



4-H Education Center at Auerfarm

Pollinators

Overview: Students will explore the role of pollinators in a plant's lifecycle. Students will search the farm looking for pollinators at work, both on foot and on the hayride (weather permitting). Students will observe live honey bees in the newly installed observation hive.

Length of Program: 1 hour, 45 minutes- 2 hours

Grade Level: Pre-K; Kindergarten

Preparation Video Link: <https://www.youtube.com/watch?v=o7RopGiY4P4>

CT Science Standards and Expectations:

PK.1-Objects have properties that can be observed and used to describe similarities and differences.

GLE 3: Make comments or express curiosity about observed phenomena (e.g., "I notice that..." or "I wonder if...").

PK.2- Many different kinds of living things inhabit the earth.

GLE 3: Make observations and distinguish between the characteristics of plants and animals.

K.2- Many different kinds of living things inhabit the earth.

GLE 4: Observe and write, speak or draw about similarities and differences between plants and animals.

Next Generation Science Standards:

K-LS1-1. Use observation to describe patterns of what plants and animals (including humans) need to survive.

CT ELDS:

S.48.1 Ask more detailed questions including the relationship between two things or cause and effect relationships.

S.48.3 Cite examples to support their ideas (e.g., "I think the plant will die because when I forgot to water my plant it died.")

S.48.5 Compare and contrast basic features of living things (e.g., body parts and their uses) between and across groups

S.60.4 Give evidence from observations or investigations.

S.60.8 Demonstrate an understanding of how living things grow and change through predictable stages (e.g., birth, growth, reproduction, death)

S.60.9 Provide examples of how animals depend on plants and other animals for food.

Objectives: Students will be prompted to make comments and express curiosity about the role of pollinators in a plant's lifecycle.

Teaching the Lesson:

Outside (~1 hour, 45 minutes- 2 hours)

- Pollinator Search (20 minutes): Students will walk around the farm looking for flowers and pollinators. Encourage students to find the pollen within a flower and think about what fruit might grow from that pollinated flower.
- Observation Hive (10 minutes): Students will observe live honeybees in a hive. The bees move pollen from flower to flower but also collect it to eat and feed their young and queen.
- Pollinator Play (20 minutes): Using wings, students will transform into pollinators and help move pollen from one flower to another.
- Hayride (40 minutes): Students will continue their search for pollinators and help pollinate the farm's fields and orchards using pretend pollen on a paintbrush.
- Barn Visit (20 minutes): Students will visit the barn and learn how pollinators even help the farm animals by pollinating the food they eat.

****Only when weather doesn't allow classes to remain outside for whole visit****

In the Classroom (~45 minutes)

- Circle Time (10 minutes)
 - Pollinators are important to all flowering plants. Bees, butterflies, birds, and even the wind all help plants. They move pollen from one flower to another so that flower can make seeds. Do you remember seeing the apple blossoms outside? Bees and other pollinators need to visit the blossoms so the flowers can turn into apples ready to pick in the fall. Without the pollinators doing their work, we wouldn't have any fruits or vegetables to eat.
 - For PK and K read: [The Reason for a Flower](#) by Ruth Heller.
- Introduce centers. Ask classroom teacher if they would like to rotate or have students self-direct their time.

Centers (30 minutes, ~5 minutes each center if rotating and everything is open)

Sensory: Rice with flowers and plastic pollinators

Puzzles: Flower and plant puzzles will be available for exploration.

Writing: Students will write/draw about the pollinators and flowers

Art: Coffee filter butterflies: students will fold a coffee filter in half and decorate it to create wings for a butterfly. Using a clothespin and chenille stem, a grown-up will help assemble the butterfly.

Snack: If group brings

***Indoor extension:* Pollinator wings in greenhouse or other open indoor space, exploration of beehive materials

Extension Possibilities:

- Pick flowers and bring them into the classroom (even dandelions work!) and encourage students to examine and dissect them.
- Make native wild flower seed ball to help create more habitat for the pollinators. See how here: <https://www.gardeningknowhow.com/special/children/making-seed-balls.htm>.
- Search for pollinators at your school.

- Bees communicate to each other by dancing. In pairs or small groups, have one student hide a flower and tell the group where it is by dancing the directions. Watch real bees dancing here: https://www.youtube.com/watch?v=LU_KD1enR3Q.
- Bees work together to get their job done and each bee has a different task. Some bees care for the young; some gather nectar and pollen, and others clean the hive. What jobs do you have in the classroom? How does your class work together like the bees in a hive?
- The observation hive was installed through a grant from the Whole Kids Foundation. Here is a link to the information that they provide: <https://www.wholekidsfoundation.org/downloads/pdfs/bee-hive-faq-sheet.pdf>.

Materials:

Read Aloud: The Reason for a Flower by Ruth Heller

Books: In the Trees, Honey Bees by Lori Mortensen; Flower Garden by Eve Bunting; What's This? By Caroline Mockford; Grandpa's Garden by Stella Fry and Sheila Moxley; Caterpillars, Bugs, and Butterflies by Mel Boring; From Seed to Plant by Gail Gibbons; The Surprise Garden by Zoe Hall; Other titles focused on pollinators, plant lifecycles, seeds, plants, and vegetables we eat.

Class set of wings

Pollen and brushes for hayride

Rice with flowers and pollinators

Plant and flower puzzles

Craft materials: coffee filters, markers/dotters, clothespins, chenille stems