



VIRGINIA BEACH CITY PUBLIC SCHOOLS
CHARTING THE COURSE

Department of Teaching & Learning
Parent/Student Course Information

GEOMETRY PART 1
(MA 3221)

One-half credit, One semester

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 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, TI-84 Plus, TI-84 Plus C or TI-84 Plus CE

Students should purchase a compass, ruler and protractor.

Virginia Beach Instructional Objectives
Geometry Part 1 – MA 3221

| VBO# | Objective |
|------------|---|
| | Unit 1: Reasoning and Proof |
| GP1.RL.1.1 | 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 if-then form. (SOL G.1 a, c) |
| GP1.RL.1.2 | 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.1.3 | The student will justify statements using properties of equality and problem-solving techniques in algebraic proofs. (SOL G.1 d) |
| | Unit 2: Foundations of Geometry |
| GP1.RL.2.1 | 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.2.2 | 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 and using the segment addition postulate and angle addition postulate. (SOL G.3 a) |
| GP1.RL.2.3 | The student will apply the definitions and theorems for complementary, supplementary, right, straight, vertical and adjacent angles to real world problems. |
| GP1.RL.2.4 | The student will apply the definitions and relationships of perpendicular lines in real world situations. |
| GP1.RL.2.5 | The student will solve problems by drawing conclusions about points, lines, planes and angles and justify statements using definitions, theorems and postulates in geometric proofs. (SOL G.1d) |
| GP1.RL.2.6 | 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) |
| | Unit 3: 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; and justifying parallel lines and/or planes using algebraic and coordinate methods, slope and equations and deductive proofs. (SOL G.2 a, b, c, G.3 a, b) |
| GP1.RL.3.2 | The student will verify relationships between pairs of angles in situations involving Science, Technology, Engineering and Mathematics (STEM) using the definition of transversal and the types of angles formed justifying lines are parallel based on angle relationships. (SOL G.2 a, b, c) |
| GP1.RL.3.3 | 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) |
| | Unit 4: 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 students 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) |

| VBO# | Objective |
|-------------------|--|
| 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 students 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) |
| | Unit 5: 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) |

Dr. Aaron C. Spence, Superintendent
Virginia Beach City Public Schools
2512 George Mason Drive, Virginia Beach, VA 23456-0038

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For further information please call (757) 263-1070.

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To seek resolution of grievances resulting from alleged discrimination or to report violations of these policies, please contact the Title VI/Title IX Coordinator/Director of Student Leadership at (757) 263-2020, 1413 Laskin Road, Virginia Beach, Virginia, 23451 (for student complaints) or the Section 504/ADA Coordinator/Chief Human Resources Officer at (757) 263-1133, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (for employees or other citizens). Concerns about the application of Section 504 of the Rehabilitation Act should be addressed to the Section 504 Coordinator/Executive Director of Student Support Services at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student's school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Laskin Road Annex, 1413 Laskin Road, Virginia Beach, Virginia, 23451.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write The Department of Teaching and Learning, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email him at Emmanuel.Cenizal@VBSchools.com

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