



# 2019-2020

## H.S. Geometry

### H.S. GEOMETRY SCOPE & SEQUENCE YEAR AT A GLANCE

SEMESTER 1					SEMESTER 2					
QUARTER 1		QUARTER 2			QUARTER 3			QUARTER 4		
Chapter 1 Basics of Geometry 3 weeks	Chapter 2 Reasoning and Proofs 3 weeks	Chapter 3 Parallel and Perpendicular Lines 3 weeks	Chapter 4 Transformations 2 weeks	Chapter 5 Congruent Triangles 3 weeks	Chapter 6 Relationships Within Triangles 3 weeks	Chapter 7 Quadrilaterals Other Polygons 3 weeks	Chapter 8 Similarity 3 weeks	Chapter 9 Right Triangles and Trigonometry 4 weeks	Chapter 10 Circles 3 weeks	Chapter 11 Circumference, Area, and Volume 3 weeks
<a href="#">G-GPE.7</a> <a href="#">G-MG.1</a> <a href="#">G-CO.1</a> <a href="#">G-CO.12</a>	<a href="#">G-CO.9</a> <a href="#">G-CO.10</a> <a href="#">G-CO.11</a> <a href="#">G-SRT.4</a>	<a href="#">G-GPE.5</a> <a href="#">G-GPE.6</a> <a href="#">G-CO.9</a> <a href="#">G-CO.1</a> <a href="#">G-CO.12</a>	<a href="#">G-CO.6</a> <a href="#">G-MG.3</a> <a href="#">G-SRT.1a</a> <a href="#">G-SRT.1b</a> <a href="#">G-CO.2</a> <a href="#">G-CO.3</a> <a href="#">G-CO.4</a> <a href="#">G-CO.5</a>	<a href="#">G-CO.7</a> <a href="#">G-CO.8</a> <a href="#">G-CO.10</a> <a href="#">G-MG.1</a> <a href="#">G-MG.3</a> <a href="#">G-SRT.5</a> <a href="#">G-GPE.4</a> <a href="#">G-CO.13</a>	<a href="#">G-CO.9</a> <a href="#">G-CO.10</a> <a href="#">G-MG.1</a> <a href="#">G-MG.3</a> <a href="#">G-CO.12</a> <a href="#">G-C.3</a>	<a href="#">G-CO.11</a> <a href="#">G-SRT.5</a> <a href="#">G-MG.1</a> <a href="#">G-MG.3</a>	<a href="#">G-SRT.2</a> <a href="#">G-SRT.3</a> <a href="#">G-SRT.5</a> <a href="#">G-SRT.4</a> <a href="#">G-MG.1</a> <a href="#">G-MG.3</a> <a href="#">G-GPE.5</a> <a href="#">G-GPE.6</a>	<a href="#">G-SRT.4</a> <a href="#">G-SRT.5</a> <a href="#">G-SRT.6</a> <a href="#">G-SRT.7</a> <a href="#">G-SRT.8</a> <a href="#">G-MG.1</a> <a href="#">G-MG.3</a> Omit 9.7 <a href="#">G-SRT.9 (+)</a> <a href="#">G-SRT.10 (+)</a> <a href="#">G-SRT.11 (+)</a>	<a href="#">G-MG.1</a> <a href="#">G-MG.3</a> <a href="#">G-GPE.1</a> <a href="#">G-GPE.4</a> <a href="#">G-CO.1</a> <a href="#">G-CO.13</a> <a href="#">G-C.1</a> <a href="#">G-C.2</a> <a href="#">G-C.3</a> <a href="#">G-C.4 (+)</a>	<a href="#">G-MG.1</a> <a href="#">G-MG.2</a> <a href="#">G-MG.3</a> <a href="#">G-CO.1</a> <a href="#">G-GMD.1</a> <a href="#">G-GMD.3</a> <a href="#">G-GMD.4</a> <a href="#">G-C.5</a> <a href="#">G-GMD.2 (+)</a>
SBAC IABs										
				<a href="#">Congruence</a>				<a href="#">Right Triangle Trigonometry</a>		<a href="#">Measurement and Modeling</a>

■ Major work of the grade  
 ■ Supporting work  
 ■ Additional work

Additional mathematics that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics is indicated by a plus symbol (+) and will not be assessed on SBAC.



