

## Lesson 3

## Honey Bee History

**Learning Objective:** Students will understand how essential bees are as pollinators and will gain an understanding of bee biology and behavior.

**Question:** What do you know about bees and their importance?

**Introduction:** Honey bees are valuable. They contribute to the success of American agriculture and industry. You probably already know one use of honey: as a delicious sweetener on biscuits, bread, and rolls. Honey also has several other uses that make it a very important product of American agriculture. It is a main ingredient used in the baking and candy industries. Athletes may use honey for quick energy. In the medical profession, honey has been used for its antiseptic qualities in burn ointments and in the preparation of medicines. Throughout history, honey has been used in the production of wines. Honey wine—mead—is still a very popular drink in many parts of the world.

Beeswax, another product of the honey bee, also has many important uses. The cosmetic industry uses beeswax in the preparation of products such as cold creams, lotions, rouges, and lipsticks. Beeswax is a basic ingredient in many candles. Manufacturers of pharmaceuticals include beeswax in many preparations of salves and ointments. Dentists use it for impression wax. Foundries need it for molds in precision casting. Beeswax is an ingredient in many types of polishes for floors, furniture, and shoes. Other uses include adhesives, crayons, chewing gum, inks, ski wax, thread wax, ironing wax, and archer's bow wax.

If there were no honey bees in this country, American farmers could not produce nearly enough of some of your favorite foods, such as apples, peaches, almonds, and watermelons. This is because many plants must be pollinated to produce fruit. Pollen grains must be transferred from the male parts of the flowers to the female parts to make a seed. Honey bees do this by pollinating flowers. In fact, honey bees do 80 percent of all crop pollination.

There are several reasons why honey bees are such excellent pollinators. First, they are very hard workers. An individual bee may visit as many as a thousand flowers in one day. During these flower visits, the large, hairy bodies of the bees easily pick up and hold many tiny pollen grains. Second, bees visit only one type of flower on a particular trip. Third, beehives can be moved easily into areas where flowers need to be pollinated. Because of these special bee qualities, American crop producers rent millions of colonies honey bees each year to pollinate their crops. (from Purdue University extension publication 4-H-571-W *4-H Beekeeping Division 1*)

### Facilitating the Activity:

- Have your students learn about the natural history of honey bees by watching the video entitled Honey Bees – Natural History 1, at [www.youtube.com/watch?v=x7cX2cjFunw](http://www.youtube.com/watch?v=x7cX2cjFunw)
- Have them complete the Bee History worksheet.
- This video worksheet could be used as a graded homework assignment, an in-class individual or small group assignment, or discussed with an entire class.

**Classroom Discussion:** In addition to going over the questions in the worksheet, here are some other suggested questions you might discuss with your students after completing the video worksheet.

- “Who” do you think benefits more from the flower-honey bee relationship, the flowers or the honey bees?
- The video mentioned that we can thank the bees for foods like oranges, apples, and watermelons. Can you think of any other foods that we depend on bees for?

**Additional Information:** An excellent resource for teachers can be found in the Purdue University extension publication entitled *The Complex Life of the Honey Bee*, available for download at <https://ppp.purdue.edu/wp-content/uploads/2017/PPP-116.pdf>

**Next Generation Science Standards:** TBD

**Fly Higher:** You or your students may personally know a beekeeper who maintains hives on his/her property. An interesting follow-up activity might be to invite a beekeeper to come in and talk to the class. (For possible contacts, check out [backyardbeekeepers.com](http://backyardbeekeepers.com) or [bee.watch](http://bee.watch)) Another follow-up activity could be for students to visit a specialty foods store or farmers’ market, and write down as many different flavors of honey that they can find, labeled according to the types of flowers that the bees used in the production of those types of honey.

**Glossary:**

- **Queen bee** – a special adult, fertile, mated honey bee that is the mother of all the other bees in the hive
- **hive** – a structure, such as a hollow log or man-made box that bees live in
- **honeycomb** – a sheet of six-sided wax cells produced by honey bees, used for storing honey, pollen, and developing bee embryos