

Below are the key skills that students should possess by the end of the 1<sup>st</sup> semester of Honors Geometry. They are based on the Common Core State Standards and are written in student-friendly terms. The learning targets are grouped by unit of study, and the corresponding state standards and practice resources are listed.

Power Standard	#	Learning Target	CCSSM	Textbook Resource
<b>Tools of Geometry</b>	1A	I can solve problems using inductive reasoning and number patterns by recognizing and using special number sets.		
	1B	I can use precise definitions of the fundamental objects of Euclidean Geometry.	G.CO.1	
	1C	I can identify and construct rotations, reflections, and translations.	G.CO.2 G.CO.5	
	1D	I can make formal geometry constructions with a variety of tools and methods.	G.CO.12 G.CO.13	
	1E	I can apply the distance formula and midpoint formula to segments and shapes in the coordinate plane.	G.GPE.6	
<b>Reasoning and Proof</b>	2A	I can use deductive reasoning to verify and draw conclusions with logical arguments.	G.CO.9	
	2B	I can use algebraic and geometric properties and postulates to prove and apply theorems about angles.	G.CO.9	
<b>Parallel and Perpendicular Lines</b>	3A	I can prove and apply theorems about angles made by parallel lines and a transversal.	G.CO.9	
	3B	I can prove and apply theorems for the sum of interior and exterior angles in any polygon.	G.CO.10	
	3C	I can recognize and apply the slope criteria for parallel and perpendicular lines.	G.GPE.5	
<b>Congruent Triangles</b>	4A	I can use the definition of congruence and rigid motions to solve problems about congruent polygons.	G.CO.6 G.CO.7	
	4B	I can explain and apply the triangle congruence postulates (SSS, SAS, ASA) and theorems (AAS, HL).	G.CO.8	
	4C	I can apply theorems about triangle parts using congruence postulates and theorems and CPCTC.	G.CO.10	
<b>Relationships in Triangles</b>	5A	I can prove and use properties of midsegments, bisectors, and medians in triangles to solve problems	G.CO.10	
	5B	I can construct and apply the inscribed and circumscribed circles of a triangle.	G.C.3	
<b>Quadrilaterals</b>	6A	I can use coordinates to prove simple geometric theorems algebraically.	G.GPE.4	
	6B	I can prove and apply theorems about parallelograms.	G.CO.11	
	6C	I can prove and apply theorems about special quadrilaterals including rhombus, rectangles, trapezoids, and kites.	G.SRT.5	

Below are the key skills that students should possess by the end of the 2<sup>nd</sup> semester of Honors Geometry. They are based on the Common Core State Standards and are written in student-friendly terms. The learning targets are grouped by unit of study, and the corresponding state standards and practice resources are listed.

<b>Area and Probability</b>	7A	I can derive and apply the area formulas of triangles, quadrilaterals, and regular polygons using planar and coordinate geometry	G.GPE.7
	7B	I can apply the Pythagorean theorem and its converse working with rational and irrational numbers in radical notation.	G.SRT.8
	7C	I can apply theorems about Special right triangles to problems.	G.SRT.8
	7D	I can solve problems involving the area and circumference of circles, arcs, sectors, and segments.	G.C.5
<b>Similarity</b>	8A	I can demonstrate that two figures are similar using the definition and similarity transformations.	G.SRT.1 G.SRT.2 G.C.1
	8B	I can explain and use triangle similarity theorems, including AA <sup>~</sup> , SSS <sup>~</sup> , and SAS <sup>~</sup> .	G.SRT.3
	8C	I can prove and apply theorems about proportions in triangles.	G.SRT.4
<b>Trigonometry</b>	9A	I can find trigonometric ratios in a right triangle and explain their relationship.	G.SRT.6 G.SRT.7
	9B	I can apply trigonometric ratios and the Pythagorean Theorem to solve right triangle problems.	G.SRT.8
	9C	I can derive and apply the formula for the area of a triangle using sine.	G.SRT.9 (+)
	9D	I can prove and apply the Laws of Sines and Cosines.	G.SRT.10 G.SRT.11 (+)
<b>Surface Area and Volume</b>	10A	I can derive and apply formulas for the volume of prisms, cylinders, pyramids, cones, and spheres.	G.GMD.1 G.GMD.3 G.MG.1
	10B	I can identify cross-sections and rotations, including conic sections.	G.GMD.4
<b>Circles</b>	11A	I can identify and describe relationships among inscribed angles, radii, chords, and tangents.	G.C.2, G.C.4(+)
	11B	I can prove and apply properties of a quadrilateral inscribed in a circle.	G.C.3
	11C	I can derive and apply the equation of a circle given center and radius using the Pythagorean Theorem.	G.GPE.1, G.GPE.4
<b>Probability</b>	12A	I can describe the outcomes of events as subsets of a sample space.	S.CP.1
	12B	I can identify if events are independent or dependent and calculate conditional probability.	S.CP.2 S.CP.3 S.CP.6
	12C	I can apply conditional probability to real word data to determine independence or dependence.	S.CP.4 S.CP.5
	12D	I can use the Addition and Multiplication Rules to compute the probabilities of compound events.	S.CP.7 S.CP.8(+)
	12E	I can use permutations and combinations to compute probabilities of compound events.	S.CP.9(+)