



You are the Pollinator!

Plants and animals depend upon each other for survival in the environment. In this lesson, students will take the role of a pollinator to help them see how pollination works and how most plant species are dependent on pollinators to complete their life cycle.

Next Generation Science Standards: 2-LS2-2

Materials

small paper sack, one per student

flower illustration to cut out

small bag of cheese curls NOTE: You will use the orange powder from the cheese curls to represent a type of pollen. There are three ways you can do so. 1) You can pour out any loose powder from the bag and use it. 2) You can crush a few of the cheese curls and use that powder. 3) You can leave the cheese curls whole and use several of them in each bag instead of measuring out a teaspoon per bag.

small container with powdered sugar

teaspoon measuring spoons (two per group)

spray bottle with water

What You Should Know

Not all plants require pollinators. Some of them are self-pollinating. Some use water, wind, rain and/or gravity to assist pollination. Most plants do require pollinators, though, and this activity will help young students visualize the process.

Procedure

1. Watch some of the pollinator videos (bumble bee, carpenter bee, monarch, native bee, pollinators) at

<https://www2.illinois.gov/dnr/education/Pages/podcasts.aspx#Pod13> or on YouTube (Illinois Department of Natural Resources Division of Education). Ask the students what they think the animals are doing at the flowers. Have them explain their answers.

Illinois Pollinators Trunk



2. Explain that the animals are pollinators. They visit flowers to collect nectar (food) for themselves. Some of them also collect nectar and pollen to feed their young. Pollen is a powdery substance that can fall on any of these animals and stay on them, especially if they are hairy insects. When they move to a different flower, the pollen can fall off. If the pollen falls off on the same type of flower as where it was picked up, and if it falls in the correct place, the second flower can be pollinated. Pollination results in a new embryo plant for that species.
3. Tell the students that they are going to try to duplicate being a bee pollinator. To do that, they will need a flower. Give them the flower illustration to color. They can color the flower petals any color that they want. Leave the center blank.
4. Students (or adults, as appropriate) should cut around the outside edge of the flower petals. They should also cut on the dotted lines in the center of the flower illustration while leaving the petals entire. The four sections remaining from the center cuts stay attached to the flower.
5. Each student should receive a small paper bag. Place the flower-petal paper over the opening of the bag. Push the four pieces in the center of the flower down so that they touch the sides of the bag. They will help hold the flower in position over the bag. You can tape them to the sides if you want. The center of the flower should now have an open bag below it.
6. Work in small groups for this activity. Provide two small bowls to each group. One bowl contains cheese curl crumbs (orange powder) while the other contains powdered sugar. Be sure to inquire as to any possible allergies before using these items. Other items can be substituted in the activity, but they should have distinctive colors and stick to the hand. One person in the group should put a teaspoon of cheese curl crumbs into half of the bags at the table and a teaspoon of powdered sugar into the other half of the bags. Alternate the bags around the table.



7. One hand from each student will represent a bee. Spray a light mist of water on the fingertips of one hand of each student. The water will help the “pollen” grains attach.

8. Slowly, have each student place his/her hand in one of the bags so that the hand touches the “pollen.” Remove the hand from the bag. What does the student see? Have the students in the group rotate to the next bag and repeat the action. Is there any difference this time? Continue the process around the table until the student is back at the beginning flower. NOTE: Students should not eat the cheese curl crumbs or powdered sugar that sticks to his/her hand.

9. Talk with the students about what this activity means. The “pollen” they moved with their “bee” was helping the flowers to complete its life cycle. Without this successful transfer of pollen, the flower would not be able to produce seeds. Without seeds, the plant would be unable to replace itself and grow in new areas. Without more plants and flowers, the bee populations will decline as well.

10. Optional: Take the students to a garden where pollinators are at work. Have them stand quietly and watch. Avoid wearing perfume or taking sugary drinks along. Go back to the classroom and discuss what they have seen. How was the activity that they participated in like what they saw in the garden? How was it different?

Evaluation

1. Have the students discuss the following points.

a. What did the cheese curl crumbs and powdered sugar represent?

b. You used water to make the “pollen” stick so that it could be moved. Bees and other pollinators don't do that. What makes the pollen stick to them?

c. Why does pollen need to be moved?

d. What happens if pollen isn't successfully moved?

e. Why would bees be affected if there was no pollen?

