LiveWell Kids

Garden and Nutrition Program

Lesson 4: Plants From Pollination to Food

5th GRADE

OBJECTIVES

By the end of this lesson, students will:

- Observe the anatomy of a flower and understand how each part contributes to reproduction.
- Identify the main parts of a plant and understand their functions.
- Recognize that people eat a variety of foods that are different parts of plants.
- Understand how pollination, seed development, and seed dispersal are connected stages of a plant's life cycle.
- Understand the importance of pollinators to ecosystems and human food systems.

SUPPLIES

Supplies to bring from home – **PROVIDED BY THE VOLUNTEER**:

- One or more flowers with clearly visible reproductive parts.
  - Examples: lily, tulip
- One or more fruits or seed pods with visible seeds.
  - Examples: tomato, milkweed pod

Store flowers in water or refrigerate prior to lesson to prevent wilting.

- Supplies to bring from the shed:
  - Laminates
    - *The Life Cycle of a Plant*
    - *Anatomy of a Flower*
    - *Flower to Fruit Process*
    - *Plant Parts We Eat*
  - Books:
    - *What is Pollination?*
    - 2 Cafeteria trays
    - Knife
    - Cutting Board
    - Magnifying lenses
    - Tweezers
    - Optional: Whiteboard and dry-erase marker

- Supplies to bring from classroom to garden - *arrange with the teacher ahead of time*:
  - Paper - one piece per student
  - Writing tools such as crayons, colored pencils, markers.

PREPARATION

- Refer to the LiveWell Kids Volunteer Manual on the LiveWell Kids webpage for details about preparing for the lesson one week prior and the day of.
- Because this lesson includes observing pollinators, confirm with the teacher whether any students have insect allergies.

SET-UP INSTRUCTIONS

1. SET UP THE INTRODUCTION AREA:
   - Set out the laminate, *The Life Cycle of a Plant*.

2. SET UP THE GARDEN ACTIVITY:
   - Cut one flower in half lengthwise and place it on a tray.
   - Place any additional whole flowers around the cut flower.
   - Cut the fruit or pod in half and place it on a second tray.
   - Place magnifying lenses, tweezers, and laminates: *Anatomy of a Flower* and *Flower to Fruit Process* next to the trays.

3. SET UP THE NUTRITION ACTIVITY:
   - Set out the laminate: *Parts We Eat*

4. SET UP THE POLLINATION ACTIVITY:
   - Set out the laminate: *Anatomy of a Flower*, and book: *What is Pollination?*

Optional: Use the whiteboard and dry-erase markers to aid you in teaching the topic in any of the activities.

INTRODUCTION & MINDFUL BREATHING *(1 MINUTE)*

- Introduce yourself and any other volunteers.
- Guide students through a brief mindful breathing exercise.
- Explain: “Today we are going to take a deeper look at how flowers become food, how seeds are made and spread, and why pollinators are essential to plants, ecosystems, and people.”

Discussion: Life Cycle of a Plant

Supplies - Laminate: *The Life Cycle of a Plant*

- Review the plant life cycle using the laminate.
- Ask students to describe the stages in order, prompting as needed.
  Allow a few quick responses.
- Explain that flowering plants reproduce sexually, which creates variation in plant traits.
- Explain that variation helps plant populations survive changes such as weather, pests, and disease.
- Connect to prior learning by reminding students that pollination is the key step that allows plants to make seeds.
- Explain that today's lesson focuses on what happens during and after pollination.

****Divide Class into Two Groups****

- Split the students into two groups.
- One group goes to the *Nutrition* activity with the other volunteer.
- The other group goes to the *Garden* activity with you.
- Both activities will run simultaneously. Switch groups after 15 minutes.

GARDEN DISCUSSION & ACTIVITY *(15 MINUTES)*

Discussion: Anatomy of a Flower

Supplies – Laminate: *Anatomy of a Flower*

- Briefly review flower structures students have learned in previous grades:
  - Anther
  - Filament
  - Stigma
  - Style
  - Ovary
- Remind them: the stamen produces pollen, and the pistil contains the ovary.
- Remind them: after pollen lands on the stigma, it grows a tube down the style to reach the ovary.
- Remind them: fertilization occurs when pollen reaches the ovules.
- Remind them: that ovules become seeds after fertilization.

Activity: Looking Inside a Fresh Cut Flower

Supplies – Fresh flower, laminate: *Anatomy of a Flower*

- Use tweezers to gently expose the internal structures of the flower.
- Help students locate the ovary and identify where ovules are found.

- Ask students to consider how the size, shape, and position of flower parts might affect pollination success.
- Students should observe only.
  The flower is fragile.

