Wallenpaupack Area School District Planned Course Curriculum Guide

Department: Science

Name of Course: Introduction to Conservation and Environment

Course Description:

This introductory course is designed for students who have an interest in the natural environment and the science and mathematics that accompany its study. Students will participate in many and varied hands-on and minds on activities that focus on how different professionals in this field go about their work. In doing so, students will develop and hone their problem-solving skills, their critical literacy skills, and their communication skills in creative ways. Finally, students will learn about the policies and laws that affect how humans interact with the natural world. Areas of study will include: Diversity, Systems Thinking, and Sustainability/Human/Environment Interactions.

Revision Date: October 2025

Jamie Bartholomew

Wallenpaupack Area School District Curriculum	
COURSE: Introduction to Conservation and Environment	GRADE/S: 9-10
UNIT 1: History of Conservation Movement & Federal and State agencies	TIMEFRAME: 14-16 classes

PA STEELS:

3.4.9-12.A Analyze and interpret how issues, trends, technologies, and policies impact agricultural, food, and environmental systems and resources.

3.4.9-12.B Apply research and analytical skills to evaluate the conditions and motivations that lead to conflict, cooperation, and change among individuals, groups, and nations.

3.4.9-12.G Analyze and evaluate how best resource management practices and environmental laws achieve sustainability of natural resources.

3.4.9-12.H Design and evaluate solutions in which individuals and societies can promote stewardship in environmental quality and community well-being.

3.5.9-12.E Evaluate how technology and engineering advancements alter human health and capabilities.

3.5.9-12.L Interpret laws, regulations, policies, and other factors that impact the development and use of technology.

3.5.9-12.GG Evaluate how technology and engineering have been powerful forces in reshaping the social, cultural, political, and economic landscapes throughout history.

3.5.9-12.HH Analyze how the Industrial Revolution resulted in the development of mass production, sophisticated transportation and communication systems, advanced construction practices, and improved education and leisure time.

3.5.9-12.II Investigate the widespread changes that have resulted from the Information Age, which has placed emphasis on the processing and exchange of information.

3.5.9-12.JJ Identify and explain how the evolution of civilization has been directly affected by, and has in turn affected, the development and use of tools, materials, and processes.

UNIT OBJECTIVES (SWBATS):

- Explain the history that led to environmental laws today, including local laws, state laws and federal laws.
- Create a timeline of environmental events.
- Identify which agencies oversee environmental laws and be able to find information from their websites.
- Explain to peers about the responsibilities of a local, federal or state agency.

- Research an environmental or conservation career

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Notes
- Small and Large Group Discussions
- Group Work
- Independent Work
- Written Assignments

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Formative Assessments
- Summative Assessments

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

Struggling Student – Remediation

Teacher /student individualized instruction to include...

- typed notes
- guided questions

Teacher /student individualized instruction to include...

*Student assignments are more in-depth, critical thinking incorporated increased independent work, and more challenging assessments.

RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

https://www.pbs.org/wgbh/americanexperience/features/earth-days-modern-environmental-movement/
https://www.earthday.org/environmental-history-timelines/

https://www.epa.gov/
https://www.doi.gov/recovery/about-us/primary-agencies/EPA
https://www.fws.gov/
https://www.usda.gov/
https://www.nps.gov/index.htm
https://www.pa.gov/agencies/fishandboat
https://www.pa.gov/agencies/pgc

VOCABULARY: Conservation, federal law, state law, local law, Game Commission, Fish and boat commission, EPA, fur bearer, small game, large game, bioaccumulation

Wallenpaupack Area School District Curriculum	
COURSE: Introduction to Conservation and Environment	GRADE/S: 9-12th
UNIT 2: Introduction to identification, classification & interactions	TIMEFRAME: 30-34 classes

PA STEELS:

3.1.9-12.B Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

3.1.9-12.M Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

3.1.9-12.N Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

3.1.9-12.O Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce

3.1.9-12.V Create or revise a simulation to test a solution to mitigate the adverse impacts of human activity on biodiversity.

