lesson Essential Question(s): What are proofs? (A) Why are proofs necessary? (A) How do you construct a proof? (A) Why are justifications necessary when constructing a proof? (ET)
Vocabulary: inductive reasoning, deductive reasoning, Law of Detachment, Law of Syllogism, counter-example, conjecture	Vocabulary: hypothesis, conclusion, conditional statement, converse, inverse, contrapositive, biconditional, truth value	Vocabulary: given, corollary, proof, algebraic proof, geometric proof, theorem

Topic: Unit 3 Parallel and Perpendicular Lines
Subject(s): Math

Days: 12
Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **Special relationships apply to angles formed by parallel and intersecting lines and planes.**

Unit Essential Question(s):

- **What relationships exist between the angles formed by lines intersected by a transversal?**
- **How do we use those relationships?**

Concept:	Concept:	Concept:
Lines and Angles	Parallel Lines and Transversals	Slopes of Lines
CC.2.3.HS.A.3	CC.2.3.HS.A.3	CC.2.3.HS.A.3, CC.2.3.HS.A.11
Lesson Essential Question(s): What is the difference between parallel, perpendicular, and skew lines? (A) How do we classify pairs of angles formed by two lines and a transversal? (A) What relationship exists between planes? (ET)	Lesson Essential Question(s): What is the relationship between the measures of the angles formed when a transversal intersects two parallel lines? (A) How can we use the relationship between angles formed when a transversal intersects two parallel lines to solve problems? (A) How can lines be proven parallel by using angle pair relationships? (A)	Lesson Essential Question(s): How do we find the slope of a line? (ET) How can you use slope to determine if lines are parallel, perpendicular, or neither? (ET) How can we prove two lines are perpendicular? (A)
Vocabulary: perpendicular, parallel, skew, corresponding angles, alternate interior angles, consecutive (same-side) interior angles, alternate exterior angles, transversal	Vocabulary:	Vocabulary: slope(formula), perpendicular bisector

Concept:**Lines in the Coordinate Plane**

CC.2.3.HS.A.3, CC.2.3.HS.A.11

Lesson Essential Question(s):

How can we classify lines as parallel, intersecting, or coinciding? (A)

How can we write the equation of a line in slope-intercept form and point-slope form? (A)

How do we write the equation of a line parallel to a given line? (A)

How do we write the equation of a line perpendicular to a given line? (A)

Vocabulary:

Point-slope form, slope-intercept form, vertical, horizontal, intersecting lines, coinciding lines

Topic: Unit 4 Triangle Congruence
Subject(s): Math

Days: 19
Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- The classification and given information about triangles can be used to determine congruency.

Unit Essential Question(s):

- How can congruency of two triangles be determined?

Concept:	Concept:	Concept:
Congruence and Transformations	Classifying Triangles	Angle Relationships in Triangles
CC.2.3.HS.A.2, CC.2.3.HS.A.3	CC.2.3.HS.A.3	CC.2.3.HS.A.3
Lesson Essential Question(s): How can we draw transformations in the coordinate plane? (A)	Lesson Essential Question(s): What are the different types of triangles based on side measure? (ET)	Lesson Essential Question(s): What is the interior angle sum of a triangle? (A)
How can we identify transformations in the coordinate plane? (A)	What are the different types of triangles based on angle measure? (ET)	What is the exterior angle sum of a triangle? (A)
How can we describe transformations in the coordinate plane? (A)	How can we use triangle classifications to find side lengths and angle measures? (A)	What is the relationship between an exterior angle of a triangle and its remote interior angles? (A)
Vocabulary: dilation, isometry, rigid transformation	Vocabulary: acute, right, obtuse, equilateral, equiangular, scalene, isosceles	Vocabulary: auxiliary line, corollary, remote interior angle, interior angle sum, exterior angle sum