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The fundamental purpose of the course in Geometry is to formalize and extend students' geometric experiences from the middle grades. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Important differences exist between this Geometry course and the historical approach taken in Geometry classes. For example, transformations are emphasized early in this course. Close attention should be paid to the introductory content for the Geometry conceptual category found in the high school CCSS. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. The critical areas, organized are as follows:

### ALGEBRA AND NUMBER QUANTITY THROUGH GEOMETRY

**Critical Area 1:** In previous grades, students were asked to draw triangles based on given measurements. They also have prior experience with rigid motions: translations, reflections, and rotations and have used these to develop notions about what it means for two objects to be congruent. In this unit, students establish triangle congruence criteria, based on analyses of rigid motions and formal constructions. They use triangle congruence as a familiar foundation for the development of formal proof. Students prove theorems—using a variety of formats—and solve problems about triangles, quadrilaterals, and other polygons. They apply reasoning to complete geometric constructions and explain why they work.

G-CO.1, G-CO.2, G-CO.3, G-CO.4, G-CO.5, G-CO.6, G-CO.7, G-CO.8, G-CO.9, G-CO.10, G-CO.11, G-CO.12, G-CO.13

**Critical Area 2:** Students apply their earlier experience with dilations and proportional reasoning to build a formal understanding of similarity. They identify criteria for similarity of triangles, use similarity to solve problems, and apply similarity in right triangles to understand right triangle trigonometry, with particular attention to special right triangles and the Pythagorean theorem. Students develop the Laws of Sines and Cosines in order to find missing measures of general (not necessarily right) triangles, building on students' work with quadratic equations done in the first course. They are able to distinguish whether three given measures (angles or sides) define 0, 1, 2, or infinitely many triangles.

G-SRT.1, G-SRT.2, G-SRT.3, G-SRT.4, G-SRT.5, G-SRT.6, G-SRT.7, G-SRT.8, G-MG.1, G-MG.2, G-MG.3 PLUS STANDARDS: G-SRT.9, G-SRT.10, G-SRT.11

**Critical Area 3:** Students' experience with two-dimensional and three-dimensional objects is extended to include informal explanations of circumference, area and volume formulas. Additionally, students apply their knowledge of two-dimensional shapes to consider the shapes of cross-sections and the result of rotating a two-dimensional object about a line.

G-GMD.1, G-GMD.3, G-GMD.4, G-MG.1

**Critical Area 4:** Building on their work with the Pythagorean theorem in 8th grade to find distances, students use a rectangular coordinate system to verify geometric relationships, including properties of special triangles and quadrilaterals and slopes of parallel and perpendicular lines, which relates back to work done in the first course. Students continue their study of quadratics by connecting the geometric and algebraic definitions of the parabola.

G-GPE.4, G-GPE.5, G-GPE.6, G-GPE.7



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**Critical Area 5:** In this unit students prove basic theorems about circles, such as a tangent line is perpendicular to a radius, inscribed angle theorem, and theorems about chords, secants, and tangents dealing with segment lengths and angle measures. They study relationships among segments on chords, secants, and tangents as an application of similarity. In the Cartesian coordinate system, students use the distance formula to write the equation of a circle when given the radius and the coordinates of its center. Given an equation of a circle, they draw the graph in the coordinate plane, and apply techniques for solving quadratic equations, which relates back to work done in the first course, to determine intersections between lines and circles or parabolas and between two circles.

G-C.1, G-C.2, G-C.3, G-C.5, G-GPE.1, G-GPE.4, G-MG.1

### STATISTICS AND PROBABILITY IN GEOMETRY

**Critical Area 6:** Building on probability concepts that began in the middle grades, students use the languages of set theory to expand their ability to compute and interpret theoretical and experimental probabilities for compound events, attending to mutually exclusive events, independent events, and conditional probability. Students should make use of geometric probability models wherever possible. They use probability to make informed decisions.

