

Pollination Pizzazz

Standards of Learning

Science 4.4

Objective

Students will:

- Discuss the role of bees in the pollination process

Materials

- How Groundhog's Garden Grew, by Lynne Cherry
- Construction paper
- Paper plates
- Colored sand
- Scissors
- Glue
- Large cotton balls
- Crayons/markers
- Spray bottle of water

Background Knowledge

This lesson is designed to show the role of bees in the pollination process and provides students with a visual representation of this event. Pollination is the transfer of pollen from the male flower part to the female flower part. The male part is called the anther and contains the pollen grains. The female part is called the pistil and contains the stigma, which is sticky to collect the pollen grains. Pollination must occur in order for flowering plants to reproduce. Pollen grains can be transferred by wind, water, bees, butterflies, other insects, birds, and bats. Bees are attracted to fragrant flowers and the nectar and pollen in these flowers. The bee stops at a flower to suck the nectar and the pollen grains get stuck to the bee's body. Then, when the bee moves to another flower, the pollen grains are transferred from the first flower to the second. The second flower is then pollinated.

Prior to beginning this lesson, you should use construction paper and paper plates to design flowers by attaching paper petals to the plates. Fill the center of each flower with a different color of sand. Make at least three flowers with different colors of sand. While the pollen of each flower will be a different color, all the flowers should be the same because pollen from one flower species will not pollinate another flower species.

Procedure

1. Read How Groundhog's Garden Grew to the students. Pause on the pages that discuss pollination and discuss as a class.
2. Ask the students the following questions:
 - What is pollination?
 - Why is pollination such an important process?
3. Tell the students that bees are one of the ways pollen is transferred from one flower to another. Other ways include flies, butterflies, and wind.



4. Tell the students that when bees stop at a flower to suck the nectar, the pollen grains get stuck to the bee's body. Then, when the bee moves to another flower, the pollen grains are transferred from the first flower to the second.
5. Tell the students that they will be making their own bees today.
6. Put out the construction paper, glue, and scissors for students to design their bees.
7. As students are working, set up your constructed flowers on a front table or on the floor.
8. After the students have completed their bees, hand out one large cotton ball to each student and tell them to glue it to the bottom of their bee.
9. As the students take turns coming forward to do the activity, spray a small amount of water to the attached cotton balls.
10. Tell the students to land their bee on one flower to collect the "pollen", then land on a second flower, and finally land on a third.
11. As the bee lands, point out to the students how the colored pollen from the first flower is transferred to the second and then those two colors are transferred to the third flower.
12. Tell the students that this is a representation of how a bee transfers pollen from one flower to the next, which pollinates the flowers.
13. Ask students what they think would happen if the bee population suddenly dropped.

Extension

Discuss how bees often face a negative reputation. Challenge students to change this public perception by creating posters, which advertise the positive role bees play in pollination (thus allowing fruits and vegetables to grow).

References

Massachusetts Agriculture in the Classroom. (Spring 2004). Pollination. *The Newsletter of Massachusetts Agriculture in the Classroom*, p. 3-6.

National Honey Board. (2001). *The Honey Flies: A Bee's Life*. Colorado: National Honey Board.

