



GEOMETRY PART 1

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 1 is the first 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 reasoning and proof, lines and their relationships, triangles and their relationships, and polygons and quadrilaterals. Students will gain an appreciation of the structure of geometry and develop powers of spatial visualization. **Students cannot receive credit for both Geometry Part 1 and Geometry Honors (MA 3225).**

PREREQUISITE

Algebra I Honors or Algebra I Parts 1 and 2

OPTIONS FOR NEXT COURSE

Geometry Part 2

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 1 – MA 3221

VBO #	Objective
Foundations of Geometry	
GP1.RL.1.1	The student will identify a point, line, ray, angle, line segment, and plane when given an appropriate diagram and use standard notation for each.
GP1.RL.1.2	The student will use the definitions, theorems, postulates, and pictorial representations to draw conclusions about line segments and angles, including: linear measure, using the distance and midpoint formulas; using the segment addition postulate and angle addition postulate. (SOL G.3 a)
GP1.RL.1.3	The student will apply the definitions and theorems for complementary, supplementary, right, straight, vertical, and adjacent angles to real-world problems.
GP1.RL.1.4	The student will apply the definitions and relationships of perpendicular lines in real-world situations. (SOL G.3 a, b)
GP1.RL.1.5	The student will construct a line segment congruent to a given line segment, the perpendicular bisector of a line segment, an angle congruent to a given angle, and the bisector of an angle. (SOL G.4 a, b, e, f)
Reasoning and Proof	
GP1.RL.2.1	The student will diagram arguments involving quantifiers using Venn Diagrams, identify the hypothesis and conclusion of a conditional statement (including statements involving quantifiers such as all, no, none, and some), and write it and its converse in <i>if-then</i> form. (SOL G.1 a, c)
GP1.RL.2.2	The student will construct and judge the validity of a logical argument consisting of a set of premises and a conclusion, including: being able to define and state the converse, inverse, and contrapositive of an if-then statement; translating short verbal arguments into symbolic form; and use valid forms of inductive and deductive reasoning to include real-world problems. (SOL G.1 a, b, d)
GP1.RL.2.3	The student will solve problems by drawing conclusions about points, lines, planes, and angles and justify statements using definitions, theorems, and postulates using properties of equality and problem-solving techniques.
Lines and Their Relationships	
GP1.RL.3.1	The student will draw conclusions that lines and/or planes are parallel and show the relationships between pairs of angles in real-world situations, including using definitions of parallel, perpendicular, and skew lines; using the definition of transversal and the types of angles formed; justifying parallel lines and/or planes using algebraic and coordinate methods, including slope and equations and deductive proofs. (SOL G.2 a, b, c, G.3 a, b)
GP1.RL.3.2	The student will construct the perpendicular segment to a given line from a point not on the line, the perpendicular segment to a given line from a point on the line, and a line parallel to a given line through a point not on the given line. (SOL G.4 c, d, g)

Triangles and Their Relationships	
GP1.TR.4.1	The student will apply properties of triangles including: classifying triangles based on sides and angles; applying the triangle sum theorem; and applying the exterior-angle theorem, in real-world situations.
GP1.TR.4.2	The student will show that triangles are congruent by SSS, SAS, ASA, AAS, or HL using algebraic and coordinate methods as well as deductive proofs. (SOL G.6)
GP1.TR.4.3	The student will draw conclusions about segments or angles using the corresponding parts of congruent triangles theorem, including the use of altitude and median of a triangle and overlapping triangles. (SOL G.6)
GP1.TR.4.4	The student will apply the inequality relationships for angles or sides of one or two triangles in real-world situations, including ordering the sides and angles of a triangle. (SOL G.5 a, b, c, d)
Similarity	
GP2.TR.5.1	The student will use the properties of similar polygons, including: identifying corresponding parts of similar polygons; writing equivalent proportions; and applying proportions to solve real world problems. (SOL G.14 a, b, c, d)
GP2.TR.5.2	The student will show that triangles are similar by AA, SAS, or SSS using algebraic and coordinate methods as well as deductive proofs, including: investigating and identifying similarity between triangles; and computing lengths of segments of similar triangles. (SOL G.7)



VIRGINIA BEACH CITY PUBLIC SCHOOLS
A H E A D O F T H E C U R V E

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
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