

**Grade Level:** K - 4

**Essential Skills:** 4, 5, 9

**NGSS:** 2-LS2-2

**CCSS:** Language Arts/Literacy: RL.1.1, 1.RI.7, SL.2.5

**Social Sciences:** K.11, RI.1.7, 1.12

**Time:** 45 minutes

**Materials:** [Busy Bee Kit\\*](#)  
3 copies of beehive picture, 5 copies each of blueberry bush, apple tree, and flowers, chalk pieces, numerous cotton swab 'bees,' pencils for tallying.

\*Free kits with all materials available to Oregon educators from our Free Loan Library

**AITC Library Resources:**  
Check out these materials online at [AITC's Free Loan Library](#):

**Books:**  
*The Beeman*  
*Beekeeper Pat and the Amazing Dancing Bees*  
*Busy, Buzzy Bees*  
*These Bees Count*  
*Honey in a Hive*  
*Bees - A True Book*  
*What's for Lunch: Honey*

**More Activities:**  
*Pollinator Education Project Poster*  
*The Honey Files - A Bee's Life (book and accompanying video)*

# Lesson to Grow

## Busy Bees

### Description:

Plants, including most crops needed for food, reproduce using pollination. Bees are some of the most important pollinators. Some bees are native and live in soil, burrows, or tree galleries. Honeybees are raised by humans in hives to bring into orchards and farms for pollination. If we didn't have pollinators, we wouldn't be able to enjoy apples, oranges, carrots, and broccoli or over 100 other crops that depend on pollination!

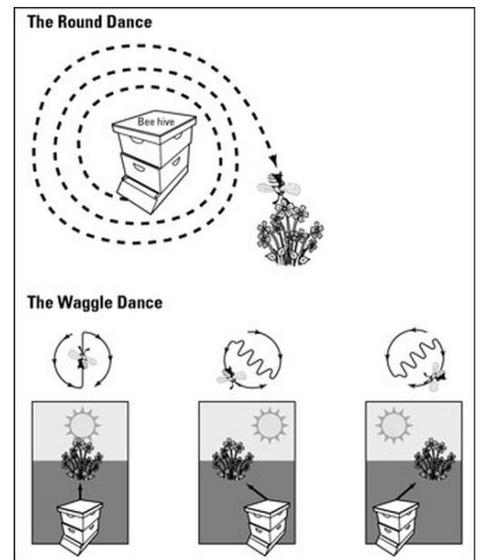


### Setting the Stage: Read a book

An age-appropriate book from the list at right is a perfect way to begin this lesson. *The Beeman* is a sweet story of a boy and his grandfather who is a beekeeper. Beekeepers are essential to almost all types of agriculture, as they will drive their beehives to farms, where the honey bees will pollinate all of our favorite foods. At the end of this book, there is a more in-depth look at beekeeping processes. There is also a section on Pollination and Bee Dancing on the last page that will help to explain the activities that will come next.

### Part 1: Bee Dance

Have students stand up. Lead them in a movement activity where they will pretend they are a bee doing a dance to show other bees where to find nectar. A **round dance** is performed when the nectar is close by and have the students make a small circle by walking and buzzing slowly in one direction and then the other. Next, have the students pretend that the nectar is further away, this time they will do a wagtail or **waggle dance**. Have the students walk in a "figure 8" to show the other bees where to find nectar. For older grades, you can make it more advanced by turning more sharply or traveling further in their dances. See Extension Activities below and play Hive and Go Seek!



From [www.purepeihoney.com/beekeeping.html](http://www.purepeihoney.com/beekeeping.html)

### Part 2: Busy Bees Activity

- 1) Begin by discussing how the beekeeper is a very important person because they ensure that their honeybees stay healthy, warm and fed during the winter inside the hives. Honeybee workers need a lot of energy to find favorable food sources. Studies have shown that they will fly up to 6 miles to visit a nectar source.
- 2) This activity shows us how worker bees help to pollinate our plants. Cross-pollination is how the pollen from plants like blueberries, apples and flowers is transferred to other plants by bees. Everyone in the class is going to have a specific job to fulfill. Let students know that there is going to be 3 beekeepers, 15 farmers in charge of different crops (3 each of blueberries, apple trees and flowers), and the rest of the students will be worker bees.

