



Plant Parts: Flowers and a Pollination

Lesson Description

In this lesson, students review the basic parts of a flower through a dissection activity. They learn about pollination through an interactive demonstration. The lesson concludes with a Tribal Elder discussing traditional uses of flowers and/or pollen from plants that are native to the area.

- Time required: 60 minutes
- Location of lesson: Classroom and garden

Learning Objectives

- Learn the structure and function of flower parts: petals, pollen, pistil and stamen.
- Understand the purpose and process of pollination.
- Identify traditional uses of flowers and/or pollen.

Materials and Preparation

- Invite a Tribal Elder to discuss traditional uses of flowers and/or pollen
- Materials for Flower Dissection Activity:
 - Tulips, lilies or geraniums for dissection, 1 per pair of students
 - Toothpicks, 1 per each pair of students
 - Q-tips, 1 per each pair of students
 - Magnifying glasses, several
- Materials for Pollination Demonstration:
 - Glitter, flour or cornmeal, about ½ cup
 - Paper plates, 1 or 2
-  **Flowers in Bloom**
- Prepared vegetable snack of the week – 1 for each student
- Water to drink during the Class Warm-up – water dispenser in the classroom and 1 cup or a water bottle for each student

Class Warm-up: Champion Cheer and Veggie Taste Test (5-10 minutes)

- Give each student a cup of water or ensure that they have a filled water bottle in front of them.
- Give each student the prepared veggie snack of the day.
- Lead the students in enthusiastically reciting the  **Champion Cheer**.
- At the end of the cheer, drink water and eat the veggie snack together.
- Have students complete their  **Taste Test Observations** about the vegetable snack of the week.

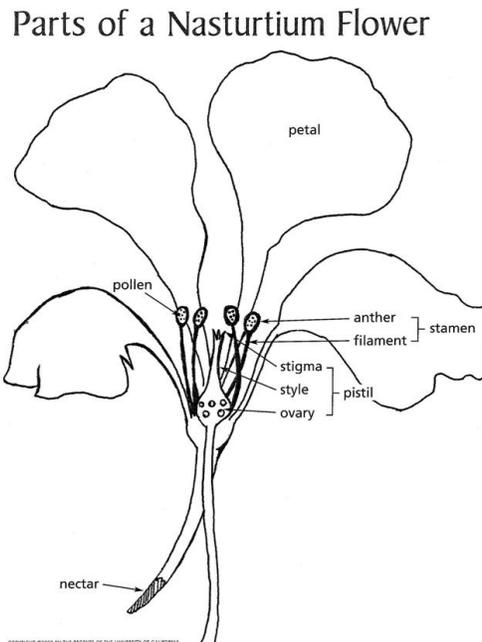
Review of Last Lesson (2-3 minutes)

- Review the evaluation questions from last week's lesson. Evaluation questions from all lessons are listed at the end of the workbook .

Class Discussion (10 minutes)

Have you ever looked really closely at a flower? All flowers have the same basic parts even though they all look unique. Flowers have a very important job in nature. Flower parts make new seeds for the plant. Flowers have male and female parts that use pollen to create new fruits and seeds. Without flowers, there could be no seeds or fruits. How would life change if there were no more flowers?

Today, we are going to review the 4 basic parts of a flower: **petals, pistil, stamen and pollen**. Draw this diagram on the board and point out the 4 basic parts.



We are also going to talk a lot about **pollination**. Did you know that flowers choose mates to reproduce just like animals? But flowers cannot move around; how does the pollen from one flower travel to the pistil of another flower? Pollinators help spread pollen. Some examples are birds, bats, bees, insects, the wind and water.

How does a honeybee pollinate a flower? Bees are attracted to the nectar in flowers. Nectar is food for honeybees. When they are inside a flower eating nectar, they rub against the pollen in the flower and some pollen gets stuck to them. When they visit a different flower to eat more nectar, some of the pollen gets spread to the pistil of the second flower. Once the pollen fertilizes the egg in the flower, the plant will produce fruit and seeds. Honeybees are a very important pollinator. We have pollinators to thank for most of our fruits, nuts and many vegetables, too.

