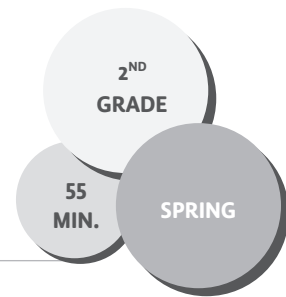


Be a Bee!

THEME: EXPLORING THE ECOLOGY OF FOOD



ESSENTIAL QUESTION

How do living creatures play a role in the food we eat?

LEARNING OBJECTIVE

✓ Students will be able to dramatize the process of pollination.

LESSON DESCRIPTION

In this lesson, students act out a pollination role-play to understand the important role of pollinators in our food supply.

MATERIALS

- 2 stems of local spring flowers
- *UnBEElievables* by Douglas Florian
- 1 sliced or prepared small piece of fruit for each student (e.g., a pineapple chunk, pear slice, or berry)
- Poster board or other thick, large paper to make costumes
- Markers, crayons, and colored pencils
- Cotton balls
- Masking tape
- Optional:**
- Yarn or string
- Hole puncher
- Library books with colorful pictures of flowers and/or insect wings

PREPARATION

- › Identify a wide-open space where you can play this game, such as outdoors or in a multipurpose room.
- › Cut a set of blank wings out of poster board for half your students.
- › Cut a set of blank flowers out of poster board for the other half of your students.
- › Make your own set of wings and a flower as models for students. Affix a cotton ball with tape onto the center of the flower.

ACTION STEPS

1. Engage: Gather students in a circle, and pass around flowers for students to smell and admire. Ask students, *Why do you think flowers are so beautiful and smell so good?* Field answers, coming around to the idea that flowers have adapted to be attractive and enticing to pollinators. Explain, *Pollinators are insects, birds, and other animals that move pollen among flowers, which allows the plants to produce fruits, seeds and, eventually, new baby plants!* Ask students to name the pollinators they know of (honeybee, hummingbird, bat, beetle, moth, fly). **(5 min.)**

2. Reading: Read a book about pollinators and their impact on our food supply, such as Douglas Florian's *UnBEElievables*. If you are short on time, you may choose not to read all the poems

about bees' different roles, but focus on "Bee Anatomy," "Waggle Dance," "Honey," "Pollen," "Bees Buzz," and "Where are the Bees?" After reading, ask, *How do we depend on bees and other pollinators for what we eat?* Explain to students that in some places we don't see bees as much as we used to. Ask, *What would the world be like without bees?* **(10 min.)**

3. Drawing: Explain, *We're going to play a pollination game, and we need to create our costumes. Half the class will be pollinators and create wings, and half the class will be flowers that turn into fruits with seeds after they're pollinated.* Show students your models, asking them to guess what the cotton balls are for. Explain that if they have a flower, they'll also be drawing a fruit on the back. Pass out art supplies to students and circulate through the room, helping where needed. If you brought in books with photos of flowers or wings, put them in a corner "library" where students can go for inspiration. Help students making flowers attach "pollen" cotton balls with tape. If you have time, you may want to use a hole puncher to attach yarn so students can wear their wings and flowers, rather than hold them. Give students a three-minute warning before it's time to clean up. **(15 min.)**

4. Clean up! (5 min.)

5. Pollination Game: Gather students and bring up two volunteer flowers and one volunteer pollinator to help you demonstrate the game. Say, *When a flower is tagged by a bee, the flower hands over its pollen.* Demonstrate. Now, *let's say a bee is already carrying pollen from a flower. When the bee tags a new flower, it passes the pollen to the new flower,*

and ta-da! Pollination has occurred! The flower now turns into a fruit, and you flip your costume to show the fruit side. Demonstrate. *Once all our flowers have been pollinated and turned into fruit, the game is over.* Ask questions to check for understanding and then play. **(10 min.)**

6. Tasting: Pass out a piece of fruit to each student, emphasizing that this is the result of pollinating all the flowers. Say something like, *Thank you, bees, moths, and bats, for helping plants make this tasty fruit!* **(5 min.)**

REFLECTION

Have students discuss the following questions in small groups, then share with the class: **(5 min.)**

- *How would you explain pollination to a friend or family member?*
- *How does a bee or other pollinator help create our food?*
- *How did it feel to pretend to be a pollinator or flower?*
- *What are ways that we can help bees in our community?*

ADAPTATIONS

In the Classroom: If you are playing this game in a classroom, set parameters to minimize running and maximize safety. In this case, you can say that the flowers are rooted in the ground and can't move, and the pollinators are bees that buzz as they walk but cannot run.

Musical: Add music and dance to the pollination game! Have the pollinators and flowers dance to and from each other. You can even

pause the music sometimes, and make it a freeze-dance game.

Garden Setting: Have students observe bees and other pollinators in the garden, and write poems based on their observations.

ACADEMIC CONNECTIONS

Next Generation Science Standards, Life Science Disciplinary Core Idea

NGSS 2.LS2.A

Interdependent Relationships in Ecosystems
Plants depend on animals for pollination or to move their seeds around.

English Language Arts Common Core State Standards

CCSS.ELA-LITERACY.RL.2.6

Identify the main purpose of a text, including what the author wants to answer, explain, or describe.

CCSS.ELA-LITERACY.RL.2.4

Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.

