Geometry CP Curriculum

Prerequisite: Algebra 1 CP

Geometry CP introduces geometric reasoning as a method for problem solving. In this course, you will explore the properties of geometric figures such as triangles, quadrilaterals, and other polygons. You will practice using mathematical language to express ideas and justify your reasoning. Some important geometric ideas such as symmetry, similarity, and trigonometry will also be examined. Lastly, you will begin to explore the basis of formal mathematical proofs and solid geometry. The course material progresses from more visual, intuitive ways of solving problems to more formal explorations of geometric ideas, properties, and, finally, proofs.

Foundations for Geometry
This unit introduces students to basic foundational geometry . Topics consist of Understanding Points, Lines, and Planes; Measuring Segments; Measuring Angles; Pairs of Angles; Using Formulas in Geometry; Midpoint and Distance in the Coordinate Plane.

Geometric Reasoning & Parallel and Perpendicular Lines
This unit introduces the idea of "proof". Topics consist of Algebraic Proof; Geometric Proof; Paragraph Proofs; Lines and Angles; Angles Formed by Parallel Lines and Transversals; Proving Lines Parallel; Perpendicular Lines; Slopes and Lines in the Coordinate Plane.

Triangle Congruence
This unit further strengthens students ability to write a proof using triangle congruence. Topics consist of Classifying Triangles; Angle Relationships in Triangles; Congruent Triangles; Triangle Congruence: SSS, SAS, ASA, AAS, and HL; Triangle Congruence: CPCTC.

Properties and Attributes of Triangles; Right Triangles and Trigonometry
This unit explores attributes of Triangles and the relationships that exist between their sides and angles. Topics consist of Isosceles and Equilateral Triangles; The Triangle Inequality Theorem; The Pythagorean Theorem; Applying Special Right Triangles; Trigonometric Ratios; Solving Right Triangles; Angles of Elevation and Depression.

Similarity
This unit explores similar figures and corresponding mathematical relationships that exist between them. Topics consist of Ratios in Similar Polygons; Triangle Similarity: AA, SAS, and SSS; Triangle Proportionality; Using Proportional Relationships

Circles
This unit explores the mathematical relationships of tangents, secants, chords and arcs of circles. Topics consist of Lines That Intersect Circles; Arcs and Chords; Sector Area and Arc Length; Inscribed Angles; Measuring Angles in Radians; Circles in the Coordinate Plane.

Spatial Reasoning and Solid Geometry
This unit discusses the measures(areas and volumes) and attributes of solid figures. Topics consist of Solid Geometry; Volume of Prisms and Cylinders; Volume of Pyramids and Cones; Spheres.

Polygons and Quadrilaterals; Perimeter, Circumference, and Area
This unit explores the many types of quadrilaterals and proofs related to parallelograms. Topics consist of Properties of Parallelograms; Conditions for Parallelograms; Properties of Special Parallelograms; Conditions for Special Parallelograms; Properties of Trapezoids; Formulas for Triangles and Quadrilaterals; Formulas for Circles and Regular Polygons; Composite Figures; Effects of Changing Dimensions Proportionally

Next Math Class in sequence to take: Pre-calculus CP