

Geometry 500 curriculum map

Unit 1: Foundations of Geometry

- Introduction to geometry and its tools
- Points, lines, and planes
- Types of angles and their properties
- Congruence and similarity of geometric figures
- Inductive and deductive reasoning

Unit 2: Euclidean Geometry

- Parallel lines and transversals
- Properties of triangles (classification, angles, sides)
- Congruent triangles and triangle congruence criteria
- Similarity and proportions in triangles
- Polygons and their properties

Unit 3: Circles and Arcs

- Properties of circles and arcs
- Central angles and inscribed angles
- Arc length and sector area
- Tangent lines and chords
- Geometric proofs involving circles

Unit 4: Transformations and Symmetry

- Rigid transformations (translations, reflections, rotations)
- Properties of transformations
- Congruence and similarity transformations
- Symmetry and tessellations
- Transformations in coordinate geometry

Unit 5: Right Triangles and Trigonometry

- Pythagorean theorem and its applications
- Special right triangles (30-60-90, 45-45-90)

- Trigonometric ratios (sine, cosine, tangent)
- Solving right triangles
- Applications of trigonometry in real-world contexts

Unit 6: Polygons and Quadrilaterals

- Properties of quadrilaterals (parallelograms, rectangles, rhombi, squares)
- Properties of other polygons (pentagons, hexagons, etc.)
- Interior and exterior angles of polygons
- Area and perimeter of polygons
- Geometric proofs involving polygons

Unit 7: Similarity and Proportional Relationships

- Similar triangles and triangle proportionality theorems
- Ratio and proportion in geometric figures
- Scale factors and dilations
- Applications of similarity in real-world situations
- Geometric proofs involving similarity

Unit 8: Coordinate Geometry and Constructions

- Coordinate plane and distance formula
- Midpoint and slope of a line segment
- Equations of lines (slope-intercept, point-slope)
- Geometric constructions (bisecting angles, perpendicular lines, etc.)
- Coordinate proofs and geometric reasoning

This curriculum map provides a comprehensive overview of the topics typically covered in an Geometry 500 course. However, the specific content and order may vary.