S-CP.1, S-CP.2, S-CP.3, S-CP.4, S-CP.5, S-CP.6, S-CP.7 PLUS STANDARDS: S-CP.8, S-CP.9



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## H.S. Geometry

### Geometry—Chapter 1

Lesson & Pacing	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> <b>1 day</b>	6.NS.7c 7.NS.3	Finding Absolute Value Finding the Area of a Triangle		<a href="#">Absolute value</a> <a href="#">Area of triangles</a>
<b>1.1</b> <b>1 day</b>	G.CO.1	Name points, lines, and planes. Name segments and rays. Sketch intersections of lines and planes. Solve real-life problems involving lines and planes.	<a href="#">Differentiating the Lesson 1.1</a>	<a href="#">Intro to Euclidean geometry</a> <a href="#">Points, lines, &amp; planes</a> <a href="#">Lines, segments, and rays</a>
<b>1.2</b> <b>1 day</b>	G.CO.1 G.CO.12	Use the Ruler Postulate. Copy segments and compare segments for congruence. Use the Segment Addition Postulate.	<a href="#">Differentiating the Lesson 1.2</a>	<a href="#">Equations and geometry</a> <a href="#">Measuring segments</a>
<b>1.3</b> <b>1 day</b>	G.CO.12 G.GPE.7	Find segment lengths using midpoints and segment bisectors. Use the Midpoint Formula. Use the Distance Formula.	<a href="#">Differentiating the Lesson 1.3</a>	<a href="#">Distance and midpoints</a> <a href="#">Equations and geometry</a>
<b>1.4</b> <b>1 day</b>	G.GPE.7 G.MG.1	Classify polygons. Find perimeters and areas of polygons in the coordinate plane.	<a href="#">Differentiating the Lesson 1.4</a>	<a href="#">Problem solving with distance on the coordinate plane</a>
<b>1.5</b> <b>2 days</b>	G.CO.1 G.CO.12	Name angles. Measure and classify angles. Identify congruent angles. Use the Angle Addition Postulate to find angle measures. Bisect angles.	<a href="#">Differentiating the Lesson 1.5</a>	<a href="#">Angles</a> <a href="#">Equations and geometry</a> <a href="#">Constructing bisectors of lines &amp; angles</a>
<b>1.6</b> <b>2 days</b>	G.CO.1	Identify complementary and supplementary angles. Identify linear pairs and vertical angles.	<a href="#">Differentiating the Lesson 1.6</a>	<a href="#">Angles</a> <a href="#">Equations and geometry</a> <a href="#">Missing angle problems</a>



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## H.S. Geometry

### Geometry—Chapter 2

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> <b>1 day</b>	F.BF.2 A.CED.4	Finding the $n$ th term of an Arithmetic Sequence Rewriting Literal Equations		<a href="#">Constructing arithmetic sequences</a> <a href="#">Linear Equations with Unknown Coefficients</a>
<b>2.1</b> <b>1 day</b>	G.CO.9 G.CO.10 G.CO.11 G.SRT.4	Write conditional statements. Use definitions written as conditional statements. Write biconditional statements. Make truth tables.	<a href="#">Differentiating the Lesson 2.1</a>	*Philosophy lesson: <a href="#">Language</a>
<b>2.2</b> <b>2 days</b>	G.CO.9 G.CO.10 G.CO.11 G.SRT.4	Use inductive reasoning. Use deductive reasoning.	<a href="#">Differentiating the Lesson 2.2</a>	<a href="#">Deductive and inductive reasoning</a>
<b>2.3</b> <b>1 day</b>	G.CO.9 G.CO.10 G.CO.11 G.SRT.4	Identify postulates using diagrams. Sketch and interpret diagrams.	<a href="#">Differentiating the Lesson 2.3</a>	Skills for this lesson are coming soon to Khan
<b>2.4</b> <b>2 days</b>	G.CO.9 G.CO.10 G.CO.11 G.SRT.4	Use Algebraic Properties of Equality to justify the steps in solving an equation. Use the Distributive Property to justify the steps in solving an equation. Use properties of equality involving segment lengths and angle measures.	<a href="#">Differentiating the Lesson 2.4</a>	Skills for this lesson are coming soon to Khan
<b>2.5</b> <b>1 day</b>	G.CO.9	Write two-column proofs. Name and prove properties of congruence.	<a href="#">Differentiating the Lesson 2.5</a>	Skills for this lesson are coming soon to Khan
<b>2.6</b> <b>2 days</b>	G.CO.9	Write flowchart proofs to prove geometric relationships. Write paragraph proofs to prove geometric relationships.	<a href="#">Differentiating the Lesson 2.6</a>	Skills for this lesson are coming soon to Khan



