



EARTH SCIENCE

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

Earth Science is the study of the features and forces of our planet. The course includes topics in astronomy, geology, meteorology, oceanography, and physical geography. Field trips, laboratory investigations, and other classroom activities permit the students to interrelate these topics and to gain personal experiences within their surroundings. Environmental concerns, energy, earth processes, and the influences of science, technology, and society are significant. Students will take the Standards of Learning (SOL) test for Earth Science. Specific dates for the SOL test will be announced by the school.

COURSE GOALS

- Develop a foundation of earth science concepts for understanding the forces and features of planet Earth, its place in the universe, and the interrelationships among the fields of earth science – geology, astronomy, meteorology, and oceanography
- Develop investigative skills in order to solve real problems
- Apply the processes of rational thought to make responsible decisions involving the interactions of science, technology, and society
- Explore the application of earth science principles, in modern life, in careers, and in other areas of interest

PREREQUISITE

Grade 8 - Advanced Science 7 and a teacher recommendation
High School - None

OPTIONS FOR NEXT COURSE

Biology
Chemistry (Algebra II prerequisite or co-requisite)
Oceanography (Earth Science prerequisite)

REQUIRED STUDENT TEXTBOOK

Earth Science: Allison, DeGaetano and Pasachoff (Holt, 2008)

MINIMUM REQUIREMENTS

- Demonstrate knowledge and understanding of all core objectives through laboratory investigations, issue investigations, projects, oral and/or written tests, quizzes, and reports
- Participate in the core laboratory experiences and adhere to all safety procedures
- Prepare written reports for laboratory activities as directed
- Investigate and report on science-related issues of local, regional, national, or global concern; suggest possible solutions; design a plan of action for solving them
- Investigate career opportunities and areas of interest in earth science and prepare a brief report
- Complete all assigned readings and homework

THE INSTRUCTIONAL OBJECTIVES THAT COMPRISE THE EARTH SCIENCE COURSE ARE LISTED AS FOLLOWS FROM THE PRESCRIBED CURRICULUM:

- Plan and conduct investigations.
- Demonstrate an understanding of the nature of science and scientific reasoning and logic.
- Investigate and understand the characteristics of Earth and the solar system.
- The student will investigate and understand how to identify major rock-forming and ore minerals based on physical and chemical properties.
- Investigate and understand the rock cycle as it relates to the origin and transformation of rock types and how to identify common rock types based on mineral composition and textures.
- Investigate and understand the differences between renewable and nonrenewable resources.
- Investigate and understand how freshwater resources are influenced by geologic processes and the activities of humans.
- Investigate and understand that many aspects of the history and evolution of Earth and life can be inferred by studying rocks and fossils.
- Investigate and understand that oceans are complex, interactive physical, chemical, and biological systems and are subject to long- and short-term variations.
- Investigate and understand the origin and evolution of the atmosphere and the interrelationship of geologic processes, biologic processes, and human activities on its composition and dynamics.
- Investigate and understand that energy transfer between the sun and Earth and its atmosphere drives weather and climate on Earth.
- Investigate and understand scientific concepts related to the origin and evolution of the universe.

Core Areas For Laboratory Experiences

- Safety
- Latitude and longitude applications
- Time zones
- Map features
- Topographic maps
- Mineral characteristics and identification
- Igneous rock characteristics
- Sedimentary rock characteristics
- Metamorphic rock characteristics and rock cycle
- Natural resources
- Rate of erosion
- Weather, erosion, and deposition
- Identification of plate edges
- Epicenter
- Landforms related to uplift
- Geologic time line
- Methods of dating--relative and absolute
- Fossilization
- Spectroscope
- Stellar traits
- Celestial movement
- Heat transfer methods
- Relationship of evaporation to cooling
- Relative humidity and dew point
- Weather instruments--read and record
- Weather maps--interpretation and forecasting
- Climatic factors
- Chemical and physical properties of sea water
- Geological oceanography
- Tides
- Coastal processes



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.

DEPARTMENT OF CURRICULUM AND INSTRUCTION

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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 Curriculum and Instruction, Director of Secondary Instructional Services, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038, Telephone (757) 263-1070 or (757) 263-1429, fax (757) 263-1412.