



Growing Students and Science

Making the Connection to
Ohio Education Standards
5th Grade



Fall General Overview

Pre Visit Classroom

- Keying out Plants
- Schoolyard Study

Holden Visit

- Collect Data from two sites to discuss natural and human impact
 - Site A) Forest- Ohio looked like 200 years ago
 - Site B) Meadow / Farm Field- some of Ohio looks like now

Post Visit Classroom

- Time Travel: Our Area 200+ Years Ago
- Comparing Ecosystems
- Natural Disasters
- Seed Banks: Pioneers Close to Home
- Surviving and Thriving: Pillbug Behavior
- Action Project



Fall Indicators

SCIENCE

Diversity and Interdependence of Life

- Summarize that organisms can survive only in ecosystems in which their needs can be met (e.g., food, water, shelter, air, carrying capacity and waste disposal). The world has different ecosystems and distinct ecosystems support the lives of different types of organisms.
- Support how an organism's patterns of behavior are related to the nature of that organism's ecosystem, including the kinds and numbers of other organisms present, the availability of food and resources, and the changing physical characteristics of the ecosystem.
- Analyze how all organisms, including humans, cause changes in their ecosystems and how these changes can be beneficial, neutral or detrimental (e.g., beaver ponds, earthworm burrows, grasshoppers eating plants, people planting and cutting trees and people introducing a new species).

Earth Systems

- Investigate ways Earth's renewable resources (e.g., fresh water, air, wildlife and trees) can be maintained.



Fall Indicators Continued

SCIENCE Continue

Science and Technology

- Investigate positive and negative impacts of human activity and technology on the environment.
- Explain how the solution to one problem may create other problems.

Scientific Inquiry

- Select and safely use the appropriate tools to collect data when conducting investigations and communicating findings to others (e.g., thermometers, timers, balances, spring scales, magnifiers, microscopes and other appropriate tools).
- Evaluate observations and measurements made by other people and identify reasons for any discrepancies.
- Use evidence and observations to explain and communicate the results of investigations.
- Identify one or two variables in a simple experiment.



Fall Indicators Continued

SCIENCE Continue

Scientific Inquiry Continue

- Identify potential hazards and/or precautions involved in an investigation.
- Explain why results of an experiment are sometimes different (e.g., because of unexpected differences in what is being investigated, unrealized differences in the methods used or in the circumstances in which the investigation was carried out, and because of errors in observations).

Scientific Ways of Knowing

- Summarize how conclusions and ideas change as new knowledge is gained.
- Develop descriptions, explanations and models using evidence to defend/support findings.
- Explain why an experiment must be repeated by different people or at different times or places and yield consistent results before the results are accepted.
- Identify how scientists use different kinds of ongoing investigations depending on the questions they are trying to answer (e.g., observations of things or events in nature, data collection and controlled experiments).



Fall Indicators Continued

Scientific Ways of Knowing

- Keep records of investigations and observations that are understandable weeks or months later.

SOCIAL STUDIES

Chronology

- Create time lines and identify possible relationship between events.
- Explain the impact of settlement, industrialization and transportation on the expansion of the United States.

Problem Solving

- Use a problem-solving/decision-making process which includes:
 - a. Identifying a problem;
 - b. Gathering information;
 - c. Listing and considering options;
 - d. Considering advantages and disadvantages of options;
 - e. Choosing and implementing a solution
 - f. Developing criteria for judging its effectiveness;
 - g. Evaluating the effectiveness of the solution.



Winter Classroom Visit General Overview

Pre visit

- Students Read - Rachel Carson: Pioneer of Ecology

Visit to Schools

- Rachel Carson first person interpreter
- Photosynthesis and Food Web Activity
- Observation Activity

Post Visit

- Introduction to Stream Life Activities



Winter Indicators

SCIENCE

Diversity and Interdependence of Life

- Explain how almost all kinds of animals' food can be traced back to plants.
- Describe the role of producers in the transfer of energy entering ecosystems as sunlight to chemical energy through photosynthesis.
- Trace the organization of simple food chains and food webs (e.g., producers, herbivores, carnivores, omnivores and decomposers).
- Analyze how all organisms, including humans, cause changes in their ecosystems and how these changes can be beneficial, neutral or detrimental (e.g., beaver ponds, earthworm burrows, grasshoppers eating plants, people planting and cutting trees and people introducing a new species).

Earth Systems

- Investigate ways Earth's renewable resources (e.g., fresh water, air, wildlife and trees) can be maintained.



Spring General Overview

Pre Visit Classroom

- Introduction to Stream Life-Audubon Adventures Kit / Newsletters

Holden Visit

- Investigate a Stream
- Data Collecting
- Analysis Graph
- Food Web

Post Visit Classroom

- Assess what the students have learned activity-Rubric
- Assess the students interests



Spring Indicators

SCIENCE

Diversity and Interdependence of Life

- Explain how almost all kinds of animals' food can be traced back to plants.
- Trace the organization of simple food chains and food webs (e.g., producers, herbivores, carnivores, omnivores and decomposers).
- Summarize that organisms can survive only in ecosystems in which their needs can be met (e.g., food, water, shelter, air, carrying capacity and waste disposal). The world has different ecosystems and distinct ecosystems support the lives of different types of organisms.



Spring Indicators Continue

SCIENCE Continue

Diversity and Interdependence of Life

- Analyze how all organisms, including humans, cause changes in their ecosystems and how these changes can be beneficial, neutral or detrimental (e.g., beaver ponds, earthworm burrows, grasshoppers eating plants, people planting and cutting trees and people introducing a new species).
- Support how an organism's patterns of behavior are related to the nature of that organism's ecosystem, including the kinds and numbers of other organisms present, the availability of food and resources, and the changing physical characteristics of the ecosystem.

Earth Systems

- Investigate ways Earth's renewable resources (e.g., fresh water, air, wildlife and trees) can be maintained.

MATH

Data Collection

- Read, construct and interpret frequency tables, circle graphs and line graphs.



Spring Indicators Continue

MATH

Data Collection

- Modify initial conclusions, propose and justify new interpretations and predictions as additional data are collected.
- Select and use a graph that is appropriate for the type of data to be displayed; e.g., numerical vs. categorical data, discrete vs. continuous data.
- Read and interpret increasingly complex displays of data, such as double bar graphs.
- Determine appropriate data to be collected to answer questions posed by students or teacher, collect and display data, and clearly communicate findings.