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### Geometry—Chapter 3

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> <b>1 day</b>	F.IF.6 A.CED.2	Finding the Slope of a Line Writing Equations of Lines		<a href="#">Slope</a> <a href="#">Slope-intercept intro</a>
<b>3.1</b> <b>1 day</b>	G.CO.1	Identify lines and planes. Identify parallel and perpendicular lines. Identify pairs of angles formed by transversals.	<a href="#">Differentiating the Lesson 3.1</a>	<a href="#">Angles between intersecting lines</a> <a href="#">Parallel and perpendicular</a>
<b>3.2</b> <b>2 days</b>	G.CO.9	Use properties of parallel lines. Prove theorems about parallel lines. Solve real-life problems.	<a href="#">Differentiating the Lesson 3.2</a>	<a href="#">Angles between intersecting lines</a>
<b>3.3</b> <b>2 days</b>	G.CO.9 G.CO.12	Use the Corresponding Angles Converse. Construct parallel lines. Prove theorems about parallel lines. Use the Transitive Property of Parallel Lines.	<a href="#">Differentiating the Lesson 3.3</a>	<a href="#">Angles between intersecting lines</a>
<b>3.4</b> <b>1 day</b>	G.CO.9 G.CO.12	Find the distance from a point to a line. Construct perpendicular lines. Prove theorems about perpendicular lines. Solve real-life problems involving perpendicular lines.	<a href="#">Differentiating the Lesson 3.4</a>	<a href="#">Constructing bisectors of lines &amp; angles</a>
<b>3.5</b> <b>2 days</b>	G.GPE.5 G.GPE.6	Use slope to partition directed line segments. Identify parallel and perpendicular lines. Write equations of parallel and perpendicular lines. Use slope to find the distance from a point to a line.	<a href="#">Differentiating the Lesson 3.5</a>	<a href="#">Dividing line segments</a> <a href="#">Parallel &amp; perpendicular lines on the coordinate plane</a> <a href="#">Equations of parallel &amp; perpendicular lines</a> <a href="#">Distance between a point &amp; a line</a>



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### Geometry—Chapter 4

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> <b>1 day</b>	8.G.1 8.G.4	Identifying Transformations Identifying Similar Figures		<a href="#">Introduction to rigid transformations</a> <a href="#">Definitions of similarity</a>
<b>4.1</b> <b>2 days</b>	G.CO.2 G.CO.4 G.CO.5 G.CO.6	Perform translations. Perform compositions. Solve real-life problems involving compositions.	<a href="#">Differentiating the Lesson 4.1</a>	<a href="#">Translations</a>
<b>4.2</b> <b>1 day</b>	G.CO.2 G.CO.3 G.CO.4 G.CO.5 G.CO.6 G.MG.3	Perform reflections. Perform glide reflections. Identify lines of symmetry. Solve real-life problems involving reflections.	<a href="#">Differentiating the Lesson 4.2</a>	<a href="#">Reflections</a>
<b>4.3</b> <b>2 days</b>	G.CO.2 G.CO.3 G.CO.4 G.CO.5 G.CO.6	Perform rotations. Perform compositions with rotations. Identify rotational symmetry.	<a href="#">Differentiating the Lesson 4.3</a> Videos to build the concept: <ul style="list-style-type: none"> <li>• <a href="#">Visualizing Rotations</a></li> <li>• <a href="#">Properties of Rotations</a></li> </ul>	<a href="#">Rotations</a> <a href="#">Symmetry</a>
<b>4.4</b> <b>1 day</b>	G.CO.5 G.CO.6	Identify congruent figures. Describe congruence transformations. Use theorems about congruence transformations.	<a href="#">Differentiating the Lesson 4.4</a> Video: <a href="#">Graphing Dilations</a>	<a href="#">Rigid transformations overview</a> <a href="#">Properties &amp; definitions of transformations</a> <a href="#">Symmetry</a>
<b>4.5</b> <b>2 days</b>	G.CO.2 G.SRT.1a G.SRT.1b	Identify and perform dilations. Solve real-life problems involving scale factors and dilations.	<a href="#">Differentiating the Lesson 4.5</a>	<a href="#">Dilations</a>
<b>4.6</b> <b>1 day</b>	G.CO.5 G.SRT.2	Perform similarity transformations. Describe similarity transformations. Prove that figures are similar.	<a href="#">Differentiating the Lesson 4.6</a>	<a href="#">Definitions of similarity</a> <a href="#">Properties &amp; definitions of transformations</a>



