



Lesson 3: How Can I Help Pollinators?

Theme

Pollinators are important providers of ecosystem services to humans, and need our help! There are several threats to pollinators that can be combated by simple actions everyone can accomplish.

Learning Objectives

Students will review the ways that pollinators help humans through ecosystem services. Students will learn about the threats to pollinators and simple actions we all can take to help them. Students will also learn about community science opportunities through the RIDEM Division of Fish and Wildlife's Wild Bee Observer survey.

Corresponding Activities for this Lesson

- Pollinator Protectors Gallery Walk
- Pollinator PSA

Materials

- Large pieces of paper
- Markers, crayons, colored pencils
- Plant and pollinator field guides

Lesson

1. This lesson will be presented through a gallery walk in place of a PowerPoint.

- Set up the gallery walk by placing 5 large pieces of paper around the room. On each piece of paper, write the follow questions (feel free to come up with your own, as well):
 - How do pollinators help humans?
 - What are some things that may harm pollinators?
 - Why should humans protect pollionators?
 - How can you help pollinators?
 - What are some cool facts you know about pollinators?
- Explain to students that there are 5 pieces of paper around the room with questions for them to answer about pollinators. Pass out markers and disperse students or groups around the room. Give students about 2 minutes per question,

making sure to give them a warning before time is up. It is okay if they don't get to all of the questions, they will have a chance to participate in the final discussion.

- Give students about 10-15 minutes total to walk around the room independently and write their thoughts on each piece of paper. They can also add some doodles to illustrate their thoughts! This can alternatively be done in small groups with a leader writing a single answer for their group. Encourage students to come up with their own ideas, and that answers can be anonymous. Once the time is up, gather back together as a group and discuss all of the answers.
- When the time is up, collect the markers and give students a couple of minutes to walk back through and read the answers from other classmates, ask them to think about what stands out to them. Gather students back together and begin a big group discussion.

2. Did anything stand out to you from these answers? Did you strongly agree/disagree with any of these answers? This is a great time to let students express themselves. Encourage students to share their thoughts, and have a respectful discussion.

3. How do pollinators help humans? Explain to students that when a wild animal or habitat helps people in some way, that is called an ecosystem service. The most important ecosystem service pollinators provide is pollination of crops. Some pollinators (wasps) also provide crop pest control because they act as predators of these pesky pests.

4. What are some things that might harm pollinators? Review students' answers, and add any that might be missing. Here are some details to share about the main threats to pollinators.

- *Habitat loss:* All wild creatures face this threat! It's tough to live in a habitat that is broken up into tiny pieces by roads, parking lots, and buildings. A lot of people think that pollinators just need flowers in the summer, but they need good habitat all year round, including shelter. Most neighborhoods and cities don't have space where pollinators can find good shelter. Leaf piles, brush piles, hollow dead flower stems and tree stumps or logs are usually cleaned up right away. However, these are some of the best places for bees, wasps, butterflies, and moths to shelter for the winter!
- *Lack of nutritious food:* Most pollinators will visit any flower they can find, but not all flowers provide the best nutrition or bloom at different times in the season so that there's enough food to go around all the time. Flowers in most of our yards and gardens are not native to Rhode Island, and don't provide our pollinators with the best nutrition. Many butterflies and moths only eat one or two native plants in particular, called host plants. The best known example is the monarch butterfly caterpillar and native milkweed, but the same concept applies to most butterfly and moth species in Rhode Island.
- *Chemicals:* Pesticides are chemicals that people apply to their gardens or crops to kill particular pest insects that are causing problems. Unfortunately, pesticides can kill pollinators too, even if people spraying them don't mean to! Herbicides kill weeds, but can also kill native plants if sprayed on them, which shrinks the local food source for pollinators.

- *Disease*: Did you know that honeybees are not native to North America? They are actually from Europe! Beekeepers take care of hives of these non-native honeybees, but if they aren't careful, the honeybees can get sick and then spread the illness to native wild bees. Wooden "bug hotels" are often marketed for bees and other insects to find shelter during the winter, but if not properly cleaned out, they can harbor harmful diseases and make the next bug tenants sick.
- *Invasive plants*: Invasive plants are not native to Rhode Island, but have arrived here from other parts of the world. Even though they aren't from here, they grow well in our local climate, and have a tendency to take over. When invasive plants crowd out native plants, that reduces food sources for pollinators, especially if they are hoping to find their host plants in an area.

5. Why should humans protect pollinators?

Without pollinators, humans would be very hungry! Pollinators are also food for other wild animals, and help a wide variety of plants to grow. A diverse and healthy ecosystem is important for everyone on the planet! Pollinators are also beautiful and fascinating, and deserve to be protected!

6. How can you help pollinators?

- Plant a pollinator garden with native plants.
- Create shelter for pollinators by making small brush piles with sticks, leaving the leaves on the ground in the fall, and leaving dead plant stalks up all winter. If you decide to put up a bug hotel, make sure to clean it out and refresh the materials so pollinators don't get sick.
- Don't use chemicals in your yard. Instead, opt for natural pest and weed control options
- Learn how to identify invasive plants and remove them from your yard, city park, or community garden.
- If you're going to be a beekeeper, make sure your bees are healthy.

7. Explain to students that there's another really cool way they can help Rhode Island's pollinators as community scientists through the Rhode Island Wild Bee Observer survey!

- A community scientist is anyone who has an interest in science. They do not have to work as a scientist professionally. Community scientists can be grown-ups or kids; they sign up to help out professional scientists with different projects by collecting information. The more people out collecting information, the more scientists can learn and share with the community!
- The Rhode Island Wild Bee Observer survey is an easy way to help bees in our state. All you have to do is take a photo of any bee you see in Rhode Island, submit through the iNaturalist app, and it goes straight to RIDEM's Pollinator Entomologist.
- This is a GREAT way to get your students outdoors and making science observations right at school! For detailed instructions, check out the first link on the quick links page in this packet (RIDEM Wildlife Observation Reporting).

8. What are some cool facts you know about pollinators? This is a great opportunity for students to share what they have learned about pollinators, and review the unit as a whole!

9. Wrap up this lesson with the Pollinator PSA activity.