Unit 1 Science, Ecological Principles and Sustainability

Content Area: **Science**
Course(s): **AP Environmental Science**
Time Period: **September**
Length: **4-5 Blocks**
Status: **Published**

Enduring Understandings

EIN-2 When humans use natural resources, they alter natural systems.

ERT-4 Earth's systems interact, resulting in a state of balance over time.

Essential Questions

- What is Environmental Science?
- How has our environmental impact changed as we have gone from a hunter-gatherer society, to an agricultural society, to an industrial society?
- How does the conservation of matter and the laws of thermodynamics relate to environmental science?
- Why must we understand how ecosystems function in order to understand and solve environmental problems?
- How do plate tectonics shape the landscape and impact our society?

Learning Objectives

EIN-2.A Explain the concept of the tragedy of the commons.

EIN-2.N Explain the variables measured in an ecological footprint.

ERT-4.A Describe the geological changes and events that occur at convergent, divergent, and transform plate boundaries.

Standards

EIN-2.A.1 The tragedy of the commons suggests that individuals will use shared resources in their own self-interest rather than in keeping with the common good, thereby depleting the resources.

EIN-2.N.1 Ecological footprints compare resource demands and waste production required for an individual or a society

ERT-4.A.1 Convergent boundaries can result in the creation of mountains, island arcs, earthquakes, and volcanoes.

ERT-4.A.2 Divergent boundaries can result in seafloor spreading, rift valleys, volcanoes, and earthquakes.

ERT-4.A.3 Transform boundaries can result in earthquakes.

ERT-4.A.4 Maps that show the global distribution of plate boundaries can be used to determine the location of volcanoes, island arcs, earthquakes, hot spots, and faults.

ERT-4.A.5 An earthquake occurs when stress overcomes a locked fault, releasing stored energy.

Content

Environmental Science

Ecological Footprint

Renewable and Nonrenewable Resources

Fossil Fuel history

How Environmental Science is interdisciplinary

Scientific Method

Sustainability

Matter, Chemstry & the Environment

Molecular Bonds

Organic & Inorganic Compounds

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Laws of Thermodynamics

Plate Tectonics

Natural Hazards