THE PHILLIPS ACADEMY

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Geometry

This course is designed to cover all of the basic algebra concepts found in a standard college preparatory Geometry curriculum. It is the third course in a six-course sequence that tells the story of mathematics. Topics include: Inductive Reasoning and Logic, Deductive Reasoning, Segment and Angle Proofs, Algebraic Proofs, Indirect Proofs, Perpendicular Lines, Perpendicular Bisectors, Angles Bisectors, Parallel Lines, Circles, Rectangles, Triangles, Trapezoids, Parallelograms, Regular Polygons, Cylinders, Cones, Spheres, and Pyramids, the Pythagorean Theorem and Applications, Similar Triangles and Applications, Basic Probabilities, Factorials, Permutations, Combinations, Pascal's Triangle, Mean, Median, Mode, Variance, Standard Deviation, Statistical Applications, Radians, Degrees, Vertical, Complimentary, and Supplementary Angles, Parallel and Perpendicular Lines, Midpoint, Distance, Corresponding, Alternate Interior, Alternate Exterior, and Same Side Interior Angles, Algebraic Applications on Geometric Angles, Angles in a Polygon, Arc Lengths, Chords, Sectors, Tangents, Segments, Special 30-60-90 Triangles, Special 45-45-90 Triangles, Equations of Circles, Arc length, Sectors, Chords, Tangents, Secants, Basic Trigonometry, Sine, Cosine, Tangent, Trigonometric Applications, Types of Triangles, Proving SSS Triangles Congruent, Proving SAS Triangles Congruent, Proving ASA Triangles Congruent, Proving AAS Triangles Congruent, Transformations, Symmetry, Reflections, Translations, Dilations, Rotations, Compound Transformations, Applications of Congruent Triangles, The Fibonacci Sequence, The Golden Ratio and Phi, The Golden Spiral, Applications of the Fibonacci Sequence, and Arithmetic and Geometry Sequence and Series with Applications. By the end of this course, students will be prepared to tackle the Algebra II curriculum.