



# National Pollinator Week

In 2007, the United States Senate voted with unanimous approval to designate a week each June as National Pollinator Week. This week was initiated and is managed by Pollinator Partnership ([pollinator.org](http://pollinator.org)) to spread the word about what we can do to protect our pollinators. Countless activities and events both in and out of the classroom are available for all ages and designed to address the issue of declining pollinator populations. Pollinator Week is also a wonderful time to celebrate the beauty of pollinators and the value that they bring to our ecosystems. Take a look at the resources below and attached to learn how you can make a difference during Pollinator Week—and the rest of the year!

Here at the Shaker Heritage Society, it is well documented that the Shakers relied on both natural resources and farming for their survival. In addition to being an agricultural society, they developed industries based on crops and many natural resources. These industries played a key role in their economy. Most notably, the Shakers developed the idea of packing seeds in small envelopes for sale. In short, they greatly relied on the success of pollinators!

## **Pollinator Week Overview**

1. An overview of pollinators and their role in the community- [www.nacdnet.org/wp-content/uploads/2019/08/Native-Plants-Pollinators-Slides.pdf](http://www.nacdnet.org/wp-content/uploads/2019/08/Native-Plants-Pollinators-Slides.pdf)
2. The official pollinator week toolkit with access to resources to celebrate and promote pollinators- [www.pollinator.org/pollinator.org/assets/generalFiles/Pollinator-Week-2020-Toolkit\\_V2.pdf](http://www.pollinator.org/pollinator.org/assets/generalFiles/Pollinator-Week-2020-Toolkit_V2.pdf)

## **Educational Resources and Activities**

1. Comprehensive list of educational tools and pollinator activities for the classroom- [www.pollinator.org/learning-center/education](http://www.pollinator.org/learning-center/education)
2. Pollination resources/lesson plans/activities for educators- <https://entomology.osu.edu/node/350>
3. Five things kids can do to help pollinators- [www.pollinator.org/pollinator.org/assets/generalFiles/5-Things-Kids-Can-Do-to-Help-Pollinators-2020.pdf](http://www.pollinator.org/pollinator.org/assets/generalFiles/5-Things-Kids-Can-Do-to-Help-Pollinators-2020.pdf)
4. How to build a nesting block for bees in your backyard- [www.pollinator.org/pollinator.org/assets/generalFiles/Build-a-Bee-Condo-2020.pdf](http://www.pollinator.org/pollinator.org/assets/generalFiles/Build-a-Bee-Condo-2020.pdf)
5. Quiz yourself on pollinator terms with this crossword puzzle- [www.pollinator.org/pollinator.org/assets/generalFiles/Pollinator-Puzzle-2020.pdf](http://www.pollinator.org/pollinator.org/assets/generalFiles/Pollinator-Puzzle-2020.pdf)
6. Learn about a honeybee's role in pollination along with honeybee pollinator activities- [www.fs.fed.us/wildflowers/kids/teacher/documents/11\\_bees.pdf](http://www.fs.fed.us/wildflowers/kids/teacher/documents/11_bees.pdf)



# Pollination Fast Facts

## What is pollination?

Pollination is a vital stage in the life cycle of all flowering plants. When pollen is moved within a flower or carried from one flower to another of the same species it leads to fertilization. This transfer of pollen is necessary for healthy and productive native & agricultural ecosystems.



- About 75% of all flowering plant species need the help of animals to move their heavy pollen grains from plant to plant for fertilization.
- About 1,000 of all pollinators are vertebrates such as birds, bats, and small mammals.
- Most pollinators (about 200,000 species) are beneficial insects such as flies, beetles, wasps, ants, butterflies, moths, and bees.

## Why are pollinators important?

Pollinators are often keystone species, meaning that they are critical to an ecosystem. The work of pollinators ensures full harvests of crops and contributes to healthy plants everywhere.

- An estimated 1/3 of all foods and beverages is delivered by pollinators.
- In the U.S., pollination produces nearly \$20 billion worth of products annually.



