Flower Power Part Two

Description

Students role play flowers and pollinators and try to find their perfect match!

Objective

To learn about pollinators and their relationship to flowers.

Teacher Background

Nature has provided various ways for pollen to reach the stigma in flowering plants. Some flowers are wind-pollinated and have very light pollen grains that are blown from plant to plant in fine clouds. Other plants have male and female parts that develop at different times. Insect-pollinated plants produce nectar that many insects collect for food. As the insect enters the flower to get the nectar, part of the insect is dusted with pollen. When the insect enters the next flower some of the pollen brushes off onto the stigma. Some flowers produce smells that attract insects while others have colors that are attractive to insects. By impersonating flowers and pollinators, students learn that there is a great variety of pollinators and that each has a special relationship to certain kinds of flowers.

Materials

Pins to attach tags to students
Construction paper
Marking pens

Unlike animals, plants can't move from place to place to find their mates. How then does the pollen from one flower get to the pistil, or female part, of another flower?

That's where pollinators come in. A pollinator is anything that helps spread flower pollen. There are all kinds of pollinators: birds, bats, bees, bugs, and more! Even the wind is an important pollinator. Pollinators may drink nectar from the flowers, and some, such as honey bees, collect and eat the pollen, too. In the process they spread pollen from flower to flower without even trying. Once the pollen fertilizes the egg in the flower ovary, the plant will go on to produce fruit and seeds. So we have pollinators to thank for all our fruits and nuts and lots of our vegetables, too.

1. Write the following list on the board:

Pollinator	*Type of Flower Preferred*
Beetle	White or dull-colored, fruity or spicy fragrance
Honey bee	Showy, bright petals, often blue or yellow
Mosquito	Small flower, often white or green
Butterfly	Red, orange, blue, or yellow flowers
Bat	Large flower with fruity fragrance and lots of nectar
Hummingbird	Red flower, little or no fragrance
Moth	White or yellow flowers with heavy fragrance
Wind	Small, odorless, colorless flowers

Grasses, corn, and so on tend to be wind pollinated. Since they rely on the wind, they don't have to produce showy or scented flowers to attract pollinators.

2. Divide the class into two groups. One group will be Pollinators, the other Flowers.
3. Assign each member of the flower group to a flower type.
4. Have members of the flower group write on construction paper a short description of what type of flower they are (bright red, no scent; white, very sweet-smelling) and pin the descriptions to their shirts.
5. Now take the pollinator group aside and whisper an identity (honey bee, wind, bat) to each member.
6. Then have the two groups mingle silently. Have each pollinator refer to the list on the chalkboard in order to find his or her right flower. Remind the class that there can be more than one pollinator to a flower because different pollinators may like the same type.

7. Since the pollinators have no identifying tags, have each flower guess in turn the identity of his or her pollinator ("I'm a bright red flower, so you're probably a hummingbird.")
8. Now go outdoors and have the pollinators find a *real* flower they like! Then ask the flowers to look around the garden for their *real* pollinators. Can they find any bees, hummingbirds, beetles, or wind?

When you look at insects near flowers now, what will you try to observe?

Most scientists believe that flowers and their pollinators *coevolved*. That means that they changed over time to suit each other; they *adapted* to each other. How does this coevolution benefit the flower? How does it benefit the pollinator? During this activity you learned that often several pollinators like the same flower. For example, bees and butterflies often visit the same type of flower. How would more than one pollinator be an advantage for the flower?

Go outdoors with students and sit quietly near some flowers. Watch carefully. What pollinators do you observe? How long does a pollinator stay on each flower?