Parent / Student Course Information

MATHEMATICS

GEOMETRY PART 2

Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.

COURSE DESCRIPTION
Geometry Part 2 is the second semester of a two-semester geometry sequence. The course is designed to help students understand the basic structure of geometry and apply geometric concepts and skills in authentic situations. The course focuses on the development of problem-solving skills and the acquisition of mathematical vocabulary and symbols. The active engagement of students along with the use of manipulatives and technology, such as computer programs and calculators, will allow students to develop an understanding of the geometric principles they are learning. Topics include similarity, right triangles, properties of circles, properties of transformations, and area and volume. Students will gain an appreciation of the structure of geometry and develop powers of spatial visualization. **Students cannot receive credit for both Geometry Part 2 and Geometry Honors.**

PREREQUISITE
Geometry Part 1

OPTIONS FOR NEXT COURSE
Algebra II or Algebra, Functions, and Data Analysis

REQUIRED STUDENT TEXTBOOK
Glencoe Geometry (Virginia Edition). John A. Carter, Ph.D., Gilbert J. Cuevas, Ph.D., Roger Day, Ph.D., and Carol Malloy, Ph.D. Glencoe McGraw-Hill, 2012

RECOMMENDED CALCULATOR
TI-83 Plus or TI-84 Plus

Students should purchase a compass, ruler, and protractor.

Virginia Beach Instructional Objectives
Geometry Part 2 – MA 3223

VBO #	Objective
	Right Triangles
GP2.TR.6.1	The student will use the Pythagorean Theorem and its converse to solve problems and recognize Pythagorean triples. **(SOL G.8)**
GP2.TR.6.2	The student will apply properties of special right triangles to real-world problems and find decimal approximations for the solutions. **(SOL G.8)**
GP2.TR.6.3	The student will solve real-world problems using sine, cosine, and tangent functions of acute angles in right triangles. **(SOL G.8)**
	Polygons and Quadrilaterals
GP2.PC.7.1	The student will use measurements of interior and exterior angles of convex and regular polygons to solve problems. **(SOL G.10)**
GP2.PC.7.2	The student will classify a given quadrilateral as a parallelogram, rectangle, rhombus, square, or trapezoid according to its properties and justify the conclusion. **(SOL G.9)**
GP2.PC.7.3	The student will investigate and identify properties of quadrilaterals and use them to solve real-world problems and prove properties of quadrilaterals using algebraic and coordinate methods as well as deductive proofs. **(SOL G.2 b, G.9)**
	Transformations
GP2.RL.8.1	The student will determine the image of a figure under a dilation, reflection, rotation, or translation, including defining image, preimage, mapping, identity mapping, inverse of a mapping, and isometry. **(SOL G.3 c, d)**
GP2.RL.8.2	The student will determine if a figure has point or line symmetry and identify how many lines of symmetry exist. **(SOL G.3 a, c, d)**
GP2.RL.8.3	The student will identify the image of an object on the coordinate plane under a dilation through the origin, a rotation through the origin, a reflection through a line, and a translation. **(SOL G.3)**
	Circles
GP2.PC.9.1	The student will investigate and use the properties of angles, arcs, chords, tangents, and secants including: defining, identifying, and using standard notation for chord, secant, tangent, major and minor arc, intercepted arc, and central and inscribed angle; and defining congruent arcs, congruent circles, concentric circles, and common tangent. **(SOL G.11 a, b, c)**
GP2.PC.9.2	The student will apply properties of circles to real-world problems, including: solving problems using angles formed by radii, chords, secants, and tangents; and solving problems using the lengths of arcs, chords, secant segments, and tangent segments. **(SOL G.11 a, b, c)**
GP2.PC.9.3	The student will calculate circumference and arc length and relate measures of central angles to fractions of a circle. **(SOL G.11 c)**
GP2.PC.9.4	The student, given the coordinates of the center of a circle and a point on the circle, will write the equation of the circle. **(SOL G.12)**
	Area and Volume
GP2.PC.10.1	The student will calculate the area of a triangle, rectangle, rhombus, square, trapezoid, and parallelogram and apply this knowledge to find the area of other polygons. **(SOL G.14)**
GP2.PC.10.2	The student will calculate area of a circle and area of a sector of a circle given the measure of its central angle. **(SOL G.11 b, c)**
GP2.3D.10.3	The student will calculate the lateral area, surface area, and volume of three-dimensional objects. **(SOL G.13)**

GP2.3D.10.4	The student will calculate the ratio of the areas or the volumes of similar figures in terms of the ratio of the sides or perimeters and investigate relationships between linear, square, and cubic measures of similar geometric objects and describe how changes in one measure affect the others, including real-world applications. **(SOL G.14 a, b, c, d)**
	Geometry Extensions and Advanced Algebra Concepts
GP2.TR.11.1	The student will solve real-world problems using the Laws of Sines and Cosines.

VIRGINIA BEACH CITY PUBLIC SCHOOLS
AHEAD OF THE CURVE

MISSION STATEMENT
The Virginia Beach City Public Schools, in partnership with the entire community, will empower every student to become a life-long learner who is a responsible, productive and engaged citizen within the global community.

Dr. James G. Merrill, Superintendent

DEPARTMENT OF CURRICULUM AND INSTRUCTION
2512 George Mason Drive • P.O. Box 6038 • Virginia Beach, Virginia 23456-0038

CIE-0005 (Revised 8/12)