



**Course Name:** AP Environmental Science v20

**Course Credit:** 1

**Course Estimated Completion Time:** 32 to 36

**Course Description:** With the current changes in global climate, rising sea levels, and warming oceans, it is important for students to discover the state of Earth's systems and the consequences of human activities. AP Environmental Science provides students with a global view of their world and their role in it. It examines the scientific principles and concepts required to understand the interrelationships between ocean, land, and atmosphere that guide the natural world and allow Earth to be a planet suitable for life. Laboratory activities within the course support learning of these relationships through reflective, hands-on, or virtual experiences. In addition, students identify and analyze environmental problems that are natural and human-made, determining their own ecological footprint in the world to discover how their activities affect the world around them. Students evaluate the relative risks associated with environmental problems and examine alternative solutions including clean energy, sustainable practices, and conservation, for resolving or preventing future environmental problems.

**Prerequisites:** Algebra 1 and two years of high school science, with labs

**Honors Lessons:** No

**Course Profile (Includes Honors, if applicable)**

Type of Assessment	Quantity	Location(s)
Teacher-graded	36	1.02, 1.05, 1.07, 2.04, 2.06, 2.08, 2.09, 3.02, 3.05, 3.06, 4.01, 4.05, 4.08, 4.10 P2, 5.03, 5.05, 5.06, 5.07, 6.02, 6.05, 6.06, 7.05, 7.06, 7.07, 8.03, 8.05, 8.06, 8.09 P2 Enrichment Assessments (8)
Auto-graded	24	1.01, 1.04, 1.06, 2.02, 2.03, 2.05, 2.07, 3.01, 3.03, 3.04, 4.04, 4.06, 4.10 P1, 5.01, 5.02, 5.04, 6.01, 6.04, 7.01, 7.03, 7.04, 8.01, 8.04, 8.09 P1
Partial Auto-graded	16	1.03, 1.08, 2.01, 2.10, 3.07, 4.02, 4.03, 4.07, 4.09, 5.08, 6.03, 6.07, 7.02, 7.08, 8.02, 8.07
Discussion-Based (DBA)	8	01.07, 02.09, 03.06, 04.08, 05.07, 06.06, 07.07, 08.06
Collaboration	4	02.08 Human Population 04.01 Tragedy of the Commons 06.05 Noise Pollution 07.06 Human Health and Diseases
Project-based	3	01.02 Biomes 05.03 Nuclear Energy 08.05 Threats to Biodiversity
<b>Total Assessments</b>	<b>76</b>	

**Types of Assessments (Includes Honors, if applicable)**



Type of Assessment	Available	Type of Assessment	Available
Multiple Choice	Yes	Essay	Yes
Worksheets	No	Collaborative	Yes
Web 2.0	Yes	Short Response	Yes
Project - Based	Yes	Labs	Yes
Self - Check	No	DBAs	Yes

## Scope and Sequence

### SEGMENT 1

#### Module 1—Ecosystems

- Introduction to Ecosystems
- Biomes
- Biogeochemical Cycles
- Primary Productivity
- Trophic Levels and Energy Flow
- Food Chains and Food Webs

#### Module 2—Biodiversity and Populations

- Biodiversity
- Ecological Relationships
- Natural Disruptions to Ecosystems
- Adaptation
- Ecological Succession
- Types of Species and Survivorship
- Population Growth
- Demographics
- Human Populations

#### Module 3—Earth Systems

- Plate Tectonics
- Soil Formation and Erosion
- Soil Composition and Properties
- Watersheds
- Earth's Atmosphere
- Global Wind Patterns
- Solar Radiation and Seasons
- Earth's Geography and Climate
- El Niño and La Niña

#### Module 4—Natural Resources

- Tragedy of the Commons
- Agricultural Practices
- Food Production
- Mining and Urbanization
- Ecological Footprints
- Sustainability
- Integrated Pest Management

### SEGMENT 2

#### Module 5—Energy Resources

- Energy Sources
- Global Energy Consumption
- Fossil Fuels
- Nuclear Energy

- Energy from Biomass
- Solar Energy
- Geothermal Energy
- Hydrogen Fuel Cell
- Hydroelectric Power
- Wind Energy
- Energy Conservation

#### Module 6—Air Pollution

- Introduction to Air Pollution
- Smog
- Thermal Inversion
- Air Pollutants
- Acid Deposition
- Noise Pollution

#### Module 7—Water and Land Pollution

- Sources of Pollution
- Endocrine Disruptors
- Persistent Organic Pollutants (POPs)
- Effect on Aquatic Ecosystems
- Solid Waste Disposal
- Waste Reduction Methods
- Sewage Treatment
- Lethal Dose Response
- Pollution and Human Health
- Pathogens and Infectious Diseases

#### Module 8—Global Change

- Ozone Depletion
- Greenhouse Effect
- Global Climate Change
- Effects on Oceans
- Invasive Species
- Endangered
- Threats to Biodiversity