Course Outline

Course: Environmental Science 17.02
Level: 9th, 10th, and 11th grade (LLD)
Credits: 5
Revised 3/09 (D. Wilson)
Prerequisites: none

Course Description

Environmental Science has been designed for the first, second or third year requirement of the Language Learning Disabled class. It will follow or precede biology or general science. This course is designed to enable every students to understand and appreciate the basic k knowledge of the Earth, the environment, and how the population affects the Earth.

High Point Regional High School's curriculum and instruction are aligned to the state's Core Curriculum Standards and address the elimination of discrimination by narrowing the achievement gap, by providing equity in the educational programs and be providing opportunities for students to interact positively with others regardless of race, creed, color, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, religion, disability, or socio-economical status.

CCCS Addressed:

- Standard 5.2 (Science and Society) All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology.

- Standard 5.4 (Nature and Process of Technology) All students will understand the interrelationships between science and technology and develop a conceptual understanding of the nature and process of technology.

- Standard 5.5 (Characteristics of Life) All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

- Standard 5.8 (Earth Science) All students will gain an understanding of the structure, dynamics, and geophysical systems of t he earth.

- Standard 5.10 (Environmental Studies) All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena.

Goal: To explore science and the environment

Objectives:

- To understand that environment science includes many different areas of study
- To describe the major things that all living things need to survive
- To explain how life on Earth has changed over time
- To describe five major environmental problems
- To list and describe the steps in the scientific method
- To explain why science is important to society

Goal: To understand the dynamic Earth

Objectives:

- To describe the origins of Earth
- To identify and describe Earth's three major parts
- To describe how water, oxygen, and other elements move through the environment
- To define weather and climate
- To explain the changes that happen on Earth over short and long time periods

Goal: To develop an understanding how living things interact

Objectives:

- To define ecology and identify biotic and abiotic factors
- To describe the parts of an ecosystem
- To identify the roles of producers, consumers, and decomposers
- To describe food chains and food webs
- To define niche, habitat, and predator-prey relationships
- To explain succession and how ecosystems change over time

Goal: To develop an understanding of the diversity of life

Objectives:

- To identify three levels of biodiversity
- To explain how biodiversity is measured
- To describe how biodiversity has developed
- To understand the concept of a web of life
- To explain how biodiversity benefits the planet

Goal: To develop an understanding of the biomes of the world

Objectives:

- To define biome and compare and contrast terrestrial and aquatic biomes
- To describe characteristics and locations of rain forests, coniferous forests, and deciduous forests
- To describe characteristics and locations of grasslands, tundra, and deserts
- To describe characteristics and locations of marine and freshwater biomes

Goal: To develop an understanding of different types of energy

Objectives:

- To understand what energy is
- To name three fossil fuels and their advantages and disadvantages
- To describe nuclear energy and its benefits and risks
- To name five types of renewable energy and their advantages and disadvantages
- To explain how energy experts expect to meet future energy demand

Goal: To develop an understanding of water resources and water pollution

Objectives:

- To describe Earth's water resources and why they are important
- To identify the main ways water is used and how it is managed
- To define three major sources of water pollution
- To explain how people can conserve and protect water resources

Goal: To develop an understanding of air pollution

Objectives:

- To explain what air pollutants are and where they come from
- To describe four major forms of urban air pollution
- To explain how acid rain forms and what effect it has
- To describe glob al warming and climate change
- To explain some of the ways to reduce air pollution

Goal: To develop an understanding of people and the affects on the environment

Objectives:

- To describe major trends in world population
- To understand the link between population growth and environmental impact
- To understand the link between consumption and environmental impact
- To describe some ways that people can reduce their impact on the environment

Goal: To develop an understanding of solid and hazardous waste

Objectives:

- To describe the major types of solid waste
- To explain four ways solid waste is managed
- To describe the major types of hazardous waste
- To understand several ways to prevent and control solid waste

Goal: To develop an understanding of ways of protecting biodiversity

Objectives:

- To describe the major threats to biodiversity
- To explain the major causes of habitat destruction
- To explain how habitat loss is connected to species extinction
- To describe how nonnative species affect biodiversity
- To explain how wildlife trade affects biodiversity

To describe e strategies for preventing biodiversity loss

Materials: Environmental Science, American Guidance Service, 2007
Planet Earth (DVD), Smart board, Internet

Evaluation:

Homework based on	10 points
Class work based on	10 points
Quizzes based on	50 points
Tests based on	100 points
Projects based on	100 points