Today, we will dissect a flower and then act out the process of pollination.

Activities (40 minutes)

-  **“Flower Dissection” (15 minutes):** Students dissect flowers to observe the petals, pollen, stamen, pistil.
 1. Refer students to the workbook page,  **Flowers in Bloom.**
 2. Divide students into pairs and hand out 1 flower to each pair of students.
 3. Have students draw a careful, detailed picture of the flower in their workbook.
 4. Hand out a toothpick and Q-tip to each pair of students. Pass out magnifying glasses if available.
 5. Have students look carefully at the flower and complete question # 1 in their workbooks. (What observations did you make while exploring the flower?)
 6. Model the dissection of the flower in front of the class as students follow along. Slowly remove each flower part and discuss:
 - a. *What part of the flower is this? How can I best describe it? What does it look like? What might be its purpose? How does it help the plant? What part of the flower is it according to our diagram?*
 - i. **Stamen** is the male part of a flower that provides pollen
 - ii. **Pistil** is the female part of a flower that receives pollen
 - iii. **Petals** attract pollinators with colors, shapes, scents
 - iv. **Pollen** travels from one flower to another to make new seeds and fruits.
 7. Pay special attention to the small depressions at the base of the petals that are filled with a sugary solution called nectar.
 - a. *What sort of pollinator might be interested in the nectar? (Bees)*
 - b. *Nectar is food for bees.*
- **“Pollination Demonstration” (10 minutes):** Using glitter or flour as “pollen”, “pollinators” give “flowers” high-fives to demonstrate pollination. Indoor or Outdoor activity.
 1. Select 4-5 student volunteers to be “flowers”. Select 1-2 student volunteers to be “pollinators.”
 2. Spread a thin layer of glitter or flour to represent “pollen” on a paper plate. Have each flower lightly press the palm of their hand into the “pollen”.
 3. Ask each flower to “plant” him or herself in different areas around the room or outside space.
 4. The pollinators will “fly” around giving high fives to each of the flowers.
 5. Ask all flowers and pollinators to hold up their palms to show the class that they are covered in a mix of each other’s pollens.
 6. Discuss:

- a. *What helps flowers move their pollen?* (pollinators)
 - b. *Why is it important that pollen gets moved from one flower to another?*
 - c. *What is “pollination”?*
 - d. *What would happen if a pollinator became extinct?*
 - e. *What is the purpose of a flower?*
- **“Elder Discussion” (15 minutes):** Students listen to a Tribal Elder speak about traditional uses of flowers and/or pollen from plants.
 1. Encourage the Elder to speak about flowers that are native to the area. If possible, take the students out for a brief hike to observe flowers.

Evaluation Questions (5 minutes)

1. *How do flowers attract pollinators?* (Answer: with their petals: Bright colors, sweet smell, etc.)
2. *What do flowers do for the plant; what is their purpose?* (Answer: they make seeds)
3. *What is the stamen?* (Answer: the male part of the plant)
4. *What is the pistil?* (Answer: the female part of the plant)
5. *What does pollen do?* (Answer: helps create new seeds and fruits by traveling from one flower to another on a pollinator)
6. *How much water should you drink every day?* (Answer: at least 6 cups of water a day)
7. *How many fruits and vegetables should you eat every day?* (Answer: at least 5 fruits and vegetables a day)
8. *Does gardening connect you to your culture and help you learn new words in your language?* (Answer: yes)

Preparation for Future Lessons – Reminder for the Instructor

- Review the materials and preparation needed for the next lesson.
- Remember that an Elder guest instructor is needed for these Spring lessons: lesson 1 (Eating a Rainbow), lesson 4 (Conserving Water: A Renewable Resource), and lesson 9 (Plant Parts: Flowers and Pollination).

Notes
