



# Growing Students and Science

**Making the Connection to  
Ohio's 4<sup>th</sup> grade Ohio Academic  
Content Standards**

# Primary Indicators Program

## Supports

---

### 4<sup>th</sup> Grade Life Sciences

#### **Heredity**

Compare the life cycles of different plants including germination, maturity, reproduction and death.

#### **Diversity and Interdependence of Life**

Relate plant structures to their specific functions (e.g., growth, survival and reproduction).

Classify common plants according to their characteristics (e.g., tree leaves, flowers, seeds, roots, stems).

Observe and explore that fossils provide evidence about plants that lived long ago and the nature of the environment at that time.

Describe how organisms interact with one another in various ways (e.g., many plants depend on animals for carrying pollen or dispersing seeds).

# Fall

## General Overview

---

The focus of the fall program is structure, function and diversity of plants. The program begins with the students identifying the basic structure and function of plant parts including roots, stems, leaves and flowers. Next students learned to classify plants into groups of herbaceous plants, trees or shrubs according to the plant's characteristics. Students search for seeds and classify the seeds according to whether they traveled by animal, wind or plant. After students visited the wildflower garden to learn about fern and horsetail plant fossils. They compared the fossils with the present day plants. Finally the students wrapped up their trip with a proficiency activity, dichotomous key, that classify plants by characteristics.

# Fall Indicators

---

## Science Indicators

Relate plant structures to their specific functions (e.g., growth, survival & reproduction).

Classify common plants according to their characteristics (e.g., tree leaves, lowers, seeds, roots, stems).

Observe and explore that fossils provide evidence about plants that lived long ago and the nature of the environment at that time.

Describe how organisms interact with one another in various ways (e.g., many plants depend on animals for carrying pollen or dispersing seeds).

Analyze a series of events and/or simple daily or seasonal cycles, describe the patterns and infer the next likely occurrence.

# Winter Classroom Visit

## General Overview

---

Students learn about flower structure, function and pollination. In addition students will start their spring unit by planting various seeds. They will record their observations of plant growth over time.

# Winter

## Science Indicators

---

Compare the life cycles of different plants including germination, maturity, reproduction and death.

Relate plant structures to their specific functions  
Classify common plants according to their characteristics.

Describe how organisms interact with one another in various ways.

Record the results and data from an investigation and make a reasonable explanation.

Explain why keeping records of observations and investigations is important

Analyze a series of events and/or simple daily or seasonal cycles, describe the patterns and infer the next likely occurrence.

# Spring

## General Overview

---

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 produce. 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.

# Spring Indicators

---

## **Science Indicators**

Compare the life cycles of different plants including germination, maturity, reproduction and death.

Relate plant structures to their specific functions (e.g., growth, survival & reproduction).

Classify common plants according to their characteristics (e.g., tree leaves, flowers, seeds, roots, stems).

Describe how organisms interact with one another in various ways (e.g., many plants depend on animals for carrying pollen or dispersing seeds).

Analyze a series of events and/or simple daily or seasonal cycles, describe the patterns and infer the next likely occurrence.

# Spring Indicators Continued

---

## Science Indicators Continued

Develop, design and conduct safe, simple investigations or experiments to answer questions.

Explain the importance of keeping conditions the same in an experiment.

Describe how comparisons may not be fair when some conditions are not kept the same between experiments.

Record the results & data from an investigation and make a reasonable explanation.

Explain why keeping records of observations and investigations is important.