If the class is smaller, adjust the number of farmers, hives and bees to allow for ample amount of bees. As you explain these roles you can separate them out throughout the room in “fields/orchards”: one hive should be nearby a cluster of apple trees, one hive near the blueberries, etc. Students may wonder about other roles like the queen or drones, assure them that these bees are in the hive that the beekeeper will tend. Demonstrate what each role will do:

The **beekeepers** are going to tally the number of times that the worker bees visit the hive. Some students may know this as “bundling”.

The **farmers** will each tend a crop, tallying the number of times the worker bees visit their plant for nectar. While you are setting up the crops, color them with chalk to create the “pollen”. In older classes, you might leave this for the farmers to do.

Finally, demonstrate what the **worker bees** will do by “flying” and buzzing from the hive, to the flowers and “drink the nectar” while dipping the cotton swab in the chalk. The bees will then visit other plants and/or crops before returning to the hive.

3) Next, assign the roles. Start with the beekeepers and farmers, as you call on students have them quietly go to their stations. Give the remaining students cotton swab “bees”, and divide among the fields. Let the students “buzz” around the classroom for several minutes. After there has been significant “cross-pollination” you can tell everyone to freeze. Point out the “cross-pollination” that has occurred with the blending of the colors. You may want to lead students to this by asking, “What have you noticed? What shows us that cross-pollination has occurred?”

### Variations:

First say that a cold-weather storm makes flying very difficult and the bees travel much slower. Have the worker bees move in slow-motion around the room. Pretend that a disease makes the bees sick and half of the worker bees die, again noting the difference in visits. Have some worker bees back at the hive and have the worker bees perform a waggle or round dance to direct their classmates to the correct plant. After a few minutes with these variations, talk about the difference that it made and the impact that it would have in agriculture. If the bees can’t get to the crops to pollinate, there will be lower yields of pollination-dependant crops. Lower yields mean less food. We need to care for our honeybees so they can be as healthy as possible for pollination. We can provide native bees habitat so they will continue to pollinate crops.

### Extension Activities:

Play “Hive and Go Seek” - Have one ‘scout bee’ hide an object such as a silk flower while the ‘worker bees’ close their eyes. The scout comes back and does a bee dance to tell the workers where the flower is. The workers fly in the direction of the dance, and when they find the flower, everyone pretends to take a sip of nectar. Play until all get a chance to play the scout bee.

Explore AITC’s Bees and Honey Playlist on YouTube, with a video showing a beekeeper handling the queen and worker bees.

