Parent / Student  Course Information

MATHEMATICS

MATHEMATICS 8

FOCUS OF MIDDLE SCHOOL MATHEMATICS LEARNING

- To build on students' concrete reasoning experiences developed in previous grades
- To construct through active learning experiences a more advanced understanding of mathematics
- To develop deep mathematical understandings required for success in abstract learning experiences
- To apply mathematics as a tool in solving real-world problems

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

Mathematics 8 is a mathematics course that extends concepts and skills from previous grades and prepares students for the more abstract concepts in algebra. 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 calculators, computers, and spreadsheets, will allow students to develop an understanding of the mathematical principles they are learning. Facility in the use of technology will not be a substitute for students' understanding of quantitative concepts and proficiency in basic computations. During this course students will be: solving multi-step practical problems involving rational numbers, percents, ratios and proportions; simplifying expressions using the order of operations; identifying perfect squares and square roots; describing subsets of the real number system; measuring and finding relationships between angles; investigating problems involving surface area and volume of several solid (three-dimensional) figures; applying transformations to plane figures; constructing three-dimensional figures; applying the Pythagorean Theorem to problem solving; exploring the probability of independent and dependent events; and exploring algebraic concepts such as creating multiple representations of relationships in data, solving multi-step linear equations, graphing linear equations in two variables, and identifying the domain and range of a function.

PREREQUISITE

Mathematics 7

OPTION FOR NEXT COURSE

Algebra I Part 1 or Algebra I Honors

REQUIRED STUDENT TEXTBOOK

Mathematics: Applications and Concepts, Virginia Edition, Course 3 (Glencoe/McGraw-Hill 2005)

RECOMMENDED CALCULATOR

TI-30Xa SEVA

Virginia Beach Instructional Objectives
Mathematics 8 – MA 3124

VBO #	Objective
	Number and Number Sense
MA.8.NS.8.1	The student will simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers. **(SOL 8.1a)**
MA.8.NS.8.2	The student will compare and order decimals, fractions, percents, and numbers written in scientific notation. **(SOL 8.1b)**
MA.8.NS.8.3	The student will describe orally and in writing the relationships between the subsets of the real number system. **(SOL 8.2)**
	Computation and Estimation
MA.8.CE.8.4	The student will solve practical problems involving rational numbers, percents, ratios, and proportions. **(SOL 8.3a)**
MA.8.CE.8.5	The student will determine the percent increase or decrease for a given situation. **(SOL 8.3b)**
MA.8.CE.8.6	The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables. **(SOL 8.4)**
MA.8.CE.8.7	The student will determine whether a given number is a perfect square and find the two consecutive whole numbers between which a square root lies. **(SOL 8.5)**
	Measurement
MA.8.ME.8.8	The student will verify by measuring and describe the relationships among vertical angles, adjacent angles, supplementary angles, and complementary angles. **(SOL 8.6a)**
MA.8.ME.8.9	The student will measure angles of less than 360°. **(SOL 8.6b)**
MA.8.ME.8.10	The student will investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids. **(SOL 8.7a)**
MA.8.ME.8.11	The student will describe how changing one measured attribute of a figure affects the volume and surface area. **(SOL 8.7b)**
	Geometry
MA.8.GE.8.12	The student will apply transformations to plane figures. **(SOL 8.8a)**
MA.8.GE.8.13	The student will identify applications of transformations. **(SOL 8.8b)**
MA.8.GE.8.14	The student will construct and identify a three-dimensional model, given the top or bottom, side, and front views. **(SOL 8.9)**
MA.8.GE.8.15	The student will verify and apply the Pythagorean Theorem. **(SOL 8.10a, b)**
MA.8.GE.8.16	The student will solve practical area and perimeter problems involving composite plane figures. **(SOL 8.11)**
	Probability and Statistics
MA.8.PS.8.17	The student will determine the probability of independent and dependent events with and without replacement. **(SOL 8.12)**
MA.8.PS.8.18	The student will make comparisons, predictions, and inferences, using information displayed in graphs. **(SOL 8.13a)**
MA.8.PS.8.19	The student will construct and analyze scatterplots. **(SOL 8.13b)**
	Patterns, Functions, and Algebra
MA.8.PF.8.20	The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship. **(SOL 8.14)**
MA.8.PF.8.21	The student will solve multistep linear equations in one variable with the variable on one and two sides of the equation. **(SOL 8.15a)**

MA.8.PF.8.22	The student will solve two-step linear inequalities and graph the results on a number line. **(SOL 8.15b)**
MA.8.PF.8.23	The student will identify properties of operations used to solve an equation. **(SOL 8.15c)**
MA.8.PF.8.24	The student will graph a linear equation in two variables. **(SOL 8.16)**
MA.8.PF.8.25	The student will identify the domain, range, independent variable, or dependent variable in a given situation. **(SOL 8.17)**

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

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CIE-0005 (Revised 8/12)