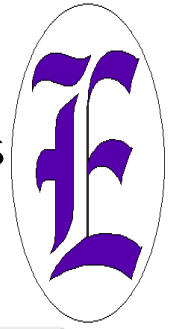


Ephrata High School Course Syllabus

Environmental Science

Course Number: 4035



I. Course Description

The main focus of *Environmental Science* is the conservation of our natural resources to ensure their future availability. *Environmental Science* is a hands-on, real-life application course in which students will focus on their local environment through various activities and field trips. The topics investigated will include water, non-renewable and renewable resources, air pollution, ecosystems and their interactions, land usage, environmental health, agriculture and society, as well as human impacts on the environment. Students will be required to complete numerous lab investigations, several research papers, and employ computer-based investigations using interactive environmental science modules as well as the Internet. Basic computer skills are required for this course.

II. Materials & Equipment

Textbooks for the course are as follows:

Environmental Science Karen Arms © 2006

Environment and Ecology for Pa: Meeting the Standards © 2003

The instructor will provide laboratory and field equipment.

III. Course Goals & Objectives

Over the course of study students will:

- Become familiar with the water cycle
- Become familiar with lab procedures to conduct environmental investigations
- Learn how to better conserve natural resources
- Evaluate the various types of energy available
- Evaluate the effects of humans on the environment
- Evaluate land use and food production

IV. Course Topics (Summary Outline)

- Unit 1: **Ecosystems and their Interactions**
 - Benefits of biodiversity, sustainability, and succession
 - Causes of the human population explosion
 - Primary and secondary succession
- Unit 2: **Soil, Food Production, and Pests**
 - Soil structure and composition
 - Best management practices
 - Integrated pest management
- Unit 3: **Earth Systems and Natural Occurrences**
 - Weathering, erosion, the constant shaping processes of our planet
 - volcanic activity, earthquakes, mountain building, mid-ocean ridges, deep-sea trenches, new land being formed

- Unit 4: **Water**
 - Water resources
 - Causes and effects of water pollution
 - Water conservation
 - Water issues surrounding the Chesapeake Bay watershed

- Unit 5: **Renewable vs. Non-Renewable Resources and Energy**
 - Comparison and contrast of renewable and non-renewable resources
 - Alternative energy production options
 - Electric production

- Unit 6: **Weather**
 - Weather trends and patterns investigated
 - How weather patterns are changing
 - How weather carries and spreads pollution

- Unit 7: **Air Pollution**
 - Sources of air pollution
 - Effects of air pollution
 - Ways to reduce air production

- Unit 8: **Atmosphere Conditions**
 - Ozone Layer
 - Greenhouse Effect
 - Global Warming

- Unit 9: **Water as a Resource**
 - Factors affecting water quality and biodiversity

V. Assignments & Grading

A combination of tests, quizzes, laboratory reports, classroom assignments, homework, projects, and participation will be used to evaluate students. All work will be assigned a point value. At the end of each marking period, a comparison between points accumulated and total points possible will determine percentage grade for the quarter. Final grades will be calculated using the Ephrata Area School District grading scale.

Projects/Labs: -- Projects and laboratory investigations will be assigned throughout the year. Each project and lab will be described in detail with rubrics when the assignments are made.

Class Participation – Everyone is expected to be an active class participant.