

Curriculum Outline



Campbell High School

Character – Courage – Respect – Responsibility

Course & Level: **Earth Science**

Department: **Science**

Teacher: **Mrs. Schratwieser**

Grade level: **9th Grade**

Description of Course:

This course examines the fundamentals of the physical processes in the Earth/Space sciences. Students will explore scientific solutions to everyday observations in nature. Topics of study will include geochemistry, geology, hydrology, astronomy and meteorology. Students will analyze the origin, evolution and physical interactions of the properties of matter; including the motion and forces between earth and space systems through evidence, models and explanations. Students will be able to apply this knowledge of physical interactions between energy and matter to predict the resulting impacts on a larger scale. Current events will also influence exact topics covered throughout the semester. This course meets 0.5 credit State requirement and 0.5 CHS Physical Science requirement for graduation.

School – Wide Expectations:

Academic:

1. Read, write and speak effectively
2. Exhibit critical thinking and problem solving skills
3. Use resources to obtain information and facilitate learning

Civic/Social:

1. Work cooperatively in an atmosphere of mutual respect
2. Exhibit personal responsibility

Core Competencies and State Standards:

- 1. Scientific Technique and Knowledge-** Students will demonstrate scientific knowledge in content areas using appropriate terminology both in an oral and writing format.
ESS 1 The Earth and earth materials as we know them today have developed over long periods of time, through continual change processes.
ESS 2 The earth is part of a solar system, made up of distinct parts that have temporal and spatial interrelationships.
ESS3 The origin and evolution of galaxies and the universe demonstrate principles of physical science across vast distances and time.
ESS4 The growth of scientific knowledge in Earth Space Science has been advanced through the development of technology and is used (alone or in combination with other sciences) to identify, understand and solve local and global issues.

SPS1 – Scientific Inquiry and Critical Thinking Skills (INQ) SPS2 – Unifying Concepts of Science SPS3 – Personal, Social, and Technological Perspectives SPS4 – Science Skills for Information, Communication and Media Literacy
- 2. Scientific Investigation-** Students will investigate, solve, explain solutions, and evaluate scientific problems through the scientific process.
SPS1 – Scientific Inquiry and Critical Thinking Skills (INQ) SPS2 – Unifying Concepts of Science SPS3 – Personal, Social, and Technological Perspectives SPS4 – Science Skills for Information, Communication and Media Literacy
- 3. Scientific Research-** Students will research, review and interpret significant scientific developments.
SPS1 – Scientific Inquiry and Critical Thinking Skills (INQ) SPS2 – Unifying Concepts of Science SPS3 – Personal, Social, and Technological Perspectives SPS4 – Science Skills for Information, Communication and Media Literacy

Suggested Texts and Media (Software, A/V, etc.):

1. Textbook: Earth Science Geology, the Environment, and the Universe. Glencoe Science, McGraw
2. Ancillary materials (concept development sheets, labs, etc.): Exam Viewer, Teacher Works, Lab Manager
3. Various DVD's and Videos: Weather Channel , What's Earth Science got to do with it? , Bill Nye the Science Guy (The Atmosphere), Living Planet, How the Earth was made (History channel)? Video Field Trips; The Atom, What's Earth Science Got To Do With It.

The science curriculum at Campbell High School is a dynamic document, reflecting the nature of the subject. It addresses ever-changing areas of study, such as genetics and quantum physics, as well as the fundamentals, such as the Periodic table and Newton's Laws of Motion. Scientific Research is an important component for each course at Campbell. The analysis and interpretation of recent scientific information and articles will vary appropriately with grade level and course difficulty.

We utilize a variety of instructional resources beyond the identified textbooks and materials throughout the school year to enhance your student's educational experience. Parents/Guardians are welcome to review the available resources throughout the school year by contacting their student's teacher. Due to religious or moral objections, alternative assignments may be available upon request. Please contact the classroom teacher for further details.

Suggested Instructional Strategies:

1. **Lecture, Discussion and Demonstration** – Students are expected to take notes from lecture, power point presentations and demonstrations. Use of demonstrations are a way to guide student inquiry. Students are encouraged to ask questions and discussion is an integral part to the inquiry process. Through this, students are encouraged to think independently and 'outside of the box' in order to exhibit critical thinking and problem solving skills.
2. **Lab, Investigation** – Exploratory or investigation labs allow students to ask their own questions about a particular concept. Students also use labs to explore different concepts with expected outcomes. Some labs will be completed individually or cooperatively.
3. **Projects** – Students are expected to use prior knowledge learned as well as research to create projects that are meaningful and fun. Students are expected to present projects to class through various forms such as posters, oral presentations, and power points. One example of this is the Rock Cycle Project.
4. **Current Events** – Students are expected to research recent discoveries or current events in earth science. They present them to the class for group discussion.

Suggested Assessment Strategies:

1. **Quiz / Test** – Multiple choice, true/false, or matching and open response (a mixture of problem solving, essay, and graphical analysis), Lab Activities.
2. **Lab Report** – In order to demonstrate competency in the Scientific Investigation requirement, students communicate lab outcomes in the Campbell High School Lab Report Format revised to be appropriate for freshmen.
3. **Project** – Students are assessed on oral, written presentations and visual displays.
4. **Informal Groupwork** – Various modes of formative assessment in which students work on a particular problem in groups of two to four. Groupwork encourages peer learning, strengthens topical skill sets through teaching, and promotes collaboration and community. Examples of groupwork include Data Analysis, oral presentations and Problem Solving.