SCI0600_202338_Staging_EMBR_TEM

SCI-600

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

Course Description

This year-long course allows students to investigate various science topics using interactive and engaging activities and lessons. Emphasis is placed on the student developing an understanding of Creation and God's order for the world to cultivate a biblical worldview of "science" itself. Students will explore a wide range of topics which include nature, the scientific method and critical thinking, matter, water and the water cycle, the Earth, its surface and its atmosphere, biomes, natural resources, and the universe and solar systems. Students develop foundational science skills such as using the scientific method, measurements, and graphing. Through creating models and simulations, the students can apply science concepts to their daily lives.

Rationale

This course offers students an examination of the biblical foundations and an appreciation of science—the study of God and His creation. He created you and the world around you. Ponder the world around you. Think of how beautiful the mountains are and how amazing the moon and the stars look at night. The ocean is filled with life! God is amazing! His creations are amazing as well. We could spend our entire lives investigating God's works yet never begin to scratch the surface. God wants us to learn about His marvelous creation. He equips us to learn about His works. God created a spark of curiosity in each of us to learn more about Him by studying His creation.

Course Learning Outcomes

A. The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations.

B. The student will investigate and understand basic sources of energy, their origins, transformations, and uses.

C. The student will investigate and understand the role of solar energy in driving most natural processes within the atmosphere, the hydrosphere, and on Earth's surface.

D. The student will investigate and understand that all matter is made up of atoms.

E. The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment.

F. The student will investigate and understand the properties of air and the structure and dynamics of Earth's atmosphere.

G. The student will investigate and understand the natural processes and human interactions that affect watershed systems.

H. The student will investigate and understand the organization of the solar system and the interactions among the various bodies that comprise it.

I. The student will investigate and understand public policy decisions relating to the environment.

Biblical Integration Outcomes

A. The student will identify and describe Creation and the universe from a biblical worldview.

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: Creation & the Universe

- Week 1: Creation & Origins of the Earth
- Week 2: Creation & Origins of the Earth
- Week 3: Module 1 Review & Test

Module 2: Science

- Week 4: The Nature of Science and its Method
- Week 5: Experimental Components
- Week 6: Module 2 Review and Test

Module 3: Matter

- Week 7: Atoms
- Week 8: Compounds, Bonds, and Chemical Equations
- Week 9: Rock Candy Lab and Test

Module 4: Earth's Surface

- Week 10: Earth's Geographic Spheres
- Week 11: Earth's Weathering, Part 1
- Week 12: Earth's Weathering, Part 2, Soil, and Test

Module 5: Atmosphere

- Week 13: Atmosphere Introduction
- Week 14: Heat in the Atmosphere
- Week 15: Atmospheric Wind and Test

Module 6: Weather

- Week 16: Weather Introduction and Clouds
- Week 17: Weather Influences and Severe Weather
- Week 18: Climate Change and Test

Module 7: Water

- Week 19: Characteristics of Water
- Week 20: Groups of Water
- Week 21: Watersheds and Test

Module 8: Earth's Resources

- Week 22: Resources
- Week 23: Renewable and Non-renewable Resources
- Week 24: Managing Resources and Test

Module 9: Society's Impact on Earth's Resources

- Week 25: Society's Impact on Water
- Week 26: Society's Impact on Soil
- Week 27: Society's Impact on Air and Test

Module 10: Earth, Moon, & Sun Relationship

- Week 28: Tilt and Seasons of the Earth
- Week 29: Characteristics of the Moon
- Week 30: Tides and Test

Module 11: Solar System

- Week 31: Gravity and the Sun
- Week 32: Inner Planets
- Week 33: Outer Planets and Test

Module 12: Space Exploration

- Week 34: Dwarf Planets and Astronomical Objects
- Week 35: Models of the Solar System
- Week 36: Satellites and Test