

ENVIRONMENTAL SCIENCE HONORS (LAB SCIENCE)

Grade level: 9,10,11,12

Credit: 0.5 or 1.0

Prerequisite: None

Environmental Science provides an overview of basic environmental issues, including climate change, sustainability, pollution, depletion of natural resources, renewable energy, loss of biodiversity, deforestation, soil fertility and erosion, and waste disposal. It also explores the history of the environmental movement, the politics and ethics involved in environmental issues, and the regulations that help limit environmental damage.

This is honors level lab course includes labs and projects focused on critical thinking, creativity, and understanding scientific process. Labs are rigorous, yet designed to be done at home with minimal specialized equipment. Students complete 5 projects that are designed to help them assess the environmental damage in their own ecosystems and determine their own environmental footprint. Students will complete 5 of 9 labs. Labs are designed to give students hands on experience in observing and assessing natural systems and how they function. The topics include the recycling of wastes, soil erosion, stream health, invasive species, backyard ecology, energy audits, and acid rain.

Environmental Science Honors Lessons

Teacher Message

Lesson 1: What is Environmental Science?

Project 1: Environmental Journal

Lesson 2: Ecology

Lab 1: Backyard Ecology

Lesson 3: Air Quality and Pollution

Project 2: Local air Pollution Sources



Lesson 4: Climate Disruption

Lesson 5: Forestry Management and Deforestation

Lesson 6: Animal Population and Endangered Species

Lesson 7: Biodiversity

Lab 2: Invasive Species Early Detection Surveys

Lesson 8: Human Population Demographics

Project 3: Ecological Footprints and Carrying Capacity

Lesson 9: Sustainability

Lesson 10: Political Influences and Activism

Lesson 11: Review

Lesson 12: Energy

Lab 3: Energy Audit and Energy Source Investigation

Lesson 13: Soil Quality

Lab 4: Soil Composition and Soil Erosion

Lesson 14: Solid Wastes and Recycling

Lesson 15: Pesticides

Lesson 16: Toxicology

Lesson 17: Water Quality and Pollution

Lesson 18: Watersheds and Management

Lab 5: Acid Rain

Project 4: Float to the Sea: Knowing Your Watersheds

Lesson 19: Environmental Ethics and Law

Lesson 20: Environmental Technologies



Lesson 21: Review

Project 5: A Local Case Study

Students may substitute any of these alternative labs to complete the five lab requirement.

Lab 6: Composting in a Bottle

Lab 7: Bioassays (lettuce seeds)

Lab 8: Waste Stream Analysis

Lab 9: Benthic Macroinvertebrate