Concept:	Concept:	Concept:
Triangle Congruence	Isosceles and Equilateral Triangles	Coordinate Proof & Triangles
CC.2.3.HS.A.2, CC.2.3.HS.A.3	CC.2.3.HS.A.3	CC.2.3.HS.A.3, CC.2.3.HS.A.11
Lesson Essential Question(s): How can we identify corresponding parts of congruent triangles? (A)	Lesson Essential Question(s): How can we prove theorems about equilateral and isosceles triangles? (A)	Lesson Essential Question(s): How do we position figures in the coordinate plane for use in coordinate proofs? (A)
What are the ways to prove triangles congruent? (A)	How can we use properties of equilateral and isosceles triangles to find missing measures of triangles? (A)	How do we prove geometric concepts using coordinate proofs? (A)
What relationships exist between corresponding parts of congruent triangles? (ET)	How can we prove theorems about isosceles and equilateral triangles? (A)	How do we determine what kind of proof can be utilized in any given scenario? (A)
What strategy can be used to prove that overlapping triangles are congruent? (ET)		
Vocabulary: corresponding angles, corresponding sides, congruent polygons, congruent triangles, SSS, SAS, ASA, AAS, HL, included angles, included side, CPCTC	Vocabulary: legs, vertex angle, base angles	Vocabulary:

***Note: The Honors level course should include more in depth investigation of proofs and application for this topic**

Topic: Unit 5 Properties and Attributes of Triangles
Subject(s): Math

Days: 15
Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **The classification and properties of triangles can be determined by their distinct characteristics.**

Unit Essential Question(s):

- **What special properties exist for each type of triangle?**

Concept:	Concept:	Concept:
Perpendicular & Angle Bisectors	Bisectors, Medians and Altitudes of Triangles	The Triangle Midsegment Theorem
CC.2.3.HS.A.3	CC.2.3.HS.A.3	CC.2.3.HS.A.3, CC.2.3.HS.A.11
Lesson Essential Question(s): What are perpendicular and angle bisectors? (ET) How can we prove theorems about perpendicular bisectors? (A) How can we prove theorems about angle bisectors? (A)	Lesson Essential Question(s): How can we apply properties of perpendicular bisectors of a triangle? (A) How can we apply properties of angle bisectors of a triangle? (A) How can we apply properties of medians of a triangle? (A) How can we apply properties of altitudes of a triangle? (A)	Lesson Essential Question(s): What is the midsegment of a triangle? (A) How can we use properties of midsegments of triangles to prove theorems? (A) How can we use midsegments to find missing side and angle measures of triangles? (A)
Vocabulary: equidistant, locus,	Vocabulary: concurrent, point of concurrency, circumcenter, circumscribed, incenter, inscribed, median, centroid, altitude, orthocenter	Vocabulary: midsegment,

Concept:	Concept:	Concept:
Indirect Proof, Inequalities in One and Two Triangles	The Pythagorean Theorem	Applying Special Right Triangles
CC.2.3.HS.A.3	CC.2.2.HS.C.9, CC.2.3.HS.A.3, CC.2.3.HS.A.7	CC.2.3.HS.A.2, CC.2.3.HS.A.3
Lesson Essential Question(s): How do we write an indirect proof? (A) How can the existence of a triangle be determined? (A) How can we apply inequalities in one triangle to draw conclusions about the measures of sides and angles of a triangle? (A) How can we use inequalities in two triangles to make comparisons of the side and angle measures of triangles? (A)	Lesson Essential Question(s): How can we use the Pythagorean Theorem and its Converse find missing side lengths of triangles? (ET) How can we use Pythagorean Inequalities to classify triangles? (A) How can we use the Pythagorean Theorem to find missing lengths of a composite figure? (A)	Lesson Essential Question(s): How can we apply properties of 45° – 45° – 90° triangles? (A) How can we apply properties of 30° – 60° – 90° triangles? (A) How can we use the properties of special right triangles to find missing lengths of composite figures? (A)
Vocabulary: indirect proof	Vocabulary: Pythagorean triple	Vocabulary:

***Note: The Honors level course should include more in depth investigation of proofs and application for this topic.**

Topic: Unit 6 Polygons and Quadrilaterals
Subject(s): Math

Days: 14
Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- We classify polygons by examining their sides and angles.**

Unit Essential Question(s):

- How can we use the properties of polygons to describe their sides and angles?**