Discussion: Flower to Fruit

Supplies – Use above supplies plus cut half of fruit/pod, laminate: *Flower to Fruit*

- Compare the flower to the fruit or pod.
- Identify where the ovary was located in the flower and where it appears in the fruit.
- Explain that as seeds develop, the ovary grows and changes shape to protect them.
- Explain that fruits help seeds survive and spread.

NUTRITION DISCUSSION & ACTIVITY *(14 MINUTES)*

Happening at the same time as the Garden activity.

IMPORTANT: Not all plant parts are safe to eat.
Students should only eat plants given to them by a trusted adult.

Discussion: Let's Get Creative!

Supplies - Laminate: *Plant Parts We Eat*

- Begin by asking students to think about what they ate for their last meal or snack.
- Ask students how many of those foods came from plants.
  Allow a few quick responses.
- Explain that humans eat many different parts of plants, sometimes without realizing it.
- Review the main plant parts briefly:
  - Roots
  - Stems
  - Leaves
  - Flowers
  - Fruits
  - Seeds
- Point out that each plant part helps the plant survive and gives our bodies different nutrients.
- Ask students to give examples of foods they eat that come from each plant part.
  Allow several students to share.
- Tell them that some plant parts are eaten mostly for energy, while others are eaten for vitamins, minerals, healthy fats, or protein.
- Let them know that eating a variety of plant parts helps people get a wider range of nutrients.
- Explain that botanically, fruits are plant parts that grow from flowers and contain seeds.

- Ask students to name foods that are often called vegetables but are botanically fruits.
  Allow a few quick responses.
  Examples may include tomatoes, peppers, cucumbers, squash, and avocados.
- Point out that without pollination, many of these foods would not exist.

Activity: Let's Get Creative!

- Tell students they will work in small groups to create a plant-based meal using different plant parts.
- Give the following instructions:
  - Each group must include at least three different plant parts.
  - Groups should try to include variety, not just one type of plant part.
  - Groups should describe their meal using plant parts instead of food names.
- Give an example: "Our meal includes roots, leaves, fruits, and seeds."
- Have groups quietly discuss and plan their meal.
- Invite a few groups to share their descriptions.
- After each share, ask the class to guess the foods being described.
- If time allows, ask students which plant parts were most common across meals and why.
- Say: "We just saw how many parts of plants we eat.
  Next, we'll look more closely at how pollinators help make these foods possible."

Gather Class Together

POLLINATION DISCUSSION & ACTIVITY *(10 MINUTES)*

Pollination

Supplies: Book – *What is Pollination?*

- Explain that pollination is the process that allows flowering plants to reproduce by making seeds.
- Tell them that pollen must move from the anther to the stigma of the same species of plant.
- State that some plants rely on animals to move pollen, while others rely on wind or water.
- Let them know that pollinators are part of larger ecosystems and food systems.
- Introduce the five main insect pollinator groups:
  - Bees
  - Wasps
  - Butterflies and moths
  - Flies
  - Beetles

- Explain that different pollinators are attracted to different flower shapes, colors, scents, and nectar rewards.
- Tell them that many foods people eat depend on pollinators, including fruits, vegetables, nuts, seeds, and oils.
- Point out that changes to pollinator populations can affect food availability and ecosystem health.

Refer to pages 14 – 23 in the book to illustrate the distinct features of each.

Observing Pollination

- Safety Instructions:
  - Observe with eyes only.
  - Move slowly and calmly.
  - Do not touch insects.
- Observation:
  - Walk quietly through the garden.
  - Ask students to observe pollinators visiting flowers and note where they land, how they move, and whether they visit more than one flower.

If pollinators are not present, discuss which plants might rely on wind pollination and how those plants differ from insect-pollinated plants.

CLOSING *(2 MINUTES)*

- Bring students together and recap the key points of the lesson.
- Review Questions:
  - How does pollination help plants reproduce?
  - Why are pollinators important to food systems?
  - Name one way plants help humans survive.
- Key Takeaway: Pollination connects plants, people, and ecosystems.
- If you have time, have students draw/write a "Reflection Page" after the lesson, either in the garden or with the teacher when they return to class. If you see any that you'd like to share with BCHD, take photos of their work and email them to mishell.balzer@bchd.org.
- Thank the students, teacher, and other volunteers before dismissing the class.

***Remember to report your lesson as delivered with either the online form or this QR code.**

From your phone, scan this QR code below to report lessons as delivered. Once the page opens, select the 'grid view'.

From the computer, click the link **LiveWell Kids Tracking Links 2025-26**