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### Geometry—Chapter 5

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> 1 day	8.G.8 A.REI.3	Using the Midpoint and Distance Formulas Solving Equations with Variables on Both Sides		<a href="#">Distance and midpoints</a> <a href="#">Linear equations with variables on both sides</a>
<b>5.1</b> 2 days	G.CO.10 G.MG.1	Classify triangles by sides and angles. Find interior and exterior angle measures of triangles.	<a href="#">Differentiating the Lesson 5.1</a>	<a href="#">Triangles</a> <a href="#">Triangle angles</a> <a href="#">Theorems concerning triangle properties</a>
<b>5.2</b> 1 day	G.CO.7	Identify and use corresponding parts. Use the Third Angles Theorem.	<a href="#">Differentiating the Lesson 5.2</a>	<a href="#">Working with triangles</a>
<b>5.3</b> 1 day	G.CO.8 G.MG.1	Use the Side-Angle Side (SAS) Congruence Theorem. Solve real-life problems.	<a href="#">Differentiating the Lesson 5.3</a>	<a href="#">Triangle congruence</a>
<b>5.4</b> 2 days	G.CO.10 G.CO.13 G.MG.1	Use the Base Angles Theorem. Use Isosceles and equilateral triangles.	<a href="#">Differentiating the Lesson 5.4</a>	<a href="#">Theorems concerning triangle properties</a> <a href="#">Working with triangles</a> <a href="#">Constructing regular polygons inscribed in circles</a>
<b>5.5</b> 2 days	G.CO.8 G.MG.1 G.MG.3	Use the Side-Side-Side (SSS) Congruence Theorem. Use the Hypotenuse-Leg (HL) Congruence Theorem.	<a href="#">Differentiating the Lesson 5.5</a>	<a href="#">Triangle congruence</a>
<b>5.6</b> 2 days	G.CO.8	Use the ASA and AAS Congruence Theorems.	<a href="#">Differentiating the Lesson 5.6</a>	<a href="#">Triangle congruence</a> <a href="#">Proofs of general theorems that use triangle congruence</a>
<b>5.7</b> 1 day	G.SRT.5	Use congruent triangles. Prove constructions.	<a href="#">Differentiating the Lesson 5.7</a>	<a href="#">Triangle congruence</a> <a href="#">Proofs of general theorems that use triangle congruence</a>
<b>5.8</b> 2 days	G.GPE.4	Place figures in a coordinate plane. Write coordinate proofs.	<a href="#">Differentiating the Lesson 5.8</a>	Skills for this lesson are coming soon to Khan





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### Geometry—Chapter 6

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> <b>1 day</b>	G.GPE.5 A.CED.1	Writing an Equation of a Perpendicular Line Writing Compound Inequalities		<a href="#">Equations of parallel &amp; perpendicular lines</a> <a href="#">Compound inequalities</a>
<b>6.1</b> <b>2 days</b>	G.CO.9 G.MG.1	Use perpendicular bisectors to find measures. Use angle bisectors to find measures and distance relationships. Write equations for perpendicular bisectors.	<a href="#">Differentiating the Lesson 6.1</a>	<a href="#">Angle bisector theorem</a>
<b>6.2</b> <b>2 days</b>	G.CO.12 G.C.3 G.MG.1 G.MG.3	Use and find the circumcenter of a triangle. Use and find the incenter of a triangle.	<a href="#">Differentiating the Lesson 6.2</a>	<a href="#">Constructing circumcircles and incircles</a>
<b>6.3</b> <b>2 days</b>	G.CO.10	Use medians and find the centroids of triangles. Use altitudes and find the orthocenters of triangles.	<a href="#">Differentiating the Lesson 6.3</a>	<a href="#">Medians and centroids</a> <a href="#">Altitudes</a>
<b>6.4</b> <b>2 days</b>	G.CO.10 G.MG.1	Use midsegments of triangles in the coordinate plane. Use the Triangle Midsegment Theorem to find distances.	<a href="#">Differentiating the Lesson 6.4</a>	<a href="#">Exploring medial triangles</a>
<b>6.5</b> <b>2 days</b>	G.CO.10 G.GMD.6 (CA)	Write indirect proofs. List sides and angles of a triangle in order by size. Use the Triangle Inequality Theorem to find possible side lengths of triangles.	<a href="#">Differentiating the Lesson 6.5</a>	<a href="#">Proof by contradiction</a> <a href="#">Triangle inequality theorem</a> <a href="#">Constructing triangles</a>
<b>6.6</b> <b>1 day</b>	G.CO.10	Compare measures in triangles. Solve real-life problems using the Hinge Theorem.	<a href="#">Differentiating the Lesson 6.6</a>	<a href="#">Constructing triangles</a>