Concept:	Concept:	Concept:
Properties and Attributes of Polygons	Parallelograms: Properties and Conditions	Special Parallelograms: Properties and Conditions
CC.2.3.HS.A.3	CC.2.3.HS.A.3	CC.2.3.HS.A.3
Lesson Essential Question(s): How do we classify polygons? (A) How do we determine if a polygon is concave or convex? (A) How do we determine the size of angles in regular and irregular polygons? (A)	Lesson Essential Question(s): What are the properties of parallelograms? (A) How do we prove that a given quadrilateral is a parallelogram? (A) How do we use the properties of parallelograms to find missing side and angle measures? (A)	Lesson Essential Question(s): What are the properties of each special parallelogram? (A) How do we use the properties of special parallelograms to prove quadrilaterals? (A) How do we use properties of special parallelograms to find missing side and angle measures? (A)
Vocabulary: convex, concave, pentagon, hexagon, octagon, nonagon, decagon, dodecagon, n-gon, regular, irregular, polygon, diagonal	Vocabulary: parallelogram, opposite sides, opposite angles, consecutive sides, consecutive angles	Vocabulary: rhombus, rectangle, square, diagonals

Concept:
Properties of Kites and Trapezoids
CC.2.3.HS.A.3
Lesson Essential Question(s): What are the properties of kites and trapezoids? (A) Why is a trapezoid not a parallelogram? (A) What are the properties of the midsegment of a trapezoid? (A) How do we use the properties of kites and trapezoids to find missing side and angle measures? (A)
Vocabulary: base, midsegment, base angles, legs, isosceles trapezoid, kite

****Note: The Honors level course should include more in depth investigation of proofs and application for this topic.**

Topic: Unit 7 Similarity

Subject(s): Math

Days: 12

Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **Similar figures can be used to model real-life situations.**

Unit Essential Question(s):

- **How can similar figures be used to model real-life situations?**
- **How can similar figures be used to find missing lengths and angle measures?**

Concept:	Concept:	Concept:
Ratios in Similar Polygons	Similarity and Transformations	Triangle Similarity
CC.2.3.HS.A.2, CC.2.3.HS.A.3, CC.2.3.HS.A.6	CC.2.3.HS.A.1, CC.2.3.HS.A.2, CC.2.3.HS.A.3, CC.2.3.HS.A.6, CC.2.3.HS.A.11	CC.2.3.HS.A.2, CC.2.3.HS.A.3, CC.2.3.HS.A.6
Lesson Essential Question(s): How can figures be identified as similar? (A) How can we create and solve proportions to find missing parts of similar figures? (ET) How do we use ratios to make indirect measurements? (A) How do we use scale drawings to solve real-life problems? (A)	Lesson Essential Question(s): How do we draw and describe similarity transformations in the coordinate plane? (A) How can we use properties of similarity transformations to prove similarity? (A) How do we apply properties of similarity in the coordinate plane? (A) How can we use coordinate proofs to prove similarity? (A)	Lesson Essential Question(s): How can we prove similarity using AA, SSS, and SAS? (A) How can we use similarity to find measures of triangles? (A) How can we use properties of similar triangles to find segment lengths? (A) How can we apply proportionality and triangles angle bisector theorems? (A)
Vocabulary: similar, similar polygons, similarity ratios, scale, indirect measurement	Vocabulary: similarity transformation, coordinate proof, scale factor	Vocabulary: AA, SSS, SAS

***Note: The Honors level course should include more in depth investigation of proofs and application for this topic.**

Topic: Unit 8 Right Triangles and Trigonometry
 Subject(s): Math

Days: 15
 Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **The sides and angles of right triangles have a broad range of relationships that lead to many applications and uses.**

Unit Essential Question(s):

- **What are the different methods that can be used to solve a right triangle?**
- **When is each method appropriate?**

Concept:	Concept:	Concept:
Similarity in Right Triangles	Trigonometric Ratios	Angles of Elevation and Depression
CC.2.3.HS.A.2, CC.2.3.HS.A.3, CC.2.3.HS.A.6, CC.2.2.HS.C.9	CC.2.2.HS.C.9, CC.2.3.HS.A.3, CC.2.3.HS.A.7	CC.2.2.HS.C.9, CC.2.3.HS.A.3, CC.2.3.HS.A.7
Lesson Essential Question(s): How do we use geometric mean to find segment lengths in right triangles? (A) What strategy can we use to identify proportional relationships? (A) How do we apply similarity relationships in right triangles to solve problems? (A)	Lesson Essential Question(s): What are the trigonometric ratios? (A) How do we use trigonometric ratios to solve problems? (ET) How do we use trigonometric ratios to solve right triangles? (A) How can trigonometric ratios be used to solve real-world problems? (ET)	Lesson Essential Question(s): What is an angle of elevation and how is it formed? (A) What is an angle of depression and how is it formed? (A) How can we use angles of elevation and depression to solve real-world problems? (A)
Vocabulary: geometric mean	Vocabulary: trigonometric ratio, sine, cosine, tangent	Vocabulary: angle of elevation, angle of depression

