

## Virtual Monarch and Meadow Month Lesson: The Buzz About Bumblebees

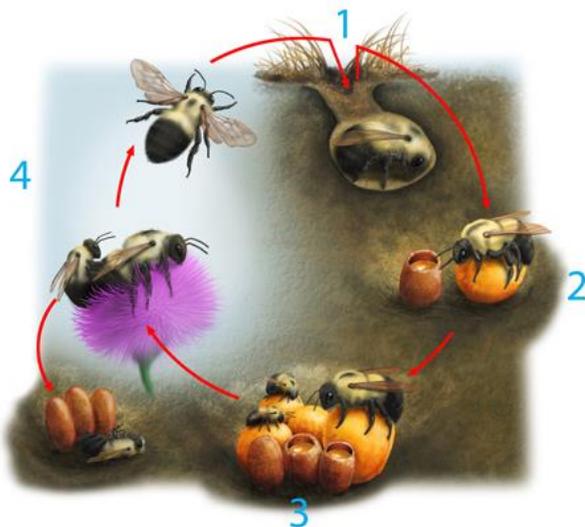
*In this lesson, participants will learn all about the life cycle and importance of bumblebees.*

The word **bee** often conjures the image of a buzzing hive dangling above the head of the hopeful bear named Pooh. But that would be the home of the non-native honeybee (*Apis mellifera*), a bee that arrived in the new-world with the earliest colonists. In New Jersey, there are about 300 species of native bees that were here doing their important work of pollinating plants long before the honeybee arrived.



Perhaps the most beloved is the bumblebee. There are many different species of bumblebees, but they all belong to the genus *Bombus*. Bumblebees are generalists, meaning that they will forage on numerous wild plants and crops. However, some plants do depend almost exclusively on bumblebees to achieve pollination.

Bumblebees are **social**, living in colonies with an annual life cycle. In the fall, the queen and the whole colony will die except for a few newly-fertilized queens (**gyne**s) that hibernate through the winter. In the spring, the new queens emerge and begin a new colony that may grow to about 50 – 500 individuals, depending on the species. Because the colony does not survive the winter, bumbles don't make honey.



*Bumblebee Life Cycle*

Bumblebees make nests in underground cavities like abandoned rodent holes. There, the queen creates little brood pots out of pollen and nectar and lays her first few eggs inside them. It takes four to five weeks for the first workers to emerge. Their job is to forage for pollen and nectar and help the queen tend the growing number of larvae. The queen will continue to lay eggs, and the colony will grow steadily through the summer. At the end of summer, new queens and males will emerge and mate. Then the annual life cycle begins anew.

Bumblebees have fuzzy coats and can heat their bodies by vibrating their wings, so bumblebees are able to fly in cooler temperatures and lower light levels than many other bees. This allows them to become and remain active from late

winter until November. Since they are busy for so many months, they must be able to forage on a wide range of plant species under all kinds of weather conditions to keep the colony alive. Early season and late season flowers are critical for their survival, as this is when the colonies are most vulnerable. When foraging, the bumblebee workers collect and carry pollen on their “pollen baskets” (corbiculae) on their rear legs.

Bumblebees are one of our most efficient pollinators due to their large size and ability to buzz pollinate. With buzz pollination or **sonication**, a bee grabs the tubular pollen-producing structure of a flower in her jaws and vibrates her wing muscles. The vibrations dislodge pollen that would have remained trapped



on the male anthers. Plants like tomatoes, peppers, and cranberries rely on the buzzing of bumblebees for successful pollination. Bumblebees are incredibly important in helping keep food on our tables. Sadly, bumblebees face many threats including habitat loss, disease, pesticide use, and climate change. Learn what you can do to help bumblebees [here](#).

**Test your knowledge:**

- How many kinds of native bees do we have in New Jersey?
- Do bumblebees make, store, and live off honey to survive the winter like honeybees?
- What gives bumblebees the ability to fly and forage in late winter and late fall?
- What structure do bumblebees use to collect pollen and carry it back to the colony?
- What is buzz pollination? What crops rely on buzz pollination?

**Home Activity:** Join [Bumblebee Watch](#) and help scientist collect observations about bumblebees near you!

**Additional Resources**

- [Xerces Society Bumblebee resources](#)
- [Native bees Brochure](#)
- [Pollinator Partnership](#)
- [Bumblebee fact sheet](#)
- [Make a Bumblebee mask craft for kids](#)
- [Plant lists for home pollinator gardens](#)