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### Geometry—Chapter 7

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> <b>1 day</b>	A.REI.3 A.SSE.1b G.GPE.5	Using Structure to Solve a Multi-Step Equation Identifying Parallel and Perpendicular Lines		<a href="#">Linear equations with parenthesis</a> <a href="#">Parallel &amp; perpendicular lines on the coordinate plane</a>
<b>7.1</b> <b>1 day</b>	G.CO.11	Use the interior angle measures of polygons. Use the exterior angle measures of polygons.	<a href="#">Differentiating the Lesson 7.1</a>	<a href="#">Properties of shapes</a> <a href="#">Angles with polygons</a>
<b>7.2</b> <b>2 days</b>	G.CO.11 G.SRT.5	Use properties to find side lengths and angles of parallelograms. Use parallelograms in the coordinate plane.	<a href="#">Differentiating the Lesson 7.2</a>	<a href="#">Theorems concerning quadrilateral properties</a>
<b>7.3</b> <b>2 days</b>	G.CO.11 G.SRT.5 G.MG.1	Identify and verify parallelograms. Show that a quadrilateral is a parallelogram in the coordinate plane.	<a href="#">Differentiating the Lesson 7.3</a>	Skills for this lesson are coming soon to Khan
<b>7.4</b> <b>2 days</b>	G.CO.11 G.SRT.5 G.MG.1 G.MG.3	Use properties of special parallelograms. Use properties of diagonals of special parallelograms. Use coordinate geometry to identify special types of parallelograms.	<a href="#">Differentiating the Lesson 7.4</a>	<a href="#">Classifying geometric shapes</a> <a href="#">Quadrilateral proofs &amp; angles</a>
<b>7.5</b> <b>2 days</b>	G.SRT.5 G.MG.1	Use properties of trapezoids. Use the Trapezoid Midsegment Theorem to find distances. Use properties of kites. Identify quadrilaterals.	<a href="#">Differentiating the Lesson 7.5</a>	<a href="#">Quadrilateral types</a>



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### Geometry—Chapter 8

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> 1 day	7.RP.2a G.SRT.1b	Determining Whether Ratios Form a Proportion Finding a Scale Factor		<a href="#">Intro to ratios Dilations</a>
<b>8.1</b> 2 days	G.SRT.2 G.MG.3 G.GMD.5 (CA)	Use similarity statements. Find corresponding lengths in similar polygons. Find perimeters and areas of similar polygons. Decide whether polygons are similar.	<a href="#">Differentiating the Lesson 8.1</a>	<a href="#">Solving similar triangles</a> <a href="#">Solving problems with similar &amp; congruent triangles</a>
<b>8.2</b> 2 days	G.SRT.3 G.SRT.5	Use the Angle-Angle Similarity Theorem. Solve real-life problems.	<a href="#">Differentiating the Lesson 8.2</a> Videos: <ul style="list-style-type: none"> <li><a href="#">Exploring What is Needed to Prove Triangle Similarity</a></li> <li><a href="#">Angle-Angle Similarity</a></li> </ul> *Option: incorporate lesson 9.3	<a href="#">Introduction to triangle similarity</a> <a href="#">Solving similar triangles</a>
<b>8.3</b> 2 days	G.SRT.4 G.SRT.5 G.GPE.5 G.MG.1	Use the Side-Side-Side Similarity Theorem. Use the Side-Angle-Side Similarity Theorem. Prove slope criteria using similar triangles.	<a href="#">Differentiating the Lesson 8.3</a>	<a href="#">Introduction to triangle similarity</a> <a href="#">Solving similar triangles</a>
<b>8.4</b> 2 days	G.SRT.4 G.SRT.5 G.GPE.6	Use the Triangle Proportionality Theorem and its converse. Use other proportionality theorems.	<a href="#">Differentiating the Lesson 8.4</a>	<a href="#">Angle bisector theorem</a> <a href="#">Solving similar triangles</a>



