



Course Overview

High School | Environmental Science - Last Updated on April 4, 2025

DESCRIPTION

K-12 Content Area | Mission & Philosophy Statement

- Young people are born investigators, with natural curiosities about the physical, biological, and social worlds they experience. Anchoring science learning in real-world phenomena connects curiosities to core conceptual understandings.
- Students actively construct understanding through inquiry, experimentation, and analysis to develop science and engineering practices such as asking questions, planning and carrying out investigations, and constructing explanations.
- Integration of crosscutting concepts such as patterns, cause and effect, and systems thinking promote interdisciplinary understanding and sense-making of the natural world.
- Science learning occurs alongside other disciplines to foster holistic understanding and application of knowledge.

Course Description

The environment impacts our lives in many aspects. This course is meant to educate students about the nature of science and the environment. If faced with decisions that will impact their environment, students will have a thorough understanding and background to make the best scientifically-based decisions possible. Emphasis is placed on developing critical thinking and problem solving skills while enabling students to begin to think like scientists.

Environmental Science explains how scientists describe the workings of the environment through the study of living and nonliving factors and their interdependence. Nutrient cycles, climate, and properties of water will be examined as they relate to each other and living systems. Life will be examined from multiple system levels to grasp the interactions with each other and their environment. Evolution and its role in providing the biodiversity found on Earth will be explored. Finally humans impact upon natural ecosystems will be explored and solutions to our environmental challenges will be explored.

STANDARDS

Pennsylvania - Grade 12 - Environment and Ecology

4.1.12.A

4.1.12.B

4.1.12.C

4.1.12.D

4.1.12.E

4.1.12.F

4.2.12.A

4.3.12.A

4.3.12.B

4.4.12.B

4.5.12.A

Pennsylvania - Grade 10 - Environment and Ecology



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4.1.10.A.

4.1.10.A.a

4.1.10.A.b

4.1.10.A.c

4.1.10.A.d

4.1.10.B.

4.1.10.C.

4.2.10.A.

4.1.10.E.

4.5.10.D.a

4.2.10.A.c

4.2.10.B.

4.2.10.B.a

4.2.10.C.a

4.2.10.C.

4.3.10.A.

4.4.10.A.

Pennsylvania - Grade 10 - Science and Technology and Engineering

3.1.C

3.1.10.C1

COURSE OBJECTIVES

The objectives are the course are to meet the Pennsylvania State Standards in Science and Technology.

ASSESSMENT TYPES

The following assessment types will be used during the course:

- Curriculum Based Measures
- Formative Assessments
- Summative Assessments
- Performance Based Assessments

SUGGESTED METHODS OF INSTRUCTION

A science program demands the use of a variety of instructional strategies to foster scientific thinking. Below is a list of suggested strategies for high-quality instruction:

- Instructional components outlined in *Framework for Teaching* by Charlotte Danielson
- Hands-on learning
- Posing questions for investigation
- Cooperative learning and collaboration
- Inquiry, engineering, and design



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RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
<p>Student Text Resources:</p> <p>Heithaus, M., and Arms, K. Environmental Science. Houghton Mifflin Harcourt, 2013.</p> <ul style="list-style-type: none"> • Student Edition Printed Version • Student Edition Electronic Version - Schoology <p>Teacher Text Resources:</p> <p>Heithaus, M. and Arms, K. (2013). <i>Environmental Science</i>. Houghton Mifflin Harcourt.</p> <ul style="list-style-type: none"> • Teacher Edition Printed Version 	<p>Other Resources</p> <ul style="list-style-type: none"> • Teacher Created Resources • District approved supplemental resources and labs 	<p>Technology</p> <ul style="list-style-type: none"> • District approved supplemental technology • Explore Learning Gizmo Virtual Labs