Growing Students in Science: A Community Partnership to Build Interest and Ability in the Sciences

Making the Connection to Ohio Education Standards

Third Grade
Overview Holden Fall Visit: Focus on a Forest Floor

A forest floor is a dynamic ecosystem, filled with specific plants and animals. The third grade fall field trip will focus on this ecosystem highlighting the ground level of the forest including the soil.

Throughout the program the students will follow an interactive map to help them practice their geography skills. Once in the forest the students will sharpen their observation skills, and learn about the life cycles of two forest animals, chipmunks and wood thrushes. The students will also be incorporating classification by sorting animals into general categories such as birds, mammals, etc. Students collect forest samples and take them back to the classroom for a teacher led experiment. In the classroom the students will look closely at the components of soil. They will conduct experiments that will show the components of soils, and allow the students to discover that not all soils are alike.
Earth Sciences
Grade 3

**Topic: Earth’s Resources**
This topic focuses on Earth’s resources. While resources can be living and nonliving, within this strand, the emphasis is on Earth’s nonliving resources, such as water, air, rocks, soil and the energy resources they represent.

Earth’s nonliving resources have specific properties.

Earth’s resources can be used for energy.

Some of Earth’s resources are limited.
Life Sciences
Grade 3

**Topic: Behavior, Growth and Changes**
This topic explores life cycles of organisms and the relationship between the natural environment and an organism’s (physical and behavioral) traits, which affect its ability to survive and reproduce.

Offspring resemble their parents and each other.

Individuals of the same kind differ in their traits and sometimes the differences give individuals an advantage in surviving and reproducing.

Plants and animals have life cycles that are part of their adaptations for survival in their natural environments.
**Topic:** Matter and Forms of Energy

This topic focuses on the relationship between matter and energy. Matter has specific properties and is found in all substances on Earth. Heat is a familiar form of energy that can change the states of matter.

All objects and substances in the natural world are composed of matter.
General Science
Grade 3

Observe and ask questions about the natural environment.

Plan and conduct simple investigations.

Employ simple equipment and tools to gather data and extend the senses.

Use appropriate mathematics with data to construct reasonable explanations.

Communicate about observations, investigations and explanations.

Review and ask questions about the observations and explanations of others.

Fall
English Language Arts
Grade 3

Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.

Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.

Explain how specific aspects of a text’s illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).

Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others’ ideas and expressing their own clearly.
Overview Classroom Winter Visit: Terrific Terrariums

A terrarium is a collection of plants and animals living in an enclosed container. The basic needs of the animal (food, water, air and shelter) and the basic needs of the plant (water, air and sunlight) are fulfilled in the terrarium. A forest terrarium simulates the forest habitat, a place or type of place where a plant or an animal naturally or normally lives or grows.

A group of 4 or more students will build a forest terrarium. The students will learn what is needed to keep their terrarium habitat healthy. The terrarium will be built with a 2 liter bottle, clear tape and various living and nonliving things. Students will place soil, a plant, leaves, branches and pillbugs in their terrarium. They will observe and record any changes in the nonliving and living things over a period of time. At the end of their observation period they will draw conclusions about their forest habitat terrarium.
Topic: Earth’s Resources
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Earth’s nonliving resources have specific properties.

Earth’s resources can be used for energy.

Some of Earth’s resources are limited.
Topic: Behavior, Growth and Changes

This topic explores life cycles of organisms and the relationship between the natural environment and an organism’s (physical and behavioral) traits, which affect its ability to survive and reproduce.

Offspring resemble their parents and each other.

Individuals of the same kind differ in their traits and sometimes the differences give individuals an advantage in surviving and reproducing.

Plants and animals have life cycles that are part of their adaptations for survival in their natural environments.
General Science
Grade 3

Observe and ask questions about the natural environment.

Plan and conduct simple investigations.

Employ simple equipment and tools to gather data and extend the senses.

Use appropriate mathematics with data to construct reasonable explanations.

Communicate about observations, investigations and explanations.

Review and ask questions about the observations and explanations of others.

Winter
English Language Arts
Grade 3

Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others’ ideas and expressing their own clearly.
Overview Spring Holden Visit
Life Cycle of Plants

Through an investigation that begins in the classroom and continues at Holden, students explore the pattern of change that occurs during the life cycle of a plant. As a seed grows from a seedling to a mature plant, then flowers and ripens its fruit, it produces a new crop of seeds. Students observe, measure and record these changes as they grow a variety of plants from seed in the classroom. They explore the structure of a seed, dissect flowers and look inside different fruits to compare the number of seeds each produces. At Holden students discover they can recognize growth stages such as seedling, flowering and fruiting in a diversity of plants. They compare the different length in lifecycles of trees and other plants, and discover these cycles are often dependent on interactions with pollinators. Through their experiences, students build an understanding of a plant life cycle as a predictable sequence of changes that occur as a plant grows from a seed to produce the seeds that starts the next generation.
Topic: Behavior, Growth and Changes

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Use appropriate mathematics with data to construct reasonable explanations.

Communicate about observations, investigations and explanations.

Review and ask questions about the observations and explanations of others.

Spring
Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.

Explain how specific aspects of a text’s illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).

Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

Spring