



4 APIARY

BIG IDEA: Bees have unique ways of communicating.

OBJECTIVE: *Students will learn how bees live and cooperate in their hive.*

This lesson is adapted from the FoodPrints Curriculum. To learn more about the FoodPrints program and access the full curriculum, including instructional videos, visit freshfarm.org/foodprints.

VOCABULARY

- **APIARY** a place where bees are kept in beehives
- **HIVE** a dome-shaped or boxlike structure that houses bees
- **HONEYCOMB** a group of hexagonal wax cells built by honeybees to store honey
- **QUEEN** the single reproductive female in a hive; the mother of all worker bees
- **DRONE** male honeybee who leaves the hive daily to mate with the queen
- **WORKER BEE** female bees with many different jobs in the hive, including cleaning the cells, making wax, caring for the queen and leaving the hive to search for nectar

MATERIALS

- Bee Anatomy Diagram (attached)

ENGAGE: *The engage section is designed to activate students' prior knowledge and experiences, pique their interest, and build curiosity.*

Ask students to quietly observe the seven hives in the apiary and share with a partner what they see.

They will notice bees flying in and out of boxes that have the hives where the bees live. It may look like they are just flying around but there are as many bees in these hives as in a small city and they need to be well-organized!

Explain that inside the hive the bees have built an amazing structure called a honeycomb where they make and store honey. Take time to briefly introduce the three types of bees described in the vocabulary section.

In addition to making delicious honey, these bees are great pollinators and are therefore essential to our growing much of our food. The attached diagram of a bee shows the different parts of its body – there are pollen baskets on the hind legs which are used to carry pollen back to the hive.

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EXPLORE: These hands-on and minds-on investigations offer an opportunity for students to further explore the Big Idea of the lesson.

INVESTIGATION 1:

BEE COMMUNICATION. Within their large bustling city, bees are always communicating. They share precise information about where to find flowers, some of which are only available for a short period of time.

When bees return to the hive fully satiated, they do one of two dances.

- If the flowers are close by, the bee dances in a circle around the hive to encourage bees to search for nearby flowers.

Let's practice by dancing in a circle.

- For flowers that are further away, the bees do a wag-tail dance meaning they wag their tails in the direction of the sun.

Let's try and see if you can communicate the location of a flower source.

Without using words, try to communicate to your partner the location of the best nectar. You can run in a circle, do a wag-tail dance, or use other gestures. Then switch roles and see if you can find the delicious food source.

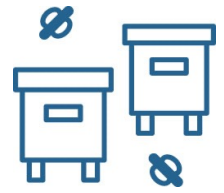
INVESTIGATION 2:

TASTING HONEY. During the summer months, you can taste the honey being produced in the hives. An adult can use the spout on one of the hives to fill a container with honey and share it. You may want to compare it with store bought honey.

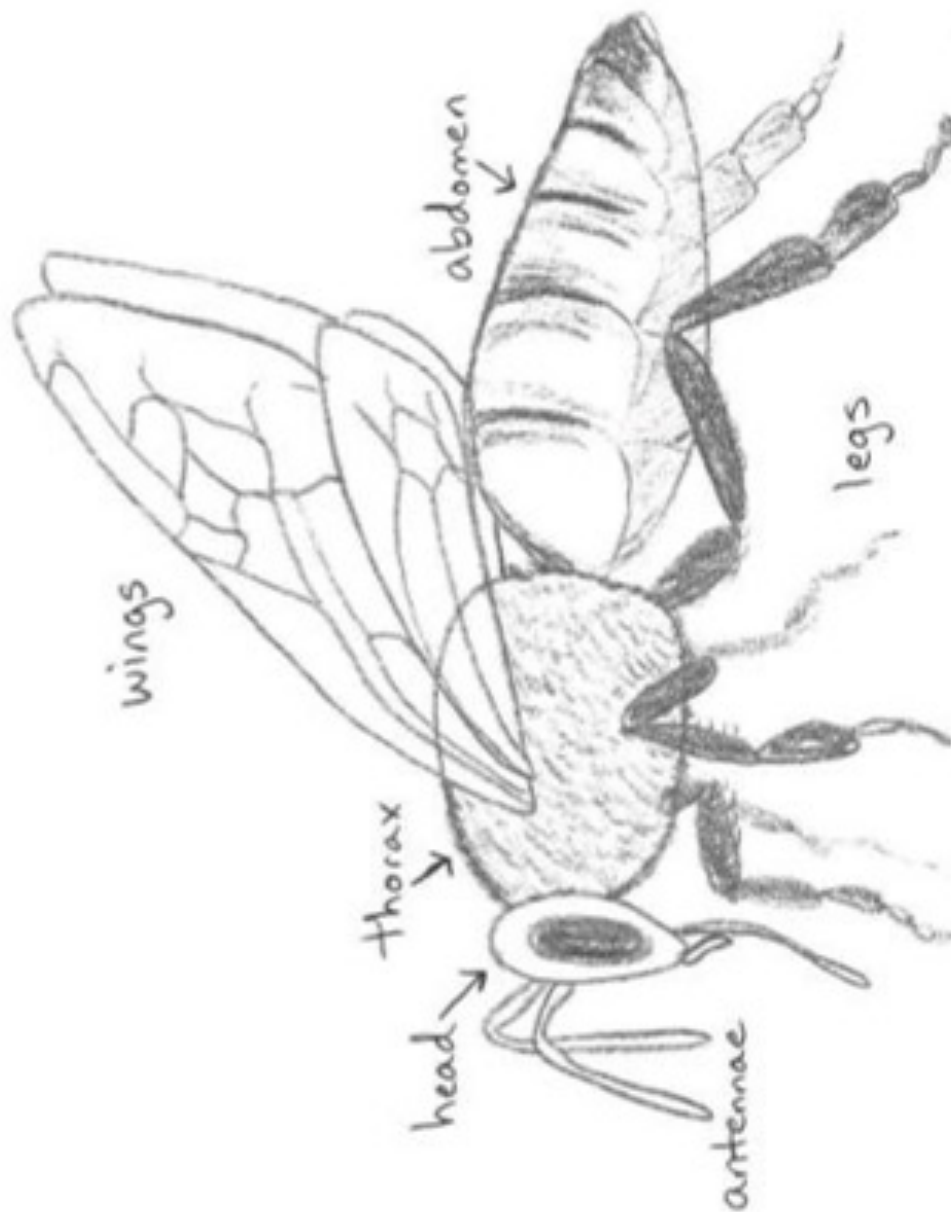
EVALUATE AND CLOSE: Before moving on to the next station, please take a few moments to have students reflect on what they have learned.

- Ask students to describe something surprising they learned about bees in the hive.
- Why are bees important for the farm?

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BEE ANATOMY DIAGRAM



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