



Standards Correlations

Rock Cycle 3rd - 12th

Program Synopsis

Dig into northeastern Indiana's rich geological history! Students discover the impact glaciers had on this area by seeing glacial activity up close. Hike down an esker, move through layers of topsoil and glacial till to find a peat bog, explore and identify rocks in an abandoned gravel pit, and use models to understand how glaciers changed Indiana's landscape.

Indiana Academic Standards for Science

3rd Grade

- LS3.B** | **Natural Selection:** Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)
- LS2.C** | **Ecosystem Dynamics, Functioning, and Resilience:** When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4)
- LS4.D** | **Biodiversity and Humans:** Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)

4th Grade

- ESS1.C** | **The History of Planet Earth:** Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. (4-ESS1-1)

5th Grade

- ESS1.A** | **The Universe and Its Stars:** Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)

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Middle School

- ESS1.A** | **The Universe and Its Stars:** The planet's systems interact over scales that range from microscopic to global in size, and they operate over fractions of a second to billions of years. These interactions have shaped Earth's history and will determine its future. (MS-ESS2-2)
- ESS2.C** | **The Roles of Water in Earth's Surface Processes:** Water's movements—both on the land and underground—cause weathering and erosion, which change the land's surface features and create underground formations. (MS-ESS2-2)
- ESS2.C** | **The Roles of Water in Earth's Surface Processes:** Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. Global movements of water and its changes in form are propelled by sunlight and gravity. (MS-ESS2-4)

High School

- ESS2.C** | **The Roles of Water in Earth's Surface Processes:** The abundance of liquid water on Earth's surface and its unique combination of physical and chemical properties are central to the planet's dynamics. These properties include water's exceptional capacity to absorb, store, and release large amounts of energy, transmit sunlight, expand upon freezing, dissolve and transport materials, and lower the viscosities and melting points of rocks. (HS-ESS2-5)

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Indiana Environmental Literacy Guidelines

for up to 4th

Questioning, Analysis and Interpretation

Design simple investigations for both classroom and outdoor settings to help answer their questions. Their investigations will include making predictions, developing a hypothesis, making observations and drawing conclusions.

Locate and collect information about the environment and environmental topics by using tools, maps, technology and basic field skills (observing, interviewing, measuring).

Use models to demonstrate relationships, patterns, and processes.

Knowledge of Environmental Process and Systems

List sources of energy, and be able to tell the difference between renewable and non-renewable sources.

Describe and give examples of natural resources; e.g., water, minerals, soils, air, etc.

Skills for Understanding and Addressing Environmental Issues

Apply knowledge from the past, present and of future trends to understand and address local environmental problems and issues. For example, describe what has changed, is changing and could change to predict future issues and potential solutions.

Identify some of the decisions and actions related to an issue and explain why those decisions and actions occurred.

Describe how their own actions and those of others have affected an issue.

Personal and Community Action

Understand how their civic responsibilities promote personal actions that support their environment.

Connect with their local environment through a variety of positive outdoor experiences.



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Indiana Environmental Literacy Guidelines

for up to 12th Grade

Questioning, Analysis and Interpretation

Develop, modify, clarify, and explain questions about important environmental issues, and describe why and how they arrived at those questions.

Identify specific environmental questions, problems, or situations related to local, national and global environmental issues.

Design focused environmental investigations using appropriate measurements, observations and tools.

Knowledge of Environmental Process and Systems

Explain how change is a natural process, citing examples of succession, evolution, and extinction.

Identify and evaluate multiple uses of natural resources and how society is influenced by the availability of these resources.

Explain how humans' use of our resources can impact the environment and deplete resources.

Skills for Understanding and Addressing Environmental Issues

Define and clearly articulate environmental issues, taking into consideration connections to other issues, how widespread its effects are, and whether it is unique to a particular area.

Compare the effects of natural and human-caused activities that contribute to or challenge an ecologically and economically sustainable environment.

Use questioning and analysis skills to understand the beliefs, attitudes, and values held by people involved in an environmental issue.

Personal and Community Action

Explain how characteristics such as trust, patience, self-discipline, respect and open-mindedness help people function together to resolve environmental issues. Practice exhibiting these important characteristics in addressing a variety of environmental issues.

Articulate their personal beliefs regarding their relationship to the environment and how they arrived there by citing personal experiences, alternative viewpoints, and the research of scientifically-relevant sources.

Expand their personal connections with their local environment.

Document prepared by Merry Lea according to current [Indiana Academic Standards](#) from the Indiana Department of Education website and according to [Indiana Environmental Literacy Guidelines](#) from the Environmental Education Association of Indiana.