

Build a Flower

Overview:

Springtime brings out all kinds of different flowers! This activity helps us consider how different types of flowers may appeal to different types of pollinators, and the function behind each type of flower's distinctive features.

Learning Objectives:

- Consider different common features of flowers and what function they might have with respect to attracting pollinating animals
- Appreciate the importance of pollinators to the ecosystem and the food supply
- Invent a new type of flower to attract a real or imagined pollinator



Activity Materials:

This activity could use any of several different types of materials depending on what you have available. The main important thing is to choose materials for flower construction that are age-appropriate and offer a variety of colors.

Choose one of the sets of materials listed below:

