

Course Outline:

I. Introduction to Environmental Science

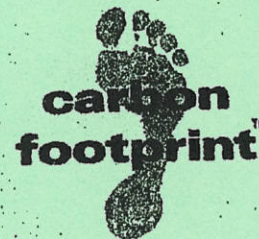
The first unit introduces the theory, philosophy, rhetoric, and terminology that will be used throughout the course. Also, the unit will emphasize the importance of scientific method. Gathering, organizing, and conducting experiments will be reviewed.

Chap 1: Understanding Our Environment
Chap 2: Frameworks for Understanding

II. Life on Earth

The second unit is an introduction of two of the fundamental underpinnings of Environmental Science - basic ecology and the study of populations.

Chap 3: Matter, Energy, and Life
Chap 4: Evolution, Communities, & Species Interaction
Chap 5: Biomes: Global Patterns of Life
Chap 11: Biodiversity
Chap 12: Biodiversity: Preserving Landscapes
Chap 13: Restoration Ecology



III. Population Dynamics, Human Population, Growth, and Demography

Students will study the basic needs of human beings, what happens when these needs are not met, and what is being done in an attempt to make certain these needs are met for all people. Students will be studying about agriculture, including the various methods of growing crops, the history of agriculture, and the "green revolution."

Chap 6: Population Biology
Chap 7: Human Population
Chap 9: Food & Agriculture
Chap 10: Pest Control
Chap 8: Environmental Health and Toxicology



IV. Planet Earth's Hydrosphere and Atmosphere

This is a transition from the study of ecology and ecosystems to the study of Earth's hydrosphere and atmosphere. The more students know about our water resources, the more they are able to take care of it. Included in this unit is the effect environmental hazards have on human health, health of the environment, and an examination of the risks we face in our environment. We will study some of the most serious global environmental problems we face today.

Chap 14: Geology and Earth Resources
Chap 17: Water Use and Management
Chap 18: Water Pollution
Chap 15: Air, Weather, and Climate
Chap 16: Air Pollution

V. Non-Renewable and Renewable Resources

Fossil fuel reserves are finite and the use of other energy sources will need to be increased in the future. Students study the advantages and disadvantages of alternative sources of energy, which can be used in the place of fossil fuels.

Chap 19: Conventional Energy
Chap 20: Sustainable Energy
Chap 21: Solid, Toxic, Hazardous Waste

VI. Environmental Issues and Policies

Humans have had an impact on the environment for thousands of years. Technology and population growth have enabled us to increase both the rate and scale of our impact on Planet Earth. Understanding the role of cultural, social, and economic factors is vital to the development of plausible solutions to our environmental problems.

Chap 22: Urbanization and Sustainable Cities
Chap 23: Ecological Economics
Chap 24: Environmental Policy, Law, and Planning
Chap 25: What Then Shall We do?



OVERPOPULATION!



The following themes provide a foundation for the structure of the Environmental Science course.

- Science is a process.
Science is a method of learning more about the world.
Science constantly changes the way we understand the world.
- Energy Conservations underlie all ecological processes.
Energy cannot be created, it must come from somewhere.
As energy flows through systems, at each step more of it becomes unusable.
- The Earth itself is one interconnected system.
Natural systems change over time and space.
Biogeochemical systems vary in ability to recover from disturbances.
- Environmental problems have a cultural and social context.
Understanding the role of cultural, social, and economic factors is vital to the development of solutions.
- Human survival depends on developing practices that will achieve sustainable systems.

* Name two evidences of climate change.

* Describe one negative impact you have had on the environment in the past 5 days?

* What threatens biodiversity?

* Where are Persistent Organic Pollutants (POPs) most likely to be stored in the body? Why?

* What is the relationship between annual income and life expectancy?

* Name two countries that signed the Kyoto Protocol.

* What is a carbon sink and can you name one?

* How have you demonstrated stewardship over the ecosystem in the past week?

* Explain how climate change affects our Earth?

* What is Eutrophication?

* Name two things that you know about Love canal.

* You will be one of the ? people living on Earth! What is the human population count today?

* Lorax! Who was He?

Honors Environmental Science

CARBON footprint

ENVIRONMENTAL

conservation

resource management

POLITICAL ISSUES

HEALTH

natural resources

BIODIVERSITY

human population

Earth Day

SUSTAINABILITY

climate change

water POLLUTION land

deforestation FLORA ECOLOGY FAUNA

air California Coastal Clean-Up

scientific research

PLANET EARTH

interdisciplinary studies

discovering the SCIENCE of the ENVIRONMENT