



# Reavis High School

## Geometry I Honors Curriculum Snapshot



### Unit 1: Fundamental Concepts

18  
Days

Students will study inductive reasoning and apply it to the Segment Addition Postulate, the Ruler Postulate, the Midpoint Formula, and the Distance Formula. Additionally, angle postulates and classifications will be examined to find the measures of angles. Definitions, theorems, and applications of vertical angles, linear pairs, complementary angles, and supplementary angles will also be explored.



### Unit 2: Perpendicular and Parallel Lines

18  
Days

Students will investigate the relationships between lines and angles formed when two lines are cut by a transversal. Students will apply properties of parallel lines to solve real-life problems. Additionally, they will find the slope of lines to identify parallel and perpendicular lines in a coordinate plane. Students will write equations of parallel and perpendicular lines in a coordinate plane.



### Unit 3: Introduction to Proof

10  
Days

Students will recognize, analyze, and write conditional statements as well as definitions and biconditional statements. They will use symbolic notation to represent logical statements and use laws of logic to draw conclusions from arguments. Students will use properties from algebra and geometry to measure and justify segment and angle relationships. Students will also prove statements about segments and angles using congruence.



## Unit 4: Triangle Congruency and Properties

30  
Days

Students will identify congruent polygons and their corresponding parts. Focus will be given to proving triangles congruent by SSS, SAS, ASA, AAS, and HL Theorems. Additionally, these theorems will be applied to real-life situations. Furthermore, classification of triangles, triangle measures, properties of isosceles, equilateral, and right triangles are explored. Students will also learn how to place geometric figures in a coordinate plane and complete coordinate proofs. Students will define perpendicular bisectors and angle bisectors and relate these to triangles. These concepts will be applied to medians and altitudes and their concurrencies. Students also study the Midsegment Theorem and learn about various triangle inequalities.



## Unit 5: Quadrilaterals

20  
Days

Students will be able to identify and describe polygons as well as examine properties of their interior angles, exterior angles, and total number of diagonals. Students will use the properties of the quadrilaterals to solve for missing side lengths and angle measures. Additionally, they will identify special quadrilaterals based on limited information and will examine properties of the sides, angles, and diagonals of special parallelograms such as rhombuses, rectangles, and squares. Students will use coordinate geometry to identify and prove figures are unique quadrilaterals.



## Unit 6: Similarity

18  
Days

Students will simplify ratios, solve proportions, and use properties of proportions to solve real-life problems as an introduction to similarity. Similar polygons and similar triangles are then introduced. Similar triangles are explored in greater depth, and students will prove triangles similar by AA, SSS, and SAS Theorems. Additionally, proportionality theorems involving parallel lines, angle bisectors, and transversals are examined to calculate segment lengths. Finally, students identify dilations and use the properties of dilations in real-life applications.



## Unit 7: Right Angle Geometry

15  
Days

Students solve problems involving similar right triangles by using geometric mean and indirect measurement. Students will prove the Pythagorean Theorem and use it as well as its converse to solve problems. Students will find the lengths of sides of special right triangles. Additionally, they will find the sine, cosine, and tangent ratios and use them to solve real-life problems.



## Unit 8: Area

10  
Days

Students will explore many topics which relate to the area of polygons and circles. The shapes explored include: triangles, squares, rectangles, trapezoids, parallelograms, circles, regular polygons, and sectors. Throughout this unit, problems involving area, perimeter, circumference, and arc length are solved and applied to real-life situations.



## Unit 9: Circles

15  
Days

The unit begins with identification of segments and lines related to circles. Students will apply properties of tangents, arcs, chords, inscribed angles, and inscribed polygons to solve problems related to circles. Also, students will find angles and arc measures related to circles. Finally, students determine the lengths of chords, tangent segments, and secants.



## Unit 10: Surface Area and Volume

10  
Days

Students will investigate the surface area and volume of solids. First, they will learn to distinguish polyhedra from other solids and classify them. They will use nets to help them explore the surface area of prisms and cylinders. Additionally, they will use the Pythagorean Theorem to identify the surface area of pyramids. Students will find the surface area and apply this skill to real-life scenarios. Comparisons of volumes of solids will also be addressed.