## How you can help.

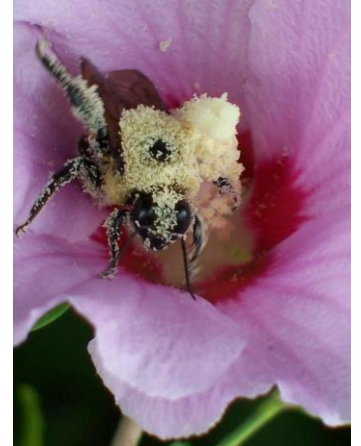
- **Reduce your impact.** Reduce or eliminate your pesticide use, increase green spaces, and minimize urbanization. Pollution and climate change affect pollinators, too!
- **Plant for pollinators.** Create pollinator-friendly habitat with native flowering plants that supply pollinators with nectar, pollen, and homes. For information on what to plant in your area, download a free eco-regional guide online at [www.pollinator.org](http://www.pollinator.org).
- **Tell a friend.** Educate your neighbors, schools, and community groups about the importance of pollinators. Host a dinner, a pollinated food cook-off or other event and invite your friends.
- **Join the Pollinator Partnership** Go to [www.pollinator.org](http://www.pollinator.org) and click on “Get Involved.” Be part of a growing community of pollinator supporters.



# Pollination Fast Facts: Gardeners

## What is pollination?

- Pollination occurs when pollen grains are moved between two flowers of the same species, or within a single flower, by wind or animals that are pollinators. Successful pollination, which may require visits by multiple pollinators to a single flower, results in healthy fruit and fertile seeds, allowing plants to reproduce. Without pollinators, we simply wouldn't have many crops!
- About 75% of all flowering plants rely on animal pollinators and over 200,000 species of animals act as pollinators. Of those, about 1,000 are hummingbirds, bats, and small mammals. The rest are insects such as beetles, bees, ants, wasps, butterflies, and moths.

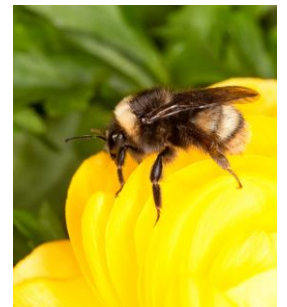


## Why are pollinators important to us?

- Worldwide, approximately 1,000 plants grown for food, beverages, fibers, spices, and medicines need to be pollinated by animals in order to produce the goods on which we depend.
- Foods and beverages produced with the help of pollinators include blueberries, chocolate, coffee, melons, peaches, pumpkins, vanilla, and almonds. Plants that depend on a single pollinator species, and likewise, pollinators that depend on a single type of plant for food are interdependent. If one disappears, so will the other.

## What about bees that sting? What about allergies?

- Most species of bees don't sting. Although all female bees are physically capable of stinging, most bee species native to the U.S. are "solitary bees," that is, not living in colonies and don't sting unless they are physically threatened or injured. Only honey bees are defensive and may chase someone who disturbs their hive.
- It is wise, though, to avoid disturbing any bee or insect nest. For instance, if you spot an underground nest of ground-nesting bees, you might want to mark it with a stick so that it can be easily avoided.
- Some people are allergic to pollen of various flowering trees, plants and grasses, but not to all pollen. A common misunderstanding is that hay fever is caused by goldenrod pollen. It isn't! Ragweed is the main offender and should be avoided.





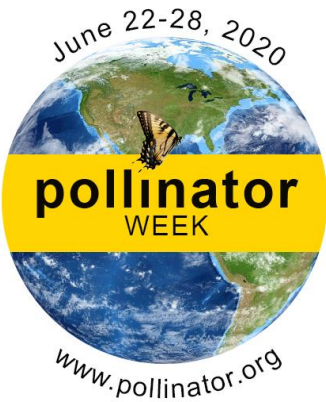
# Ways you Can Help!

## What everyone can do for pollinators:

- **Watch for pollinators.** Get connected with nature. Take a walk, experience the landscape and look for pollinators' midday in sunny, planted areas.
- **Reduce your impact.** Reduce or eliminate your pesticide use, increase green spaces, and minimize urbanization. Pollution and climate change affect pollinators, too!
- **Plant for pollinators.** Create pollinator-friendly habitat with native flowering plants that supply pollinators with nectar, pollen, and homes.