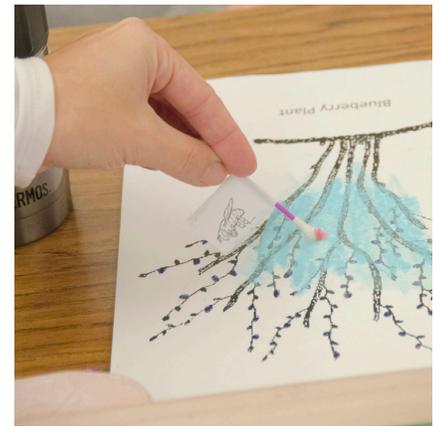
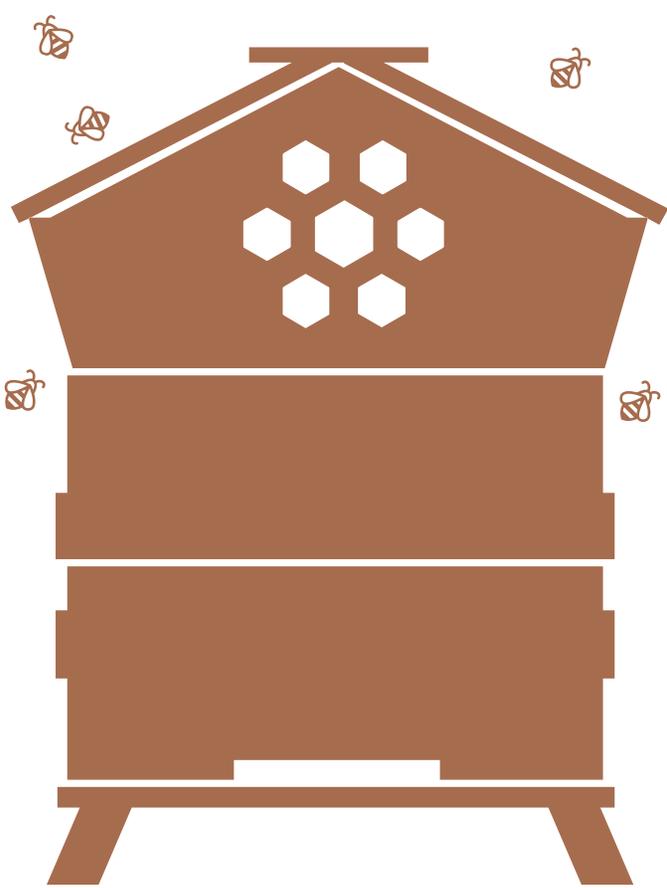
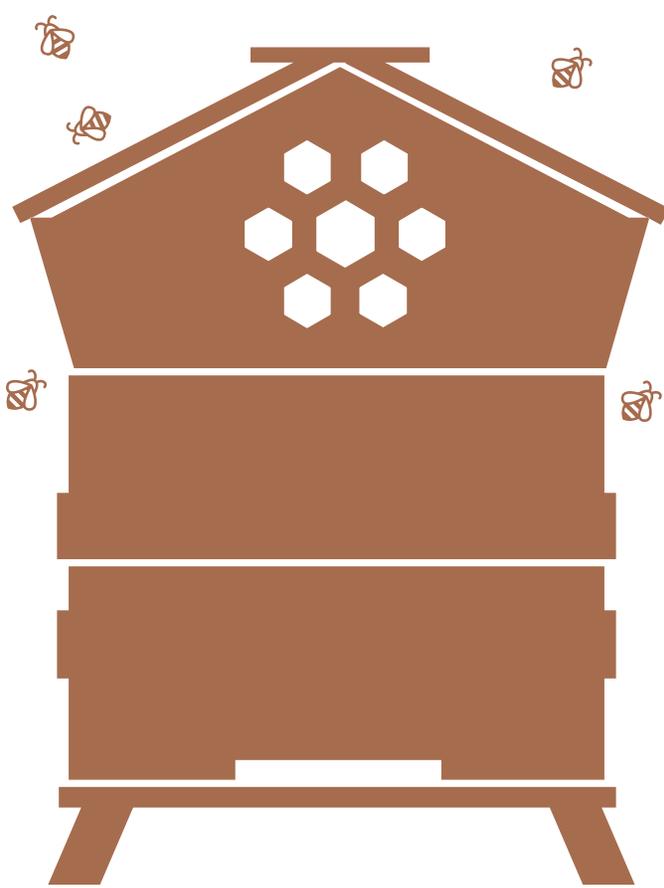


Photo by Richard Pardon | richardpardon.co.uk

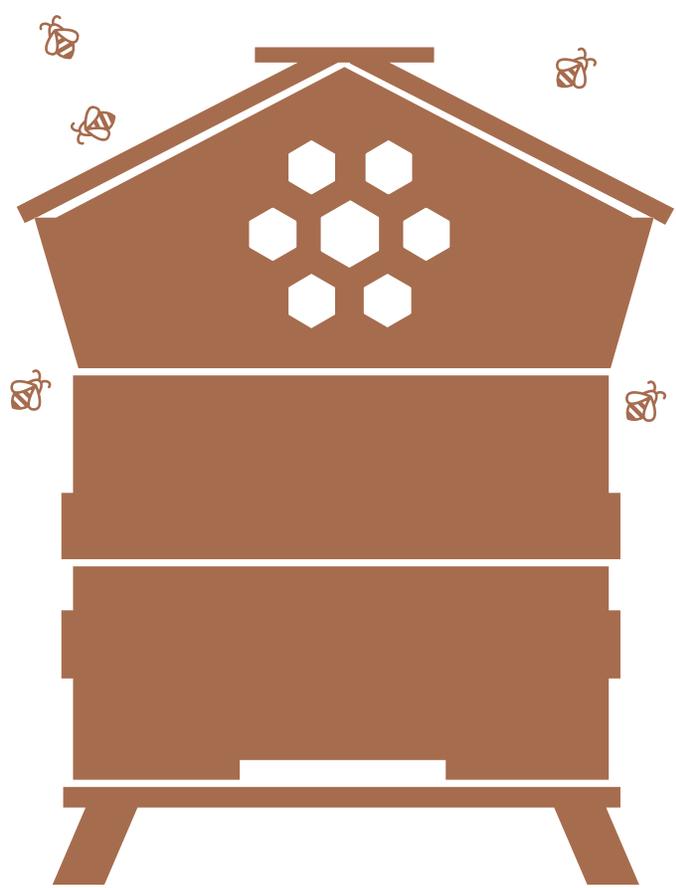
This picture shows the size differences of the queen, drone, and worker honeybees.



