

## Background Information:

Questions to ask and discuss with students/participants. Or just good information for you to know before starting the activity.

### Pollinator Basics

What is a <b>pollinator</b> ?	Animals that help plants reproduce by transporting pollen from flower to flower.
What is <b>pollen</b> ?	Pollen is that yellow dust that you see everywhere in the spring time.
Why are pollinators <b>important</b> ?	Plants cannot produce seeds and fruits without pollinators. Do you like to eat apples, blueberries, strawberries, bananas, etc.? In fact, according to the US Department of Agriculture “three-fourths of the world’s flowering plants and about 35 percent of the world’s food crops depend on animal pollinators to reproduce.”
So how do pollinators <b>work</b> ?	Pollinators have special adaptations so they can drink the nectar (yellow sugary liquid that the plant gives them as a reward for carrying their pollen around). One adaptation is their very long, hollow tongues called a <b>proboscis</b> . The butterfly, moth and bee curl their proboscis up so they can fly. Pollinators <b>fly</b> so they can easily move from flower to flower.
How do their <b>carry</b> the pollen?	They have <b>hairs</b> that collect the pollen as they pass by it. Bees have a special pollen <b>basket</b> on their knees. Another cool trick is the bee’s <b>buzz</b> . The buzzing is actually <b>vibrations</b> that help the flower release its pollen. Butterflies taste flowers with their <b>feet</b> .
What is <b>happening</b> to pollinators?	<b>Pesticides</b> (chemicals that people use on their yards, crops, etc.), <b>diseases</b> (like white-nose syndrome and colony-collapse disease) and <b>habitat loss</b> are drastically reducing the numbers of pollinators.
What are people doing to <b>help</b> pollinators?	Organic farming or just reducing pesticide use can help save pollinators. You can also build pollinator garden in your home to provide habitat for pollinators. Because the bee population has been declining so much, some scientists have even been trying to build <b>robotic bees</b> .

### The Flower’s Side

How do <b>flowers attract</b> different types of pollinators?	Flowers use different features, like smell, color, shape, and size, to attract the pollinators they rely on. Different flowers rely on different types of pollinators.
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Examples of how they do this:

- Flowers that are pollinated by birds are usually tubular, odorless (they don’t smell), and have a good place to perch. Hummingbirds have great eyesight and especially like red flowers.
- Flowers pollinated by bees are often sweet smelling, brightly colored and might have a “landing platform” or flat petal at the base of the flower.

## The Flower's Side Continued

- Flowers pollinated by butterflies are usually brightly colored and clusters (lots of the same flower next to each other).
- Flowers pollinated by moths are white or dull colors and may be highly tubular (so moths really have to reach that proboscis deep into the flower).
- Flowers pollinated by bats are large and very smelly, sometimes with a fruit-like odor.

## Other Resources:

You can find some great information about the flower-pollinator relationship here: [https://www.fs.fed.us/wildflowers/pollinators/Plant\\_Strategies/index.shtml](https://www.fs.fed.us/wildflowers/pollinators/Plant_Strategies/index.shtml)

To get some practice matching pollinators and flowers, take a look at this fun activity from Nova (<https://www.pbs.org/wgbh/nova/flower/poll-nf.html>). Remember to pay attention to the color, shape, and size of the flower as well as the location of pollen on the flower.

## You will need:

- Paper
- Something to draw with (markers, crayons, pencil)

## Optional:

- Camera
- Clay or play dough
- Fuzzy sticks
- Toothpicks
- Craft sticks
- Duct tape
- Wire
- String and/or yarn
- Toilet paper or paper towel tubes
- cotton swabs
- pom poms
- Consider natural alternative like - leaves, acorns, rocks, etc.
- Or any other craft or supplies you might have at home



## Activity Directions:

1. Go outside and see if you can find some **flowers** (and maybe even some pollinators). Make a note and draw or snap a photo of the flowers. Make careful notes about the flower (remember—color, smell, shape, size, location, etc.)

\*If you cannot go outside or there are not many flowers blooming around you—no problem! We have included some on the following pages along with some pollinators to help you get your mind going. *(Note to adults—you can help pollinators by planting some of these flowers! Please see our Pollination Pod How to Video found here—<https://www.nczoo.org/education/family-group-programs/zoo-edventures-online-series>*

2. Think about what kind of pollinator would be attracted to your flower. Now **create your pollinator!** Make a robot or bionic pollinator! You can draw it or use some supplies you may have around your home. Here's a few suggestions: clay or play dough, fuzzy sticks, markers, toothpicks, craft sticks, duct tape, wire, string, yarn, toilet paper tubes, cotton swabs, pom poms, and so on.
3. When you are finished, take a picture of your pollinator and its flower and post them on the Zoo's EdZOOcation Facebook page under the comments section of this activity.
4. Go back to where you found your flower and see if any pollinators visit. Do they resemble the one you made?

***We cannot wait to see what you create!***