

Earth/Environmental Science explores the biological and physical principles related to the environment in which organisms live on Earth—the Earth’s environment in space and its composition, structure, and processes. Course topics include and exploration of the natural systems on Earth; biogeochemical cycles; the nature of matter and energy; the flow of matter and energy through living and geological systems; natural resources; biodiversity; and environmental stewardship.

The course provides students with opportunities to learn and practice scientific skills within the context of relevant scientific questions. Scientific inquiry skills are embedded in the direct instruction, wherein students learn to ask scientific questions, deconstruct claims, form and test hypotheses, and use logic and evidence to draw conclusions about the concepts. Lab activities reinforce critical thinking, writing, and communication skills and help students develop a deeper understanding of the nature of science.

This course is built to North Carolina state standards.

Length: Two Semesters

### UNIT 1: WHERE IS EARTH?

- Lesson 1: The Universe
- Lesson 2: Solar System Formation
- Lesson 3: Our Neighborhood
- Lesson 4: Planet Earth
- Lesson 5: Where Is Earth? Wrap-Up

### UNIT 2: EARTH'S PHYSICAL SYSTEMS

- Lesson 1: The Hydrosphere
- Lesson 2: The Lithosphere
- Lesson 3: The Atmosphere
- Lesson 4: Doing Science: Earth's Physical Systems
- Lesson 5: Earth's Physical Systems Wrap-Up

### UNIT 3: EARTH'S WATER

- Lesson 1: The Blue Planet
- Lesson 2: Getting Fresh
- Lesson 3: The Oceans
- Lesson 4: Earth's Water Wrap-Up

### UNIT 4: EARTH'S ATMOSPHERE

- Lesson 1: The Sky's the Limit
- Lesson 2: Cycles in the Atmosphere
- Lesson 3: The Windy Planet
- Lesson 4: Earth's Atmosphere Wrap-Up

### UNIT 5: THE BIOSPHERE

- Lesson 1: Nature of the Biosphere
- Lesson 2: Matter and Energy in the Biosphere
- Lesson 3: Ecosystems and Biomes
- Lesson 4: Doing Science: The Biosphere
- Lesson 5: The Biosphere Wrap-Up

## **UNIT 6: SEMESTER 1 WRAP-UP**

- Lesson 1: Semester 1 Wrap-Up

## **UNIT 7: ECOLOGY**

- Lesson 1: Populations
- Lesson 2: Communities
- Lesson 3: Changes in Ecosystems
- Lesson 4: Doing Science: Ecology
- Lesson 5: Ecology Wrap-Up

## **UNIT 8: LAYING THE GROUNDWORK**

- Lesson 1: Earth's Layers
- Lesson 2: Earth's Magnetism
- Lesson 3: It Is Deeply Moving
- Lesson 4: Laying the Groundwork Wrap-Up

## **UNIT 9: THE MOVERS AND SHAKERS**

- Lesson 1: Mountains to Trenches
- Lesson 2: Creaks and Hazards
- Lesson 3: Sculpting Earth
- Lesson 4: The Movers and Shakers Wrap-Up

## **UNIT 10: MINERALS AND ROCKS**

- Lesson 1: Minerals
- Lesson 2: Igneous Rocks
- Lesson 3: Sedimentary Rocks
- Lesson 4: Metamorphic Rocks
- Lesson 5: The Rock Cycle
- Lesson 6: Minerals and Rocks Wrap-Up

## **UNIT 11: HUMANS AND THE ENVIRONMENT**

- Lesson 1: Human Societies
- Lesson 2: Earth's Natural Resources
- Lesson 3: Land Use and Its Effects
- Lesson 4: Doing Science: Humans and the Environment
- Lesson 5: Humans and the Environment Wrap-Up

## **UNIT 12: ENVIRONMENTAL CHALLENGES**

- Lesson 1: Resource Availability
- Lesson 2: Pollution and Waste Management
- Lesson 3: Environmental Change
- Lesson 4: Doing Science: Environmental Challenges
- Lesson 5: Environmental Challenges Wrap-Up

## **UNIT 13: SEMESTER 2 WRAP-UP**

- Lesson 1: Semester 2 Wrap-Up