

Roots

Digging Deeper into Soil & Water Resources



POLLINATOR POWER!

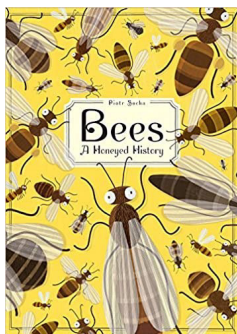
LITERACY CONNECTIONS



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Bats, bees, beetles, birds, butterflies, flies, moths, mosquitoes and wasps are all pollinators! That's some serious pollinator power! What are pollinators you ask? Let's take a step back and begin with plant pollination. Pollination occurs when pollen grains from the **anther** of a male plant are transferred to the female **stigma** of another plant of the same species. If the pollen transfer is successful, the flower is fertilized and seeds will begin to develop inside a protective fruit or pod. In many cases, animals assist with the transfer of pollen from one plant to another. We call these animals pollinators. Typically, pollinators move pollen unintentionally when they visit flowers to eat or collect protein-rich pollen and/or energy-rich nectar. It's important to note that not all plants need animals for pollination to occur, some plants are capable of self-pollination and some rely on other vectors including wind and water.

Those plants that do rely on biological vectors for pollination have co-evolved strategies called **pollinator syndromes** to attract pollinators to their flowers. Pollinator syndromes include flower color/shape/type, the presence or absence of nectar guides, flower scents and various amounts/types of pollen and nectar produced. The characteristics of these pollinator syndromes vary by plant to attract specific pollinators and increase the likelihood of pollen transfer from plant to plant. In this mutualistic relationship, the pollinators also benefit as they are rewarded with nectar and/or pollen when they visit the flowers.

What's the big deal when it comes to pollinators? **The Simple Truth: We Can't Live Without Them!** Without pollinators, many of our favorite foods—the same foods we rely on for survival— would not be available. Additionally, flowering plants that pollinators depend on for survival, provide clean air, produce breathable oxygen and help keep our waterways clean by preventing soil erosion.

Pollinators form the foundations of a healthy and sustainable future for food and the environment. Let's do our part to protect pollinators, we can't live without them!

References

[U.S. Forest Service](#) [National Geographic Kids](#)
[National Association of Conservation Districts](#)
[NIH Kids Environment Kids Health](#)

- 80% of all plants rely on pollination for survival.
- 1 out of every 3 bites of food we eat is made possible by pollination.
- More than 150 food crops in the U.S. depend on pollinators, including almost all fruit and grain. crops.



POLLINATOR POWER!

POLLINATOR POWER AT HOME

It's time to get outside, create and explore. Let's make a difference for pollinators in our own backyard or community!

Background Information:

The National Association of Conservation Districts (NACD) celebrated the 65th Stewardship Week in April 2020 with the theme "[Where Would We BEE Without Pollinators?](#)" This was a reminder that pollinators form the foundations of a healthy and sustainable future for food and the environment and raised awareness about concerning population declines. It's important that we work collectively to promote pollinator health by creating and enhancing native pollinator habitat. One way we can do this is by creating spaces for native solitary bees. There are over 4,000 native solitary bee species in the United States. Approximately 70% of these species are those that nest in cavities, tunnels and crevices.

We can support solitary bees in our own backyards and communities by constructing solitary bee houses!

Online Resources:

There are many different ways to construct solitary bee houses and insect hotels for your outdoor space. Below is a list of online resources with helpful pictures and tutorials to get you started:

- [Ranger Rick Bug Hotel](#)
- [Red Ted Art Simple Bug Hotel for Kids](#)
- [Michigan State University Bee Hotels](#)
- [Creating a Solitary Bee Hotel NebGuide](#)
- [Old Farmer's Almanac Bee House](#)
- [Audubon Insect Hotels](#)



ADDITIONAL RESOURCES

[Flowers Are Calling Read Aloud](#)

[National Association of Conservation Districts](#)

Conservation stewardship and educational materials available to download for free!

[Pick the Pollinator from PBS](#)

[USDA Pollinator Activity Book](#)

[USDA Be a Friend to Pollinators](#)

[U.S. Fish and Wildlife Service Pollinators](#)

Links to different webcasts, podcasts and curriculum about pollinators



GIVE IT A TRY!!