3.1.9-12.W Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

UNIT OBJECTIVES (SWBATS):

- Use and design a dichotomous key.
- Explain the natural history of mammals based on their dentition and pelts.
- Classify trees into family groups.
- Classify fish into family groups.
- Classify birds into family groups.
- Classify macroinvertebrates.
- Create a local food web.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Notes
- Laboratory Activity
- Small and Large Group Discussions
- Group Work
- Independent Work
- Written Assignments

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Formative Assessments
- Summative Assessments

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

Struggling Student – Remediation

Teacher /student individualized instruction to include...

- typed notes
- guided questions

Advanced Student – Extension

Teacher /student individualized instruction to include...

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RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

Merlin Bird ID app
Peterson Field Guide to Birds
Common Trees of Pennsylvania
Newcomb's Wildflower Guide
https://www.pa.gov/agencies/fishandboat
https://www.pa.gov/agencies/pgc

VOCABULARY:
Crown, flanks, nape, secondary feathers, primary feathers, midrib, leaflet, alternate, opposite compound, loped, serrated, entire, whorl

Wallenpaupack Area School District Curriculum	
COURSE: Introduction to Conservation and Environment	GRADE/S: 9-12th
UNIT 3: Field Research	TIMEFRAME: 24-26 classes

PA STEELS:
3.4.9-12.D Apply research and analytical skills to systematically investigate environmental issues ranging from local issues to those that are regional or global in scope.
3.4.9-12.E Plan and conduct an investigation utilizing environmental data about a local environmental issue
3.4.9-12.G Analyze and evaluate how best resource management practices and environmental laws achieve sustainability of natural resources.
3.4.9-12.H Design and evaluate solutions in which individuals and societies can promote stewardship in environmental quality and community well-being.
3.4.9-12.I Analyze and interpret data on a regional environmental condition and its implications on environmental justice and social equity.
3.5.9-12.H Evaluate ways that technology and engineering can impact individuals, society, and the environment. 3.5.9-12.I (ETS) Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.
3.5.9-12.P Apply a broad range of design skills to a design thinking process.
3.5.9-12.Y (ETS) Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

UNIT OBJECTIVES (SWBATS):

- Collect and analyze data.
- Plan and execute research.
- Communicate their results.
- Interpret printed research including graphs and tables.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Notes
- Laboratory Activity
- Small and Large Group Discussions
- Group Work
- Independent Work
- Written Assignments

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Summative Assessments
- Formative Assessments

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

Struggling Student – Remediation

Teacher /student individualized instruction to include...

- typed notes
- guided questions

Advanced Student – Extension

Teacher /student individualized instruction to include...

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RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

Threats to the forest Insects, plants and diseases

RESOURCE SPECIFIC VOCABULARY: Scientific method

Wallenpaupack Area School District Curriculum	
COURSE: Introduction to Conservation and Environment	GRADE/S: 9-12
UNIT 4: Invasive Species	TIMEFRAME: 10-12 classes
PA STEELS: 3.4.9-12.F Evaluate and communicate the effect of integrated pest management practices on indoor and outdoor environments. 3.4.9-12.H Design and evaluate solutions in which individuals and societies can promote stewardship in environmental quality and community well-being.	

3.4.9-12.G Analyze and evaluate how best resource management practices and environmental laws achieve sustainability of natural resources.

3.5.9-12.Y (ETS) Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

UNIT OBJECTIVES (SWBATS):

- Identify invasive species.
- Communicate the effect invasive species have on an ecosystem.
- Determine solutions to the invasive species problem.
- Communicate the importance of invasive species removal and planting of native plants.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Laboratory Activity
- Small and Large Group Discussions
- Group Work
- Independent Work
- Written Assignments

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Formative Assessments
- Summative Assessments

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

Struggling Student – Remediation

Teacher /student individualized instruction to include...

- typed notes
- guided questions
- textbook review
- audio textbook

Advanced Student – Extension

Teacher /student individualized instruction to include...

*Student assignments are more in-depth, critical thinking incorporated increased independent work, and more challenging assessments.

RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

Threats to the forest Insects, plants and diseases

Common Trees of Pennsylvania

Newcomb's Wildflower Guide

VOCABULARY: choking out vegetation, sucker roots, eradicate, infestation, naturalized, noxious weed, non-native species, native species.