

SCI0900_202338_Staging_EMBR_TEM

SCI-900

2023 05/01/2023 to 04/30/2024 Modified 03/22/2023

Course Description

In this full-year course, students explore the Earth and its place in the universe. Students examine the structure of the earth, the topography, rocks, minerals, weather, natural events, oceans, and climate, and how these have contributed to the geologic history of the planet. Earth's specific and deliberate position in the universe is examined so that students analyze the rationale behind the scriptural truth of Creation and the secular explanations of how and when Earth began. Students are expected to write a researched paper to contrast a secular with a biblical view related to the geologic impact of Noah's Flood. Throughout the course, students engage in demonstrations and lab activities to reinforce the concepts of the lessons.

Rationale

This course allows students an opportunity to explore the Earth and its systems. Knowledge of how the Earth changes over time gives students an understanding of the delicate balance of the earth and the need to preserve it. It allows them the opportunity to explore their surroundings and view their world through different eyes. Studying the Earth will allow students a deeper understanding of the Earth's place in the solar system and the galaxy to prepare for a greater tomorrow. Earth science also opens the students up to new technologies being utilized daily in this study of our planet.

Course Learning Outcomes

- A. The student will plan and conduct investigations which include measurement, technology, charts, cartography, variables, and applications to Earth Science.
- B. The student will demonstrate an understanding of the nature of science and scientific reasoning, logic, and inference.
- C. The student will investigate and understand the characteristics of Earth and the solar system.
- D. The student will investigate and understand how to identify major rock-forming and ore minerals based on physical and chemical properties.
- E. The student will 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.
- F. The student will investigate and understand the differences between renewable and nonrenewable resources.
- G. The student will investigate and understand geologic processes including plate tectonics.
- H. The student will investigate and understand how freshwater resources are influenced by geologic processes and the activities of humans.
- I. The student will investigate and understand that many aspects of the geologic history can be inferred by studying rocks and fossils.
- J. The student will investigate and understand that oceans are complex, interactive physical, chemical, and biological systems and are subject to long- and short-term variations.
- K. The student will investigate and understand that energy transfer between the sun and Earth and its atmosphere drives weather and climate on Earth.

Biblical Integration Outcomes

- A. The student will investigate a biblical perspective on geological history and the origin of the Earth and universe.
- B. The student will investigate geological evidences which confirm the reality of biblical history related to the Flood of Noah in scripture.

Course Resources

See Ember's [Systems Requirements](#) for computer specifications necessary to operate this curriculum.

- Note: Embedded YouTube videos may be utilized to supplement Ember's YouTube videos are the property of the respective content creator, licensed to YouTube for distribution and user access. As a non-profit educational institution, Ember is able to use YouTube video content under the YouTube Terms of Service. For additional information on copyright, please contact the [Jerry Falwell Library](#)

* Course Policies

Types of Assessments

To simplify and clearly identify which policies apply to which assessment, each assessment has been categorized into one of four categories: Lesson, Assignment, Quiz, or Test. Each applicable item on the course Modules page has been designated with an identifier chosen from among these categories. Thus, a Quiz on the American Revolution may be designated by the title, "1.2.W Quiz: The American Revolution."

- **Lesson:** *Any item on the Modules page designated as a "Lesson"*

These include instructional content and sometimes an assessment of that content. Typically, a Lesson will be the day-to-day work that a student completes.

- **Assignment:** *Any item on the Modules page designated as an "Assignment"*

Typical examples of Assignments include, but are not limited to, papers, book reports, projects, labs, and speeches. Assignments are usually something that the student should do his or her best work on the first time.

- **Quiz:** *Any item on the Modules page designated as a "Quiz"*

This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Quizzes cover a smaller amount of material than Tests.

- **Test:** *Any item on the Modules page designated as a "Test"*

This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Tests cover a larger amount of material than Quizzes.

Materials Selection Policy

Ember curates educational materials that are consistent with the school's philosophy; however, the fallen human condition depicted in literature (as in Scripture itself) is not always pleasant. Valuable works sometimes have objectionable or profane elements. Good books provide four (4) recognized values.

- They build godly attitudes and character traits.
- They deepen our social and cultural awareness.
- They strengthen our use of written language.
- They provide a lifelong source of enjoyment and relaxation.

In order to instill these values in students and fulfill the stated objectives of the school, all Ember students are expected to read and study good books on a regular basis. Recognizing that materials designed for one level may not be appropriate for another, three (3) levels of criteria are applied:

- Elementary materials must contain no objectionable material,
- Objectionable elements in sixth through eighth-grade materials must be limited and must serve a specific educational purpose, and
- Objectionable content may be included in high school materials but must be outweighed by positive literary, curricular, and/or Christian values.

The curriculum department has approved required educational materials for students.

Resubmission Policy

Students are expected to submit their best work on the first submission for every Lesson, Assignment, Quiz, and Test. However, resubmissions may be permitted in the following circumstances:

- **Lesson:** Students are automatically permitted two attempts on a lesson. Students may freely resubmit for their first two attempts without the need for teacher approval.

If a student feels that he or she deserves a resubmission on a Lesson, Assignment, Quiz, or Test due to a technical issue such as a computer malfunction, the student should message his or her teacher to make the request. With Ember, the teacher may be a physical school teacher or the student's parent/guardian. The teacher can give another attempt from his or her Canvas account. For more information on how to do this, please review the Ember orientation course.

Schedule

Module 1: Introduction to Earth Science

- Week 1: Let's Learn About Research & Class Expectations
- Week 2: The Scientific Method
- Week 3: Measurement of the Earth
- Week 4: Mapping the Earth

Module 2: Astronomy

- Week 5: The Big Picture
- Week 6: Our Place in the Solar System
- Week 7: The Planets Part I
- Week 8: The Planets Part II
- Week 9: 1st Quarter Review & Test / Research Paper Submission

Module 3: What's Going on Inside the Earth?

- Week 10: Plate Tectonics
- Week 11: Volcanoes & Earthquakes
- Week 12: Earthquakes & Mountains
- Week 13: Mountains & How We Date Rock Layers
- Week 14: Fossils and What They Teach Us

Module 4: Let There Be Rocks

- Week 15: Minerals and Igneous Rocks
- Week 16: Sedimentary & Metamorphic Rocks
- Week 17: How to Understand the Rocks Under Your Feet
- Week 18: Rock Identification and 2nd Quarter Test

Module 5: All About Soil

- Week 19: Resources, Weathering & Soil
- Week 20: Types of Erosion on Land

Module 6: Earth's Features

- Week 21: Oceans
- Week 22: Moving Water
- Week 23: Where Does the Water Go?
- Week 24: Glaciers – Rivers of Ice

Module 7: How the Atmosphere Works

- Week 25: What Makes Up the Atmosphere
- Week 26: How Water Affects the Atmosphere
- Week 27: Clouds and 3rd Quarter Test

Module 8: Weather

- Week 28: Precipitation & Air Pressure
- Week 29: The Wind is Blowing
- Week 30: Weather Forecasting

Module 9: Big Weather & Climate

- Week 31: Storms
- Week 32: Temperature Changes
- Week 33: What is Climate?

Module 10: Human Impacts on the Earth & 4th Quarter Test

- Week 34: Is Our Climate Changing?
- Week 35: Environmental Issues
- Week 36: Review and 4th Quarter Test