## What you can do for pollinators:

- **Create** a pollinator-friendly garden habitat in just a few simple steps.
- **Design** your garden so that there is a continuous succession of plants flowering from spring through fall. Check for the species or cultivars best suited to your area and gradually replace lawn grass with flower beds.
- **Plant** native to your region using plants that provide nectar for adults plus food for insect larvae, such as milkweed for monarchs. If you do use non-native plants, choose ones that don't spread easily, since these could become invasive.
- **Select** old-fashioned varieties of flowers whenever possible because breeding has caused some modern blooms to lose their fragrance and/or the nectar/pollen needed to attract and feed pollinators.
- **Install** 'houses' for bats and native bees. For example, use wood blocks with holes or small open patches of mud. As little as 12" across is sufficient for some bees.
- **Avoid** pesticides, even so-called "natural" ones such as *Bacillus thuringiensis* (Bt). If you must use them, use the most selective and least toxic ones and apply them at night when most pollinators aren't active.
- **Supply** water for all wildlife. A dripping faucet or a suspended milk carton with a pinhole in the bottom is sufficient for some insects. Other wildlife need a small container of water.
- **Provide** water for butterflies without letting it become a mosquito breeding area. Refill containers daily or bury a shallow plant saucer to its rim in a sunny area, fill it with coarse pine bark or stones and fill to overflowing with water.
- **Share** fun facts, such as: a tiny fly (a "midge") no bigger than a pinhead is responsible for the world's supply of chocolate; or one out of every three mouthfuls of food we eat is delivered to us by pollinators.



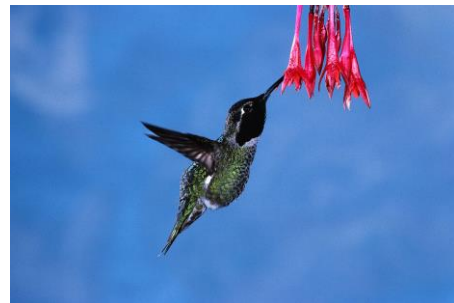
# 5 Things Kids Can Do To Help Pollinators

## 1. Be kind to your pollinator friends.

Pollinators like bugs and birds are small and fragile. It's easy for people to hurt them. Be gentle and quiet when they are near!

## 2. Look, but don't touch!

When you see a butterfly, bee, beetle, or hummingbird outside, look, but don't touch! Pollinators won't hurt you if you leave them alone and are nice to them.



## 3. Don't use poison sprays.

Bug your family to stop using poison sprays in your house and garden. This poison kills bad bugs, but it hurts pollinators too. Bug your family to buy ORGANIC fruit and vegetables. These are grown without poison sprays, so they keep pollinators safe and happy.



## 4. Keep pollinators' homes safe.

And help make habitat for pollinators. Take care of a garden. Plant some flowers. When you find a bug in your house, gently take it outside to its natural habitat.

## 5. Bug someone!

Bugs and pollinators are fun and interesting. Teach your family and friends about these important animals. Teach them to say "Thanks Bugs!" You can "bee" an expert!