Concept:
Law of Sines and Law of Cosines
CC.2.2.HS.C.9, CC.2.3.HS.A.3, CC.2.3.HS.A.7
Lesson Essential Question(s): What is the Law of Sines? (A) What is the Law of Cosines? (A) How can we use the Law of Sines and the Law of Cosines to solve triangles? (A)
Vocabulary: Law of Sines, Law of Cosines

***Note: The Honors level course should include more in depth investigation of proofs and application for this topic.**

Topic: Unit 9 Extending Transformational Geometry

Subject(s): Math

Days: 11

Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **The concepts of congruence, similarity, and symmetry can be understood from the perspective of geometric transformation.**

Unit Essential Question(s):

- **How do you determine the type of transformation that has occurred?**
- **What effects do transformations have on geometric figures?**

Concept:	Concept:	Concept:
Types of Transformations	Compositions of Transformations	Symmetry
CC.2.3.HS.A.1, CC.2.3.HS.A.2, CC.2.3.HS.A.3	CC.2.3.HS.A.1, CC.2.3.HS.A.2, CC.2.3.HS.A.3	CC.2.3.HS.A.1, CC.2.3.HS.A.2, CC.2.3.HS.A.3, CC.2.3.HS.A.5
Lesson Essential Question(s): How can we identify and draw reflections? (ET) How can we identify and draw translations? (ET) How can we identify and draw rotations? (ET) How do we identify and draw dilations? (ET)	Lesson Essential Question(s): How do we apply theorems about isometries? (A) How can we identify and draw a composition of transformations? (A) Does the order in which transformations are performed effect a composition of transformations? (A)	Lesson Essential Question(s): How can we identify and describe symmetry in geometric figures? (A) What is the difference between line symmetry and rotational symmetry? (A) How do we find the angle of rotational symmetry? (A)
Vocabulary: Isometry, center of dilation, enlargement, reduction	Vocabulary: composition of transformations, glide reflection	Vocabulary: symmetry, line symmetry, line of symmetry, rotational symmetry

Concept:
Tessellations
CC.2.3.HS.A.1, CC.2.3.HS.A.2, CC.2.3.HS.A.3, CC.2.3.HS.A.14
Lesson Essential Question(s): How can we use transformations to draw tessellations? (A) How do we identify regular and semiregular tessellations? (A) How can we identify figures that will tessellate? (A)
Vocabulary: translation symmetry, frieze pattern, glide reflection symmetry, tessellation, regular tessellation, semiregular tessellation

Topic: Unit 10 Extending Perimeter, Circumference and Area

Subject(s): Math

Days: 12

Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **Polygons can be described by their perimeter and area.**

Unit Essential Question(s):

- **How are polygons measured?**
- **What strategies and formulas can be used to find perimeter and area of polygons?**

Concept:	Concept:	Concept:
Developing Formulas for Perimeter and Area	Composite Figures	Perimeter and Area in the Coordinate Plane
CC.2.3.HS.A.3, CC.2.3.HS.A.8, CC.2.3.HS.A.14	CC.2.3.HS.A.3, CC.2.3.HS.A.8, CC.2.3.HS.A.14	CC.2.3.HS.A.3
Lesson Essential Question(s): How can we develop and apply formulas for the perimeters and areas of triangles and special quadrilaterals? (ET) How can we develop and apply formulas for the area and circumference of a circle? (ET) How can we develop and apply the formula for the area of a regular polygon? (A)	Lesson Essential Question(s): How can we use the properties of known figures to find missing measures of composite figures? (A) How can we find the areas of composite figures? (A) How can we use composite figures to estimate the area of an irregular shape? (A)	Lesson Essential Question(s): How do we find perimeters and areas in the coordinate plane? (ET) How can we estimate the perimeter and area of an irregular figure in the coordinate plane? (A) What are the different methods for finding perimeter and area in the coordinate plane? (A)
Vocabulary: apothem, central angle	Vocabulary: composite figure	Vocabulary:

