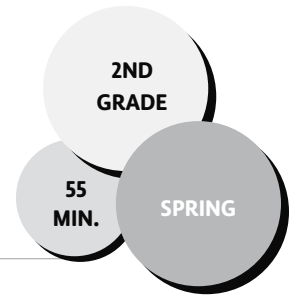


Be a Bee!

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.

CONCEPTS

attract flower fruit
nectar pollen pollination

ENGAGING THE CLASSROOM TEACHER

- Prior to the lesson, discuss whether you'll be leading the lesson indoors or outdoors.
- Ask the teacher what prior knowledge students might have about pollination.
- During Action Step 3, suggest that the teacher help students attach yarn or string to their flower and bee necklaces with a hole puncher.
- During Action Step 4, suggest that the teacher support students while dissecting plants.

LESSON DESCRIPTION

In this lesson, students act out a pollination role-play to understand the important role of pollinators in our food supply. This lesson is designed to be taught in conjunction with the lesson Planting for Beneficial Insects.

MATERIALS

- 2 stems of local spring flowers
- *The Thing About Bees: A Love Letter* by Shabazz Larkin
- 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 flower and bee necklaces
- Markers, crayons, and colored pencils
- Fruit and Vegetable Sorting Cards (p. 216–219)
- Cotton balls
- Masking tape
- How Pollination Happens Poster (p. 268)
- Bee and Flower Coloring Pages (pp. 269–270)

Optional:

- Yarn or string
- Hole puncher
- 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.
- › Photocopy a Bee Coloring Page for half your students.

- › Photocopy a Flower Coloring Page for the other half of your students.
- › Photocopy and cut out an assortment of fruit cards from the Fruit and Vegetable sorting cards for “flower” students to choose from.
- › Color your own set of wings and a flower as models for students. Use a hole puncher and yarn to turn the pictures into necklaces for the pollination game. Affix a cotton ball with tape onto the center of the flower.
- › Determine how to display How Pollination Happens Poster (i.e., print a color copy to display on a document camera, or recreate your own on chart paper).

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. Say, *They also make a delicious sugary food that bees like—do you know what it is?* (Nectar!) 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: Watch a video or read a book about pollinators and their impact on our food supply, such as Shabazz Larkin’s, *The Thing About 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.)**

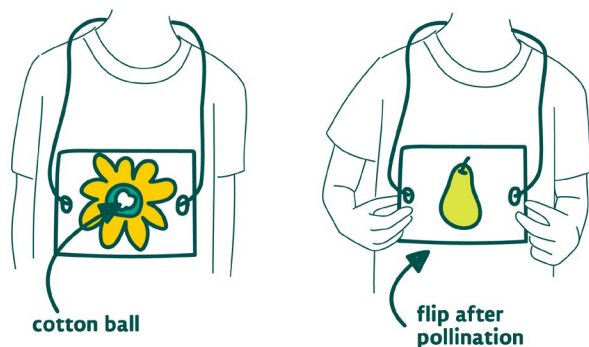
3. Drawing: Explain, *We’re going to play a pollination game, and we need to create our costumes. Half the class will be pollinators and have bee necklaces, and half the class will be flowers that turn into fruits with seeds after they’re pollinated.* Show students your models, asking them to guess what the cotton balls are for. Explain that if they have a flower necklace, they’ll also be drawing (or pasting) 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 and bees, put them in a corner “library” where students can go for inspiration. Help students who are 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: Display the How Pollination Happens Poster. Gather students and bring up two volunteer flowers and one volunteer pollinator to help you demonstrate the game. Ask, *Who do you think gets to tag, the bees or the flowers?* (Bees!) Discuss how that’s because the flower has something the bee wants, food! Say, *When a bee tags a flower, the flower hands over its pollen.* Demonstrate. *Now, let’s say a bee is already carrying pollen from a different flower. When the bee tags a new flower, gesturing to your second flower volunteer, it passes the pollen to the new flower, and ta-da! Pollination has*

occurred! Have students repeat the word dramatically, “pollination!” 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. After one or two rounds, give students opportunities to act out scenarios such as, What would happen if there were only a couple bees to pollinate? What would happen if there were no flowers? If students seem to be understanding, you can add an element where certain bees go back to other bees and do the “waggle dance” to let them know where there’s food (or flowers).

(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.)**

Social and emotional learning

- *How did it feel to pretend to be a pollinator*

or flower?

