VIRGINIA BEACH CITY PUBLIC SCHOOLS
CHARTING THE COURSE

Department of Teaching & Learning
Parent/Student Course Information

Earth Science
(SC 4210)
One credit, One year
Grade 8

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
Oceanography
Astronomy (Geometry prerequisite)

REQUIRED TEXTBOOK

Holt: *Earth Science,* Allison, DeGaetano and Pasachoff (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 Summarized 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

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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.

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