Concept:	Concept:
Effects of Changing Dimensions Proportionally	Geometric Probability
CC.2.3.HS.A.3, CC.2.3.HS.A.13, CC.2.3.HS.A.14	CC.2.3.HS.A.3, CC.2.3.HS.A.14
Lesson Essential Question(s): How do we describe the effect on perimeter and area when one or more dimensions are changed? (A) How can we apply the relationship between perimeter and area when problem solving? (A)	Lesson Essential Question(s): What is geometric probability? (A) How do we calculate geometric probability? (A) How do we use geometric probability to predict results in real-world situations? (A)
Vocabulary:	Vocabulary: geometric probability

Topic: Unit 11 Spatial Reasoning

Days: 8

Subject(s): Math

Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **Geometric solids can be measured using lateral area, surface area and volume.**

Unit Essential Question(s):

- **How are geometric solids measured?**
- **How do you know which measure to use?**

Concept:	Concept:	Concept:
Solid Geometry	Surface Area and Volume	Problem Solving
CC.2.3.HS.A.3, CC.2.3.HS.A.13, CC.2.3.HS.A.14	CC.2.3.HS.A.3, CC.2.3.HS.A.8, CC.2.3.HS.A.12, CC.2.3.HS.A.14	CC.2.3.HS.A.3, CC.2.3.HS.A.12, CC.2.3.HS.A.13, CC.2.3.HS.A.14
Lesson Essential Question(s): How are geometric solids classified? (ET) How can we use nets and cross sections to analyze three-dimensional figures? (ET) Does the shape of a cross section change depending on where it is taken in a three-dimensional figure? (A)	Lesson Essential Question(s): How can we apply the formulas for prisms and cylinders to find surface area and volume? (ET) How can we apply the formulas for pyramids and cones to find surface area and volume? (ET) How can we apply formulas for a sphere to find surface area and volume? (ET)	Lesson Essential Question(s): How does a change in a linear dimension of a figure effect its surface area or volume? (ET) Given the surface area or volume, how do we find a missing measure? (ET)
Vocabulary: face, edge, vertex, prism, cylinder, pyramid, cone, cube, net, cross section	Vocabulary: surface area, volume, lateral area, slant height, diameter, radius	Vocabulary:

Topic: Unit 12 Circles

Subject(s): Math

Days: 17

Grade(s): 9th, 10th, 11th, 12th

Key Learning:

- **The properties of angles, arcs, chords, tangents and secants can be used to solve problems involving circles.**

Unit Essential Question(s):

- **What are the relationships between a circle and its arcs, lines, segments and angles?**
- **How do we use those relationships to solve problems?**

Concept:	Concept:	Concept:
Lines that Intersect Circles	Sector Area and Arc Length	Inscribed Angles and Their Relationships
CC.2.3.HS.A.3, CC.2.3.HS.A.8	CC.2.3.HS.A.3, CC.2.3.HS.A.8, CC.2.3.HS.A.9	CC.2.3.HS.A.3, CC.2.3.HS.A.8
Lesson Essential Question(s): What are the basic components of a circle? (A) How can we use properties of tangents to solve problems? (A) How do you determine the measure of an arc in a circle? (A) How do you determine the measure of a chord in a circle? (A)	Lesson Essential Question(s): How do we find the area of a sector of a circle? (A) How do we find the area of a segment of a circle? (A) How do we find the arc length of a circle? (A)	Lesson Essential Question(s): How do we find the measure of an inscribed angle? (A) How do we use inscribed angles and their properties to solve problems? (A) How do we find the measures of angles formed by lines that intersect circles? (A) How is the tangent of a circle related to the circle's radius at the point of tangency? (A)
Vocabulary: radius, diameter, chord, tangent, secant, arc, circle, arc measure, minor arc, major arc, semicircle	Vocabulary: sector of a circle, segment of a circle, arc length	Vocabulary: inscribed angle, intercepted arc, subtend, secant, tangent

Concept:	Concept:
Segment Relationships in Circles	Circles in the Coordinate Plane
CC.2.3.HS.A.3, CC.2.3.HS.A.8	CC.2.3.HS.A.3, CC.2.3.HS.A.8
Lesson Essential Question(s): What is the difference between secant lines and tangent lines? (A) How do we find the lengths of segments formed by lines that intersect circles? (A) How can we use the lengths of segments in circles to solve problems? (A)	Lesson Essential Question(s): How do we derive the equation of a circle? (A) How do we identify the center and radius of a circle given its equation? (A) How do we use the equation of a circle to solve problems? (A)
Vocabulary: secant segment, external secant segment, tangent segment	Vocabulary:

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