

Pollination Fun

Length of Lesson: 50 minutes

Materials

- clear film canisters (1 per student)
- 1 permanent marker
- 8 white flowers (using flower pattern)
- 8 yellow flowers (using flower pattern)
- scissors
- 16 Styrofoam cups
- clear tape
- paper towels
- 1 sandwich bag of flour
- container of water
- food coloring
- magnifying glasses (1 per pair)
- pipettes, cut so total length is 6 cm (1 per student)
- black pipe cleaners (½ per group)
- science journals

Prepare in Advance

Mark the film canisters with a black mark halfway up the canister.

Make 16 copies of the flower pattern. Color 8 yellow (or copy on yellow paper) and keep 8 white. Cut out the middle of each and along the lines. Slide them each over a Styrofoam cup. Tape into place.

Using a paper towel, wipe some flour on the insides of the 8 white flowers' cups near the top. Put a small amount of water and a couple of drops of food coloring in each of the 16 cups.

Procedure

1. Put the students in pairs. "Remove one of your shoes and give it to your neighbor."
2. Pass out the magnifying glasses. "Look at the bottom of your partner's shoe. They have carried with them different things that got trapped in the bottom of their shoe. What did you find?" Discuss where the soil, gum, etc. came from.
3. "Eventually the dirt and gum and rocks from the bottom of our shoes will fall to the ground. We have carried various things from our shoes to somewhere else. Animals also do this. Sometimes a seed will get caught in an animal's fur and fall off it somewhere else. Insects can do this too."
4. "Today we will be flowers and honeybees. What sounds do bees make? (bzzzz sounds) Bees sip nectar from flowers."
5. Pick half of the class to start out as flowers. "As flowers, you will stand still, holding the cup with both hands. You want to attract as many bees as you can to take nectar from your flower (the cup). You cannot talk, but you can try to get other students' attention with facial expressions."
6. "The bees will be collecting nectar to make honey. There are different flowers around the room containing nectar (hold one up to show them). You need to go to the different flowers and take some nectar from the flowers. You will use your pipette to take some nectar from the flower. You then put the nectar in your film canister. You should go to different flowers."

Once you fill the film canister to the line, go sit down.”

7. Once all of the bees are sitting, have them trade jobs with the flowers. Play until everyone has enough nectar. (You may need to refill the cups with colored water.)
8. “Bees, butterflies, flies, and other insects are **pollinators**. They help to pollinate flowers.”
9. “They visit flowers to sip the liquid called **nectar** inside of the flower. Often while they are doing this, sticky **pollen** also found in the flower sticks to their bodies and comes off in the other flowers they visit.”
10. “The pollen from the first flower will be placed on another flower and may fertilize that flower, producing new seeds, which produce new plants.” (Male flowers have pollen; female flowers do not.)
11. “The white flowers you visited had pollen in them; the yellow flowers did not.” Show them that the white flowers had pollen in them by swabbing the inside of the cup with a black pipe cleaner. “Does anyone think we might have pollinated the yellow flowers?”
12. Gather all of the yellow flower cups. Repeat that no pollen was put in these cups. Swab each yellow flower cup to see if it was pollinated. “Can someone explain how we pollinated these cups?” (Pollen was on our hands from getting nectar out of the white flower cups and we then put our hands in the yellow flower cups.)
13. “Can someone else explain how this is similar to what happens when bees visit real flowers?” (When bees are sipping nectar from flowers, pollen sometimes sticks to them. Then it is deposited into another flower.)”

Journal Writing Using Bloom’s Taxonomy

- Knowledge: Tell how bees pollinate flowers.
- Comprehension: Explain what pollination means.
- Application: Draw four pictures showing a bee pollinating a flower.
- Analysis: Explain how bees benefit from the flowers. Explain how flowers benefit from the bees.
- Creative Thinking: Tell what would happen if there were no bees or other pollinators.
- Critical Thinking: Convince someone that bees are important to gardens.

