

**MATHEMATICS 7****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 7 is a course for seventh grade students that builds upon the skills learned in previous grades. 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: investigating negative exponents; exploring the scientific notation of numbers; evaluating the absolute value of rational numbers; representing arithmetic and geometric sequences using variables; modeling and adding integers; solving multi-step practical problems involving proportional reasoning; solving practical problems involving volume and surface area of rectangular prisms and cylinders; comparing and contrasting quadrilaterals; representing transformations on a coordinate plane given a polygon; investigating probability and counting principles; analyzing data and constructing graphs; exploring various algebraic representations of relationships; and exploring the properties of real numbers.

PREREQUISITE

Mathematics 6

OPTION FOR NEXT COURSE

Mathematics 8

REQUIRED STUDENT TEXTBOOK

Glencoe Pre-Algebra (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-30Xa SEVA

Virginia Beach Instructional Objectives
Mathematics 7 – MA 3114

VBO #	Objective
Unit 1: Exploring Numbers and Number Relations	
MA.C7.NS.7.1	The student will investigate and describe the concept of negative exponents for powers of ten. (SOL 7.1 a)
MA.C7.NS.7.2	The student will determine scientific notation for numbers greater than zero. (SOL 7.1 b) SOL 7.1 b – NON-CALCULATOR
MA.C7.NS.7.3	The student will compare and order fractions, decimals, percents, and numbers written in scientific notation. (SOL 7.1 c) SOL 7.1 c – NON-CALCULATOR
MA.C7.NS.7.4	The student will determine square roots. (SOL 7.1 d) SOL 7.1 d – NON-CALCULATOR
MA.C7.NS.7.5	The student will identify and describe absolute value for rational numbers. (SOL 7.1 e)
MA.C7.NS.7.6	The student will describe and represent arithmetic and geometric sequences using variable expressions. (SOL 7.2)
MA.C7.CE.7.7	The student will model addition, subtraction, multiplication and division of integers. (SOL 7.3 a)
MA.C7.CE.7.8	The student will add, subtract, multiply and divide integers. (SOL 7.3 b) SOL 7.3 b – NON-CALCULATOR
MA.C7.PF.7.22	The student will evaluate algebraic expressions for given replacement values of the variables. (SOL 7.13 b)
Unit 2: Patterns, Functions and Algebra	
MA.C7.PF.7.20	The student will represent relationships with tables, graphs, rules and words. (SOL 7.12)
MA.C7.PF.7.21	The student will write verbal expressions as algebraic expressions and sentences as equations and vice versa. (SOL 7.13 a)
MA.C7.PF.7.23	The student will solve one- and two-step linear equations in one variable. (SOL 7.14 a)
MA.C7.PF.7.24	The student will solve practical problems requiring the solution of one- and two-step linear equations. (SOL 7.14 b)
MA.C7.PF.7.25	The student will solve one-step inequalities in one variable and graph solutions on the number line. (SOL 7.15 a, b)
MA.C7.PF.7.26	The student will apply the commutative and associative properties for addition and multiplication to operations with real numbers. (SOL 7.16 a)
MA.C7.PF.7.27	The student will apply the distributive property to operations with real numbers. (SOL 7.16 b)
MA.C7.PF.7.28	The student will apply the additive and multiplicative identity properties to operations with real numbers. (SOL 7.16 c)
MA.C7.PF.7.29	The student will apply the additive and multiplicative inverse properties to operations with real numbers. (SOL 7.16 d)
MA.C7.PF.7.30	The student will apply the multiplicative property of zero to operations with real numbers. (SOL 7.16 e)
Unit 3: Proportional Reasoning	
MA.C7.CE.7.9	The student will solve single-step and multistep practical problems, using proportional reasoning. (SOL 7.4)

MA.C7.ME.7.13	The student will determine whether plane figures – quadrilaterals and triangles – are similar and write proportions to express the relationships between corresponding sides of similar figures. (SOL 7.6)
Unit 4: Geometry and Measurement	
MA.C7.GE.7.15	The student, given a polygon in the coordinate plane, will represent transformations (reflections, dilations, rotations, and translations) by graphing in the coordinate plane. (SOL 7.8)
MA.C7.ME.7.10	The student will describe volume and surface area of cylinders. (SOL 7.5 a)
MA.C7.ME.7.11	The student will solve practical problems involving the volume and surface area of rectangular prisms and cylinders. (SOL 7.5 b)
MA.C7.ME.7.12	The student will describe how changing one measured attribute of a rectangular prism affects its volume and surface area. (SOL 7.5 c)
MA.C7.GE.7.14	The student will compare and contrast the following quadrilaterals based on properties: parallelogram, rectangle, square, rhombus, and trapezoid. (SOL 7.7)
Unit 5: Probability and Statistics	
MA.C7.PS.7.16	The student will investigate and describe the difference between the experimental probability and theoretical probability of an event. (SOL 7.9)
MA.C7.PS.7.17	The student will determine the probability of compound events, using the Fundamental (Basic) Counting Principle. (SOL 7.10)
MA.C7.PS.7.18	The student, given data in a practical situation, will construct and analyze histograms. (SOL 7.11 a)
MA.C7.PS.7.19	The student, given data in a practical situation, will compare and contrast histograms with other types of graphs presenting information from the same data set. (SOL 7.11 b)

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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 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/Director of Guidance Services and Student Records at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia 23456 or the Section 504 Coordinator at the student's school.

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 (757) 263-1070 (voice); fax (757) 263-1424; 263-1240 (TDD) or email Emmanuel Cenizal at Emmanuel.Cenizal@vbschools.com.

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