

## **a-g Earth Science**

### **Course Description:**

This is an introductory course that should include a thorough exploration of the Earth. The course should include an overview of the Earth, its atmosphere, water system, and geologic structure and history. The course should also include a study of the solar system as well as other related concepts.

**Prerequisite(s):** none

**Length of Course:** One year required for graduation

**Year in School Taken:** 9, 10

### **Course Objectives/Outline:**

Coursework will include:

#### **Astronomy:**

- Brief history of astronomy
- Galaxies
- Stars: description, mapping
- Sun: description, structure, energy
- Planets: characteristics, classification, movement
- Asteroids, comets, and meteors
- Moon: description, motion, phases, eclipses, tides
- Brief history of space exploration

#### **Atmosphere:**

- Structure: characteristics of different atmospheric divisions
- Energy in the atmosphere
- Water in the atmosphere: cloud classification, precipitation
- Movement: air masses, winds, storms
- Weather prediction: gathering and analysis of data, forecasting weather
- Pollution: major sources, effects

#### **Lithosphere:**

- Earth's structure
- Minerals & ores: components, structure, identification
- Rocks & fossils: sedimentary, igneous, metamorphic
- Plate tectonics
- Mountains: types & descriptions
- Earthquakes & volcanoes
- Weathering, mass wasting, & erosion

#### **Hydrosphere:**

- Oceans & Seas: composition, motion, topography of sea floor
- Glaciers: movement, power
- Ground Water System

#### **California Geology**

**Laboratory Assignments:**

Mass, Volume, and Density  
Using topographic maps  
Using a weather map  
How solar energy heats Earth's surface  
Studying precipitation  
Earth's climate  
Building a model of a stream  
Deep water currents  
Identifying minerals  
Rock Properties  
Particle size versus rate of weathering  
Settling rates  
Tension, compression, and shear forces  
Mapping earthquakes  
World distribution of volcanoes  
Mapping plate boundaries  
Determining relative age  
Making a Geologic time scale  
Shadows and time  
Crater formation

**Methods for Evaluating Student Performance:**

Evaluation of student performance is based on individual abilities, interests, and talents. Methods by which student progress is assessed will be through a variety and/or combination of methods. The methods available include but are not limited to the following:

Portfolios  
Parent facilitator and education specialist observation  
Student demonstrations,  
Student grades,  
Student work samples  
Written examination  
Research projects

**Texts:**

Earth Science: Geology, the Environment, and the Universe

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ISBN: 0078664233

Laboratory Manual 0078245672

Study Guide for Content Mastery, Student Edition 0078245656

CA Standards Correlation map for 2002 and 2005 version found by clicking on "state correlations" at:

<http://www.glencoe.com/sites/california/teacher/science/index.html>

Glencoe Science: An Introduction to Earth Science  
Glencoe McGraw-Hill, 1999  
ISBN: 0028278526

Hands-on Geology: K-Twelve Activities & Resources  
SEPM (Society for Sedimentary Geology), 1991  
ISBN: 0918985900