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### Geometry—Chapter 9

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> 1 day	N.RN.2 7.RP.2b	Using Properties of Radicals Solving Proportions		<a href="#">Simplifying square roots</a> <a href="#">Writing &amp; solving proportions</a>
<b>9.1</b> 2 days	G.SRT.4 G.SRT.8	Use the Pythagorean Theorem. Use the Converse of the Pythagorean Theorem. Classify triangles.	<a href="#">Differentiating the Lesson 9.1</a> Video: <a href="#">The Pythagorean Theorem</a>	<a href="#">Pythagorean theorem</a> <a href="#">Pythagorean theorem proofs</a>
<b>9.2</b> 1 day	G.SRT.8 G.MG.1	Find side lengths in special right triangles. Solve real-life problems involving special right triangles.	<a href="#">Differentiating the Lesson 9.2</a>	<a href="#">Special right triangles</a>
<b>9.3</b> 2 days	G.SRT.5	Identify similar triangles. Solve real-life problems involving similar triangles. Use geometric means.	<a href="#">Differentiating the Lesson 9.3</a> This lesson can be taught during 8.2 without geometric mean, as seen in the Khan video linked at the right: “same side plays different roles.”	<a href="#">Solving similar triangles</a>
<b>9.4</b> 2 days	G.SRT.6 G.SRT.8	Use the tangent ratio. Solve real-life problems involving the tangent ratio.	<a href="#">Differentiating the Lesson 9.4</a>	<a href="#">Introduction to the trigonometric ratios</a> <a href="#">Solving for a side in a right triangle using the trigonometric ratios</a> <a href="#">Modeling with right triangles</a>
<b>9.5</b> 2 days	G.SRT.6 G.SRT.7 G.SRT.8	Use the sine and cosine ratios. Find the sine and cosine of angle measures in special right triangles. Solve real-life problems involving sine and cosine ratios.	<a href="#">Differentiating the Lesson 9.5</a>	<a href="#">Solving for a side in a right triangle using the trigonometric ratios</a> <a href="#">Modeling with right triangles</a>
<b>9.6</b> 2 days	G.SRT.8 G.MG.1 G.MG.3	Use inverse trigonometric ratios. Solve right triangles.	<a href="#">Differentiating the Lesson 9.6</a>	<a href="#">Solving for an angle in a right triangle using the trigonometric ratios</a> <a href="#">Modeling with right triangles</a>
<b>9.7</b> 2 days	G.SRT.9 (+) G.SRT.10 (+) G.SRT.11 (+) G.MG.3	Find areas of triangles. (+) Use the Law of Sines to solve triangles. (+) Use the Law of Cosines to solve triangles. (+)	<a href="#">Differentiating the Lesson 9.7</a>	<a href="#">Law of sines</a> <a href="#">Law of cosines</a>



# 2019-2020

## H.S. Geometry

### Geometry—Chapter 10

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> 1 day	A.APR.1 A.SSE.3b	Multiplying Binomials Solving Quadratic Equations by Completing the Square		<a href="#">Multiplying binomials</a> <a href="#">Completing the square</a>
<b>10.1</b> 2 days	G.CO.1 G.C.2 G.C.4 (+)	Identify special segments and lines. Draw and identify common tangents. Use properties of tangents. <del>Constructing a Tangent to a Circle. (+)</del>	<a href="#">Differentiating the Lesson 10.1</a>	<a href="#">Circles basics</a> <a href="#">Properties of tangents</a> <a href="#">Constructing a line tangent to a circle</a>
<b>10.2</b> 2 days	G.C.1 G.C.2	Find arc measures. Identify congruent arcs. Prove circles are similar.	<a href="#">Differentiating the Lesson 10.2</a>	<a href="#">Arc measure</a>
<b>10.3</b> 2 days	G.C.2 G.MG.3	Use chords of circles to find lengths and arc measures.	<a href="#">Differentiating the Lesson 10.3</a>	<a href="#">Arc measure</a>
<b>10.4</b> 2 days	G.CO.13 G.C.2 G.C.3	Use inscribed angles. Use inscribed polygons.	<a href="#">Differentiating the Lesson 10.4</a>	<a href="#">Inscribed angles</a> <a href="#">Inscribed shapes problem solving</a>
<b>10.5</b> 2 days	G.C.2	Find angle and arc measures. Use circumscribed angles.	<a href="#">Differentiating the Lesson 10.5</a>	<a href="#">Properties of tangents</a>
<b>10.6</b> 2 days	G.C.2 G.MG.1	Use segments of chords, tangents, and secants.	<a href="#">Differentiating the Lesson 10.6</a>	<a href="#">Properties of tangents</a>
<b>10.7</b> 2 days	G.GPE.1 G.GPE.4	Write and graph equations of circles. Write coordinate proofs involving circles. Solve real-life problems using graphs and circles.	<a href="#">Differentiating the Lesson 10.7</a>	<a href="#">Standard equation of a circle</a> <a href="#">Expanded equation of a circle</a>