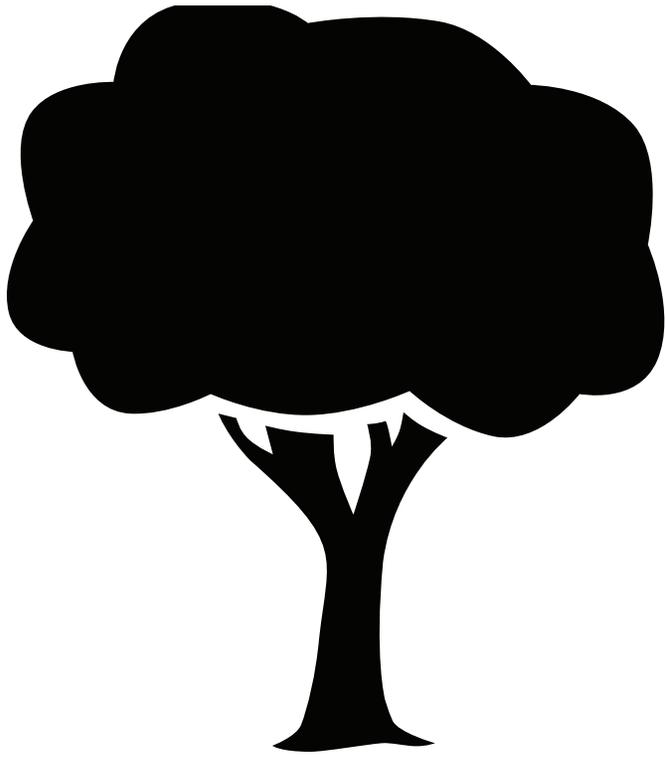
**BEE HIVE**

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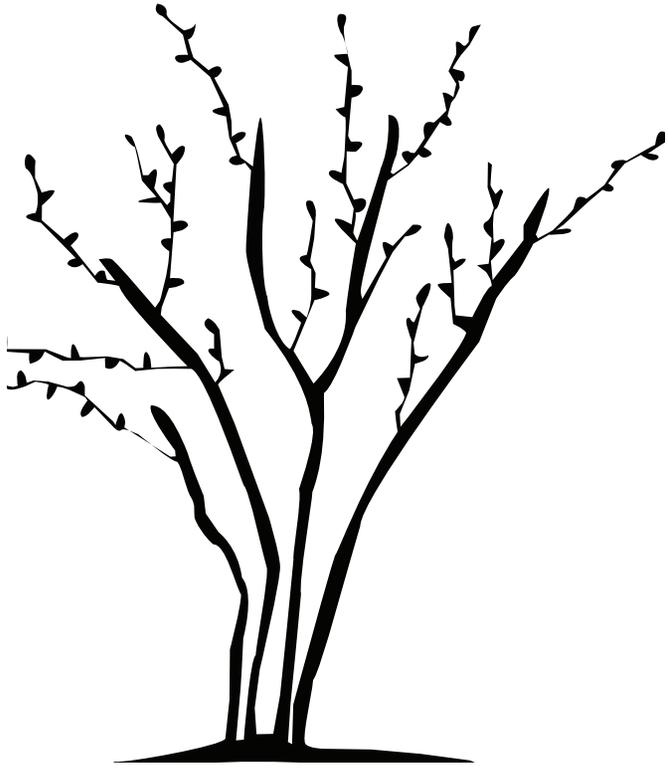
**APPLE TREE**



