

WARREN COUNTY SCHOOL DISTRICT

Planned Instruction

Course Title: Environmental Science

Course Number: 00327

Suggested Educational Level(s): Grades 10

Suggested Periods Per Week: 5 **Length of Period:** .67 hours

Suggested Length Of Course: 60 hours

Units Of Credit (If Appropriate): .5 credit

Date Written: April 28, 2005 **Date Approved:** June 13, 2005

Date Reviewed: April , 2005 **Implementation Year:** 2005/2006

Teacher Certification Required: Environmental Science, Biology

Standards Addressed (code):

3.1.12 BC; 3.6.12A; 4.2.12ABC; 4.8.10ABC; 4.9.12A

Relationship to Other Planned Instruction:

Prerequisites: Successful completion of Academic or Applied Biology or permission of the Principal.

Special Requirements: Modifications will be made to accommodate students with special needs.

Writing Team Members:

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Standards addressed (code and description):

3.1 Unifying Themes

12 B Apply concepts of models as a method to predict and understand science and technology

12 C Assess and apply patterns in science and technology

3.6 Technology Education

12 A Analyze biotechnologies that relates to propagating, growing, maintaining, adapting, treating and converting

4.2 Renewable and Nonrenewable Resources

12 A Analyze the use of renewable and non-renewable resources

12 B Analyze factors affecting the availability of renewable and non-renewable resources

12 C Analyze factors that influence the availability of natural resources

4.8 Humans and the Environment

10 A Analyze how society's needs relate to the sustainability of natural resources

10 B Analyze the relationship between the use of natural resources and sustaining our society

10 C Analyze how human activities may cause changes in an ecosystem

4.9 Environmental Law

12 A Analyze environmental laws and regulations as they relate to environmental issues

COURSE DESCRIPTION: This one-semester course will assist students in developing the awareness, knowledge, skill and commitment to result in informed decisions, responsible behaviors and constructive actions concerning the environment. The course involves the study of the principles of ecology and the interdependence of natural and human systems. Also included are the cause and effect of environmental problems and ways that we as individuals can actively participate in presenting such problems and work towards solutions concerning existing ones. Classroom studies are combined with hands-on experiences including labs and field studies. (1 semester)

Specific Educational Objectives to be Taught:

1. Understand the dynamics of populations and species interactions
2. Determine what natural resources are renewable and non-renewable
3. List conservation methods for air, water, land and energy resources
4. Explain ways of determining and maintaining biodiversity in an ecosystem
5. List sources of water, land and air pollution
6. Explain the effects of water, land and air pollution
7. Describe the recovery and disposal methods of pollutants
8. Evaluate human population dynamics and associated problems and devise possible solutions
9. Explain the role of economics, technology, government and individuals in environmental policy

Outline of Content Sequence and Recommended Time (weeks or days):**A. Introduction****B. Resources and their Conservation 7 weeks**

1. soils
2. water resources
3. energy and mineral resources
4. land resources and land use conflict
5. sustainable development of resources
6. biotic resources and biodiversity

C. Pollution and Degradation of Resources 6 weeks

1. water pollution
2. toxic wastes and ground water pollution
3. air pollution
4. acid precipitation, global warming and ozone depletion
5. radiation
6. solid wastes, waste management and resource recovery
7. noise pollution

E. Human Population and Associated Problems 3 weeks

1. human population dynamics
2. associated problems and solutions

F. Environmental Stewardship 2 weeks

1. economics and the environment
2. technology and the environment
3. government and the environment
4. individual responsibilities, participation and voluntary actions

Summative Assessments: To be developed by teachers