# 2019-2020

## H.S. Geometry

### Geometry—Chapter 11

Lesson & Standards	Standards	Learning Goals	Tasks and/or PD Videos to Support Conceptual Understanding	Khan Academy Lesson Links
<b>MMP</b> <b>1 day</b>	7.G.6 A.REI.3	Finding Surface Area Finding a Missing Dimension		<a href="#">Surface area</a> , <a href="#">Area of rectangles</a> , <a href="#">Area of triangles</a> , <a href="#">Perimeter</a>
<b>11.1</b> <b>2 days</b>	G.GMD.1 G.C.5 G.CO.1	Use the formula for circumference. Use arc lengths to find measures. Solve real-life problems. Measure angles in radians.	<a href="#">Differentiating the Lesson 11.1</a>	<a href="#">Area and circumference of circles</a> <a href="#">Arc length (degrees)</a> <a href="#">Introduction to radians</a>
<b>11.2</b> <b>2 days</b>	G.GMD.1 G.MG.2 G.C.5	Use the formula for the area of a circle. Use the formula for population density. Find areas of sectors. Use areas of sectors.	<a href="#">Differentiating the Lesson 11.2</a> Video: <a href="#">Area of Circles</a>	<a href="#">Area and circumference of circles</a> <a href="#">Sectors</a>
<b>11.3</b> <b>2 days</b>	G.GMD.3	Find areas of rhombuses and kites. Find angle measures in regular polygons. Find areas of regular polygons.	<a href="#">Differentiating the Lesson 11.3</a>	<a href="#">Theorems concerning quadrilateral properties</a> <a href="#">Area of a regular hexagon</a> <a href="#">Area of trapezoids &amp; composite figures</a>
<b>11.4</b> <b>1 day</b>	G.GMD.4	Classify solids. Describe cross sections. Sketch and describe solids of revolution.	<a href="#">Differentiating the Lesson 11.4</a>	<a href="#">Geometric solids (3D shapes)</a> <a href="#">2D vs. 3D objects</a>
<b>11.5</b> <b>2 days</b>	G.GMD.1 G.GMD.2 G.GMD.3 G.GMD.5 (CA) G.MG.1 G.MG.2 G.MG.3	Find volumes of prisms and cylinders. Use the formula for density. Use volumes of prisms and cylinders.	<a href="#">Differentiating the Lesson 11.5</a>	<a href="#">Solid geometry intro</a> <a href="#">Density</a> <a href="#">Volume of cones, cylinders, and spheres</a>
<b>11.6</b> <b>2 days</b>	G.GMD.1 G.GMD.3 G.MG.1	Find volumes of pyramids. Use volumes of pyramids.	<a href="#">Differentiating the Lesson 11.6</a>	<a href="#">Solid geometry intro</a>
<b>11.7</b> <b>2 days</b>	G.GMD.1 G.GMD.3	Find surface areas of right cones. Find volumes of cones. Use volumes of cones.	<a href="#">Differentiating the Lesson 11.7</a> Video: <a href="#">Volume of Cones</a>	<a href="#">Solid geometry intro</a> <a href="#">Volume of cones, cylinders, and spheres</a>
<b>11.8</b> <b>2 days</b>	G.GMD.2 G.GMD.3 G.MG.1	Find surface areas of spheres. Find volumes of spheres.	<a href="#">Differentiating the Lesson 11.8</a>	<a href="#">Solid geometry intro</a> <a href="#">Volume of cones, cylinders, and spheres</a>