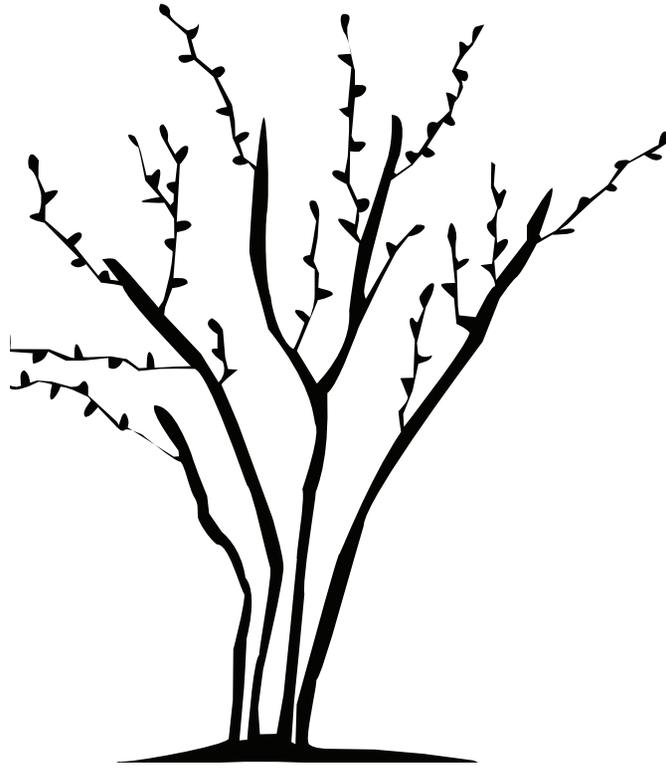

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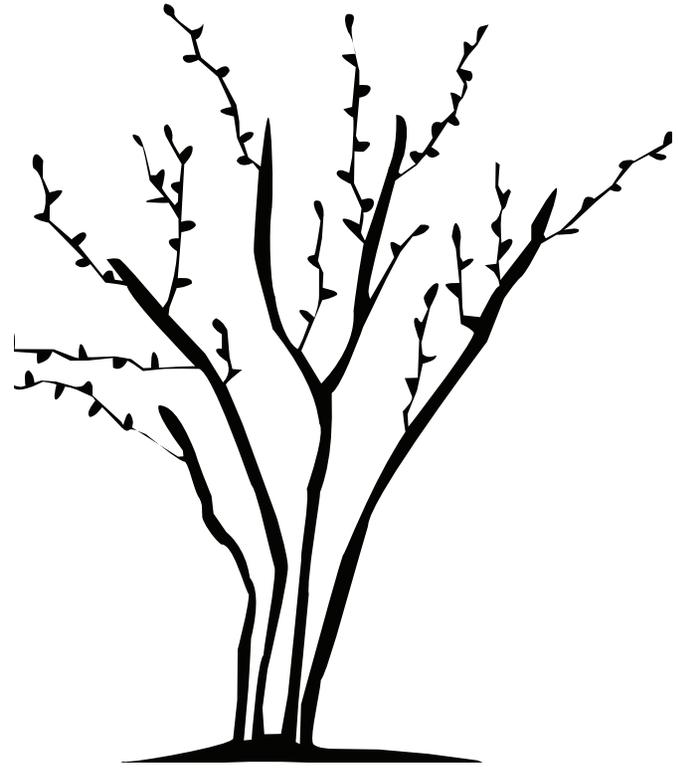