- *What are ways that we can help bees in our community?*

Check for understanding

- *How would you explain pollination to a friend or family member?*
- *How does a bee or other pollinator help create our food?*
- *What could we do to bring more pollinators to our garden?*
- *How can we provide food for those that are already here?*

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.

Honey Tasting: Show students a video of how bees make honey—they might be tickled to learn it involves regurgitation! Then have a tasting of local honey, if it’s available.

Age: Older students might enjoy creating a comic strip to demonstrate their understanding of the steps in pollination.

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

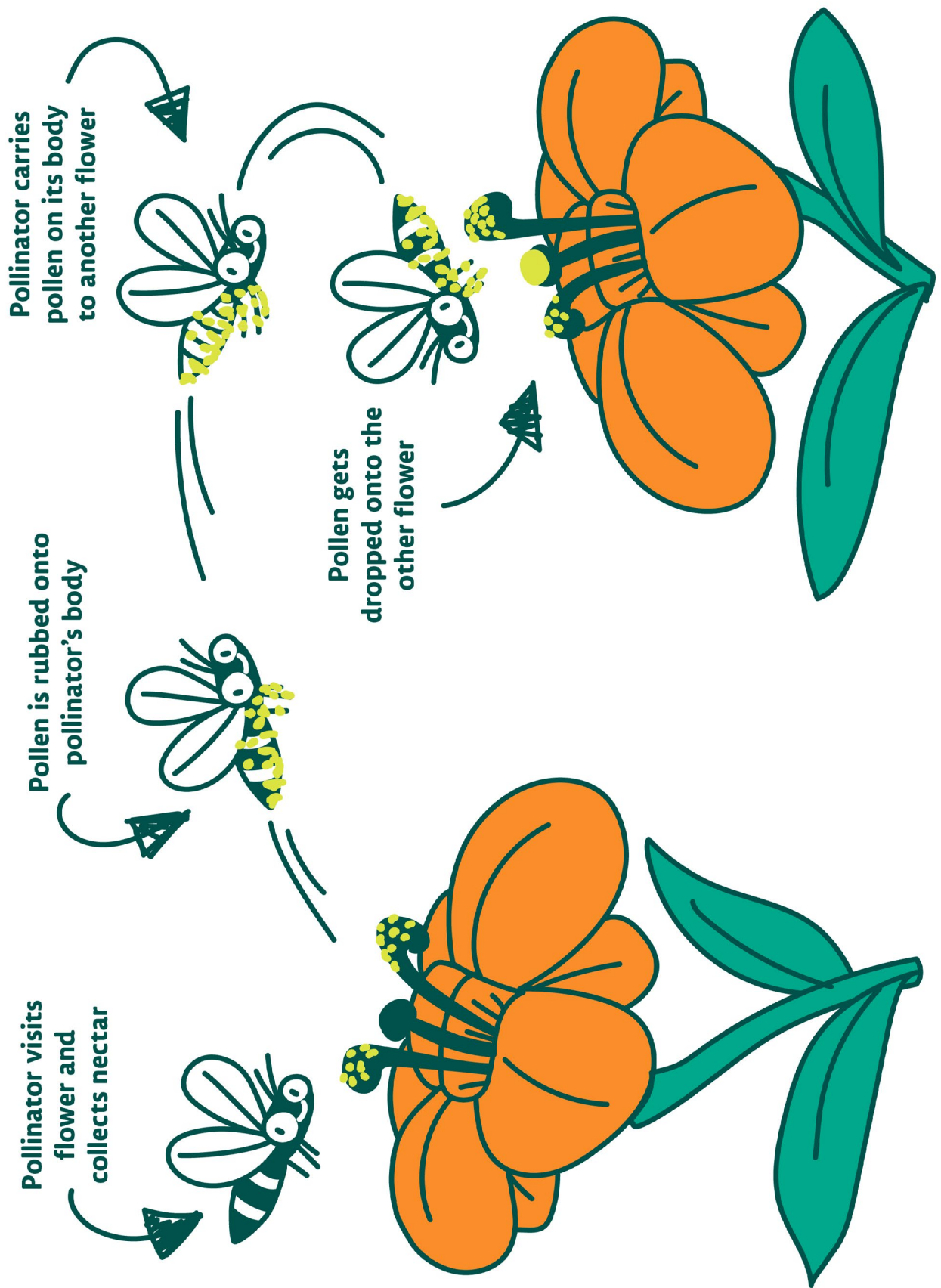
CCSS.ELA-LITERACY.RL.2.6

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

CCSS.ELA-LITERACY.RL.2.4

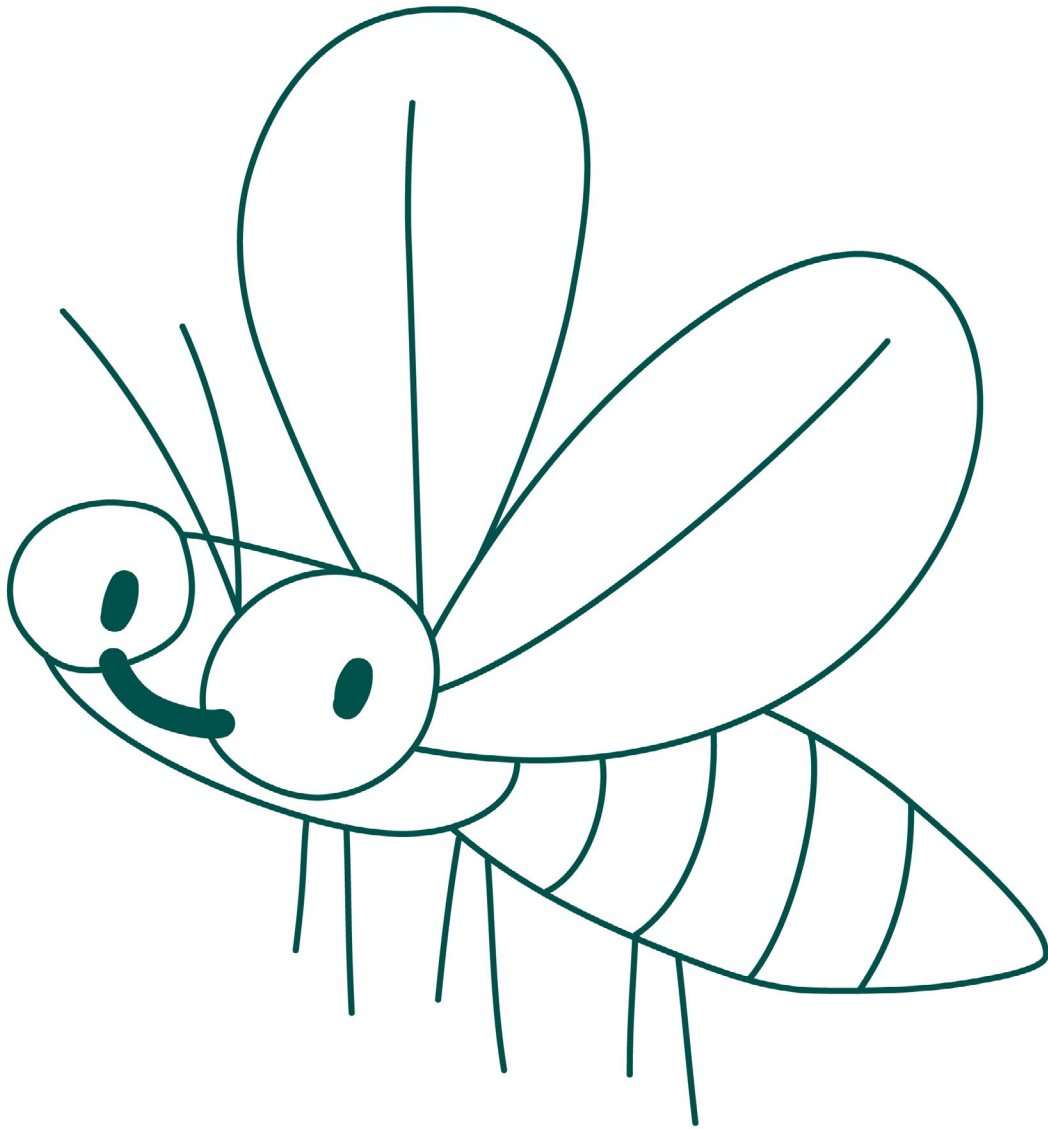
Describe how words and phrases (e.g., regular
beats, alliteration, rhymes, repeated lines) supply
rhythm and meaning in a story, poem, or song.

How Pollination Happens Poster



Name: _____ Date: _____

Bee Coloring Page



Name: _____ Date: _____

Flower Coloring Page

