

WORCESTER ART MUSEUM



Nature Science *Buzz, Buzz, Busy Bees*



Flowers in a Vase, attributed to Jacob van Walscapelle, 1956.18



Picture a garden full of flowers, a field of corn or wheat, or an apple orchard. Those are big places... but they are dependent on very tiny animals! The creatures that they depend upon are **pollinators**, which are animals that help plants **reproduce**, or create baby plants. Pollinators are very important in helping us grow all kinds of plants, including our food! So how do they do that, and what is pollination?

All plants have a flower or reproductive part that produces

pollen. Pollen is a powdery material that can be spread to other plants of the same kind. Pollen carries information for making new plants. When it lands on a flower of the same kind, that plant can make seeds that will turn into baby plants. But how does the pollen spread?

One way pollen spreads is in the wind! It is small enough to float on the air. But the real champions of pollen-spreading are bees, butterflies, beetles, hummingbirds, and even bats and some other bugs. These animals visit flowers because they eat the pollen, collect it for their hive, or drink a flower's **nectar**, which is a sugary syrup that some flowers produce. Bees use the pollen to make honey. While collecting it, an animal will get pollen all over their legs and wings. When they visit a neighboring flower, some of that pollen will fall off. Ta-da! The pollen has been spread to a new plant!



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A Little Book of Natural History, 1951, Leonard Baskin, 1952.55

Vocabulary

Pollinators - Animals that spread pollen.

Reproduce - When an organism produces another individual of the same kind.

Pollen - A powdery substance produced by plants necessary for reproduction.

Nectar - A sugary liquid produced by plants, to attract pollinators

Symbiosis - When two organisms interact with, and affect, one another. This could be a harmful or a beneficial interaction.

Mutualism - When two organisms interact and both benefit from that interaction.

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How Many Pollinators Can You Find?

Look carefully at this still life...how many pollinators can you find?? Circle them and check the next page to see if you found the same number we did!

[A Garland of Flowers with the Education of the Virgin, Erasmus Quellinus II, probably about 1645, 1966.47](#)



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More on Bees...



We found 8 pollinators in this amazing painting! How many did you find? Do you think we could find more if we were able to see this painting in the galleries?

If you've ever wondered why flowers exist, pollen is why! Plants need a pollinator's help in order to make seeds. To attract pollinators, plants evolved flowers to be attractive to pollinators. Also fun to know is that most pollinators have special vision that makes bright flower colors even brighter, sometimes even neon--talk about the perfect pair! Flowers are very attractive to humans as well, and are very common in artwork, clothing, and decorations! Do you see any flowers around your house right now?

Do you see any real flowers or flowers in paintings or patterns around you right now?

Honeybees are some of the most interesting pollinators, because of how well they communicate with other bees. Can you guess how they do it? They dance for each other! Their dances point other bees in the right direction to the best flowers.

In this lesson we've learned how plants help animals by providing them with food, and how those same animals help the plant by spreading their pollen. This is an example of **symbiosis**, which is when two organisms interact and provide something for each other. More specifically, this is **mutualism**, which is when the two organisms both benefit, and neither one is hurt. These relationships occur all the time in nature, and are very important to a healthy ecosystem!



In these pictures you can see big orange lumps of pollen on the honeybee's legs. These are called pollen sacs, and they are located on the bee's back legs. This is where the bee stores all the pollen that it will be bringing back to the hive!



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Hands On Activity: Tissue Paper Gardens



Today we will celebrate flowers by creating our very own mini gardens using tissue paper, wire, and more. You can use new materials, or use recycled materials!

Supplies



- Tissue Paper of many colors
- Pipe cleaners or wire
- Scissors
- A mug or cup
- A stapler



Directions

1. Fold up one piece of tissue paper so you have a few layers you can cut at once.
2. Place the folded tissue paper on the table and place a mug or cup over it - trace the edge of the mug so you have a perfect circle.
3. Cut out the circle - you will have quite a few layers in a stack so make sure you hold on tight!
4. While still in a stack, staple all the layers together in the center.
5. Poke a small hole in the stack near the staple with a pencil.
6. Poke one end of your wire or pipe cleaner through that hole, so only about a centimeter is through.
7. Poke the end back through the tissue paper again on the other side of the staple to secure it that way. The rest of the long pipe cleaner is your flower's stem!
8. Now start to fold the flower - take one layer of tissue paper at a time and fold it upwards into a scrunch, starting with the top layer.
9. Do this with every layer until you have a fluffy flower!
10. Keep making flowers and eventually you will have enough flowers for a tissue paper bouquet or garden... maybe you'll even attract some pollinators!
11. Get creative - maybe use more than one color tissue paper in one flower, or try some other shapes other than circles!

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4



6



8



10

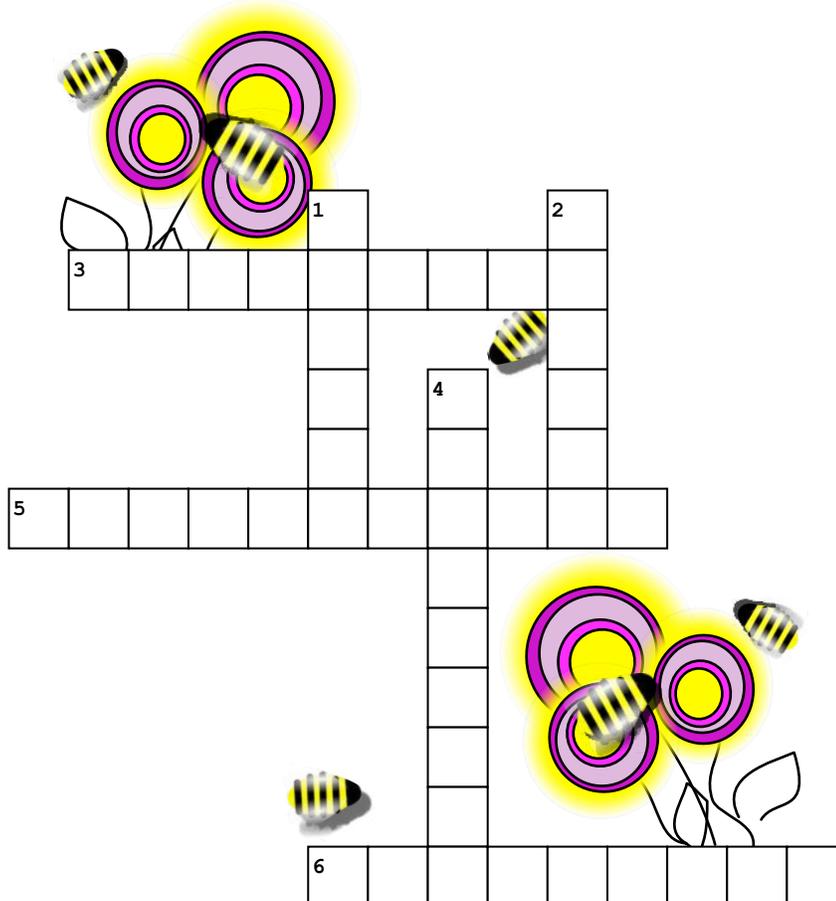


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The Bee's Knees Crossword

Here is a simple crossword with words from this art + activity packet. Enjoy!



Down

1. A powdery substance produced by plants necessary for reproduction.
2. A sugary liquid produced by plants, evolved to attract pollinators.
4. When two organisms interact and both benefit from that interaction,

Across

3. When an organism produces another individual of the same kind.
5. Animals that spread pollen.
6. When two organisms interact with, and affect, one another. This could be a harmful or a beneficial interaction.