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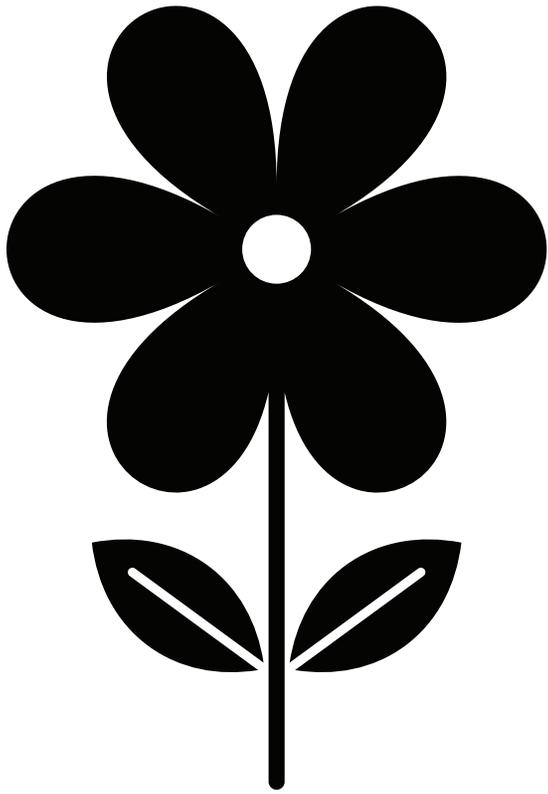
**BLUEBERRY PLANT**

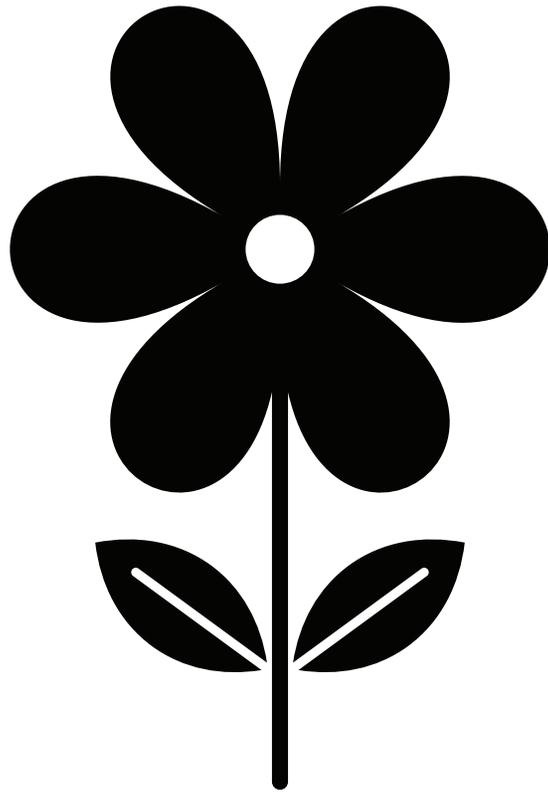
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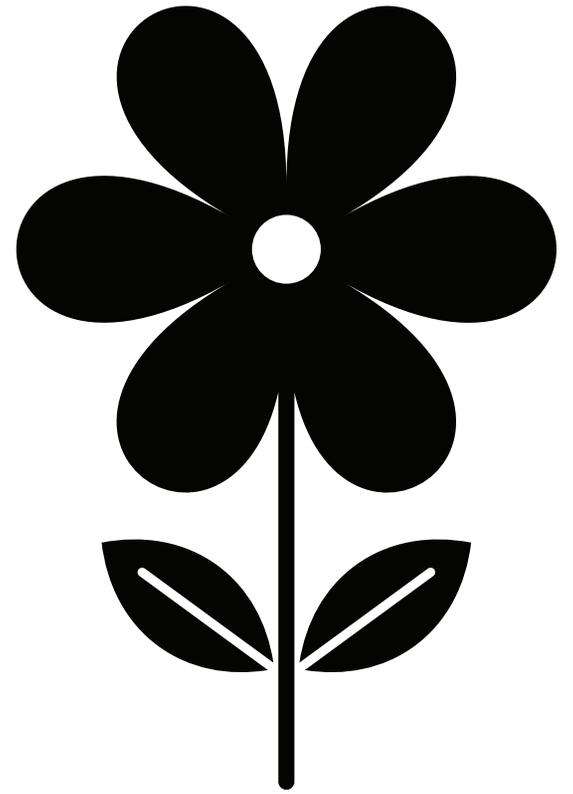
**BLUEBERRY PLANT**

**FLOWER**



**FLOWER**



**FLOWER**