Participating in a Citizen Science program is a great way to support scientific research and make a difference! [The Great Sunflower Project](#) offers three different opportunities to collect data about pollinators and their habitat.

QUESTIONS TO EXTEND LEARNING:

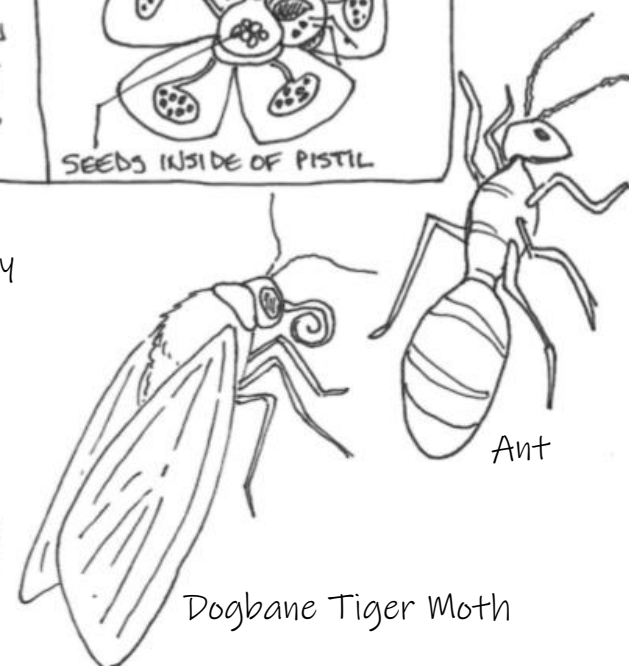
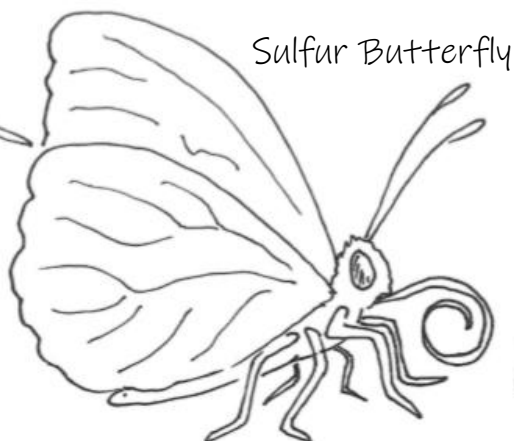
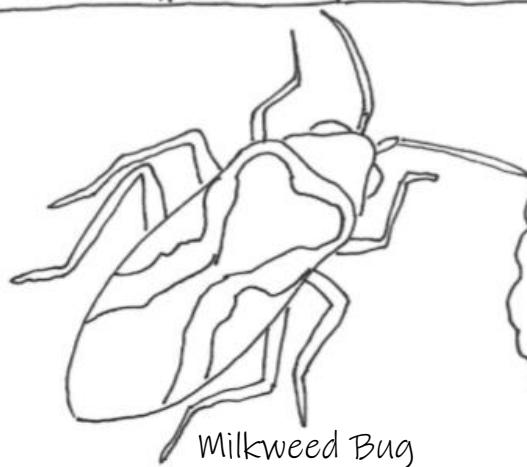
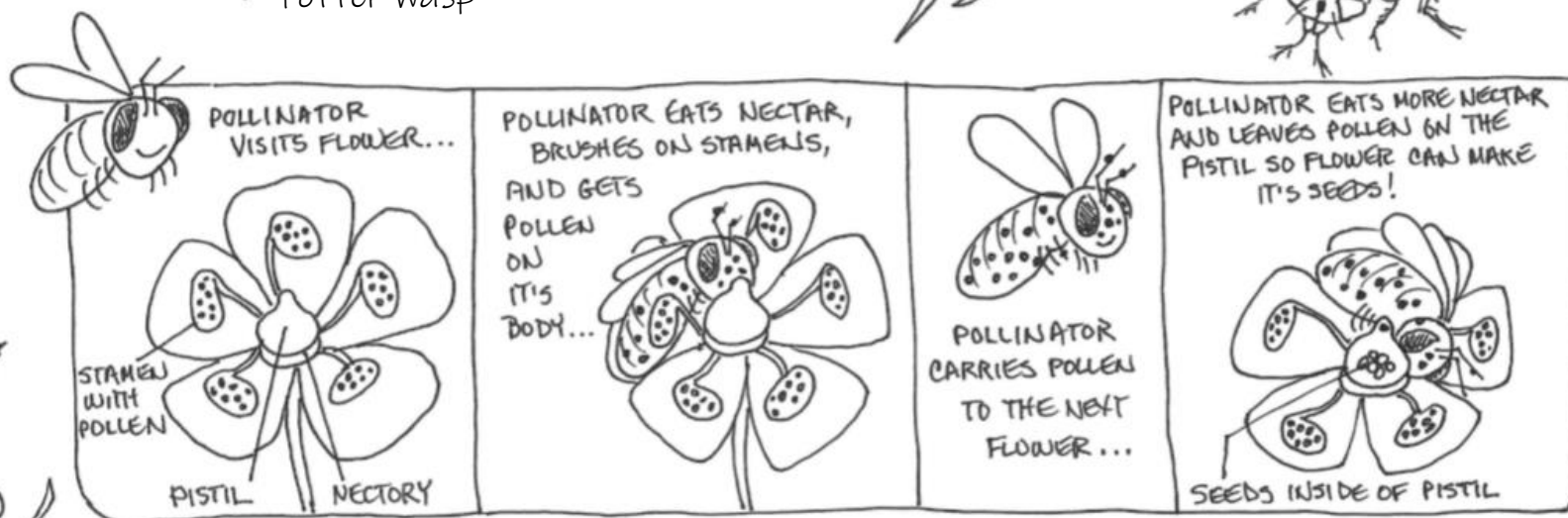
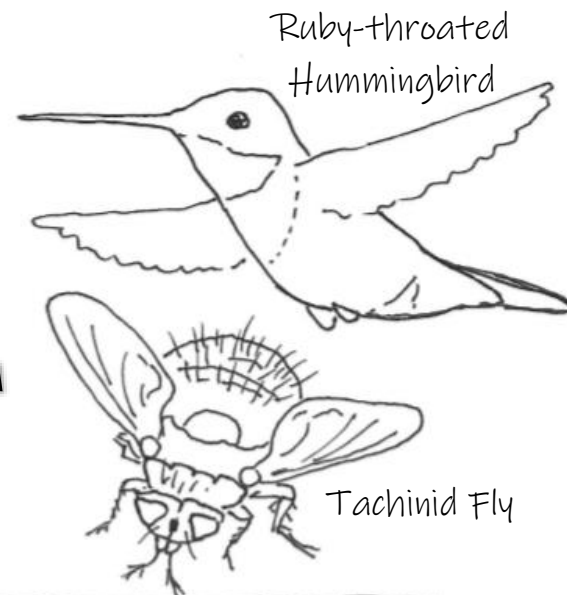
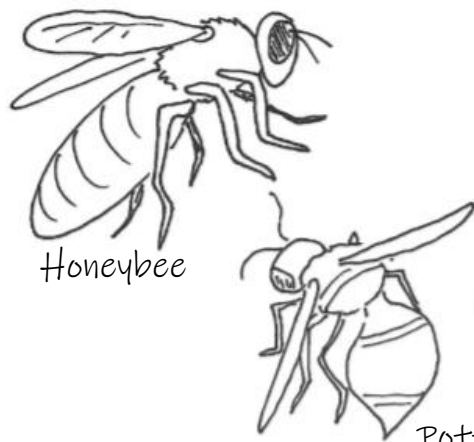
- In addition to creating a solitary bee house, what are other ways we can work together to protect pollinators?
- What pollinator syndromes attract butterflies? Bees? Moths? Beetles? Flies? Wasps? Birds?
- How many different types of food produced by pollinators can you find in your home?

After constructing your solitary bee house, extend learning with some Q&A's and snacks produced because of pollinators!

Examples of snacks:
Apples, almonds, blueberries, kiwis, pears, avocados, carrots, cantaloupe, cucumbers and celery!

Franklin Soil and Water Conservation District and the Natural Resources Conservation Service are equal opportunity providers and employers.

POLLINATOR POWER!



Name: _____