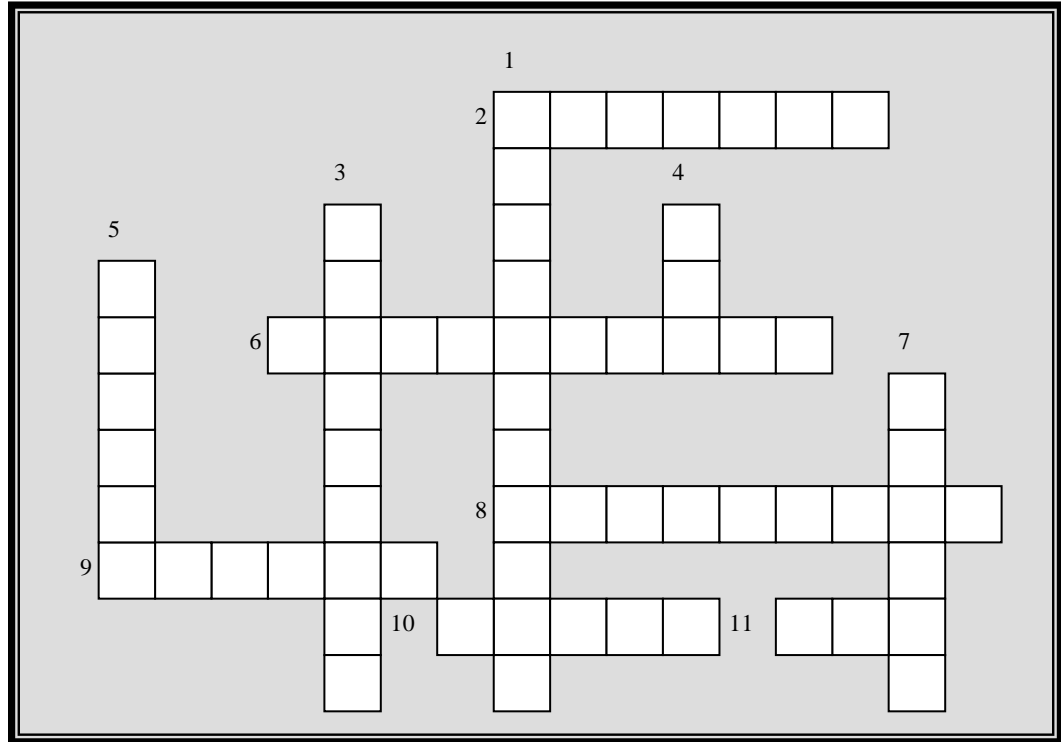
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Visit [www.pollinator.org](http://www.pollinator.org) for more ideas and information.

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# Pollinator Puzzle



## Pollinator Puzzle!

Read the clues at the right and find the right answer for each number from the list below. Write your answer in the puzzle space with the correct number.

bee	nectar
chocolate	butterfly
fruit	habitat
poison	pollinator
pollen	bat
hummingbird	

## Clues

1. A small bird that moves fast!
2. An animal's home.
3. Sweet! This is a treat made possible by a pollinator.
4. This flying mammal likes cactus flowers.
5. Using this spray hurts pollinators too.
6. An animal that helps pollinate flowers.
7. Found in a flower. Sometimes it makes us sneeze.
8. A very colorful and beautiful pollinator.
9. Sweet liquid found in flowers.
10. Yum! Many pollinated flowers grow into these.
11. A busy garden insect.



# How to Build a Bee Condo

## Create homes for native bees!

Many of the wild bees you may encounter in your backyard garden make their burrow homes in the soil. Some bees create hives in snags (a dead or dying standing tree, often with its branches broken off), or in holes in trees. You can also encourage bee-residents by providing man-made nesting blocks or “Bee Condos.”

## It’s easy to build a “Bee Condo” for your native bees.

### Materials:

- 4”x6” or 6”x6” dried pine or fir post (or you can try a weathered fence post or other scrap wood)
- Drill and drill bits, a variety of diameters, ranging from 1/4 in. to 3/8 in.
- Paper straws – not plastic (available at some hardware stores, or through a scientific supply store), or small hollow sticks, with one end sealed
- A warm location protected from rain and predators.

### How to do it:

1. Cut the wooden posts into blocks 8-12 in. long.
2. Drill holes into the wood blocks using a variety of hole diameters from 1/4 in. to 3/8 in. Drill holes 3-5 in. deep, and at least 3/4 in. apart. Smooth out ragged edges of holes.
3. Alternatively, a bundle of paper straws or hollow sticks, with one end sealed, will make an attractive bee home.
4. Bees prefer dark colored homes, so consider charring the front of your “Bee Condo” lightly with a torch.
5. Mount your “Bee Condo” on a post or attach to the side of a building. Place nesting blocks so that tunnels are horizontal. Make sure they are in a warm location with southern exposure and protected from rain. A good place could be under the eaves of a garage or shed.
6. If you don’t want to build your own “Bee Condo,” consider these commercial sources: [www.knoxcellars.com](http://www.knoxcellars.com), [www.raintreenursery.com](http://www.raintreenursery.com), [www.entomologic.com](http://www.entomologic.com), [www.pollinatorparadise.com](http://www.pollinatorparadise.com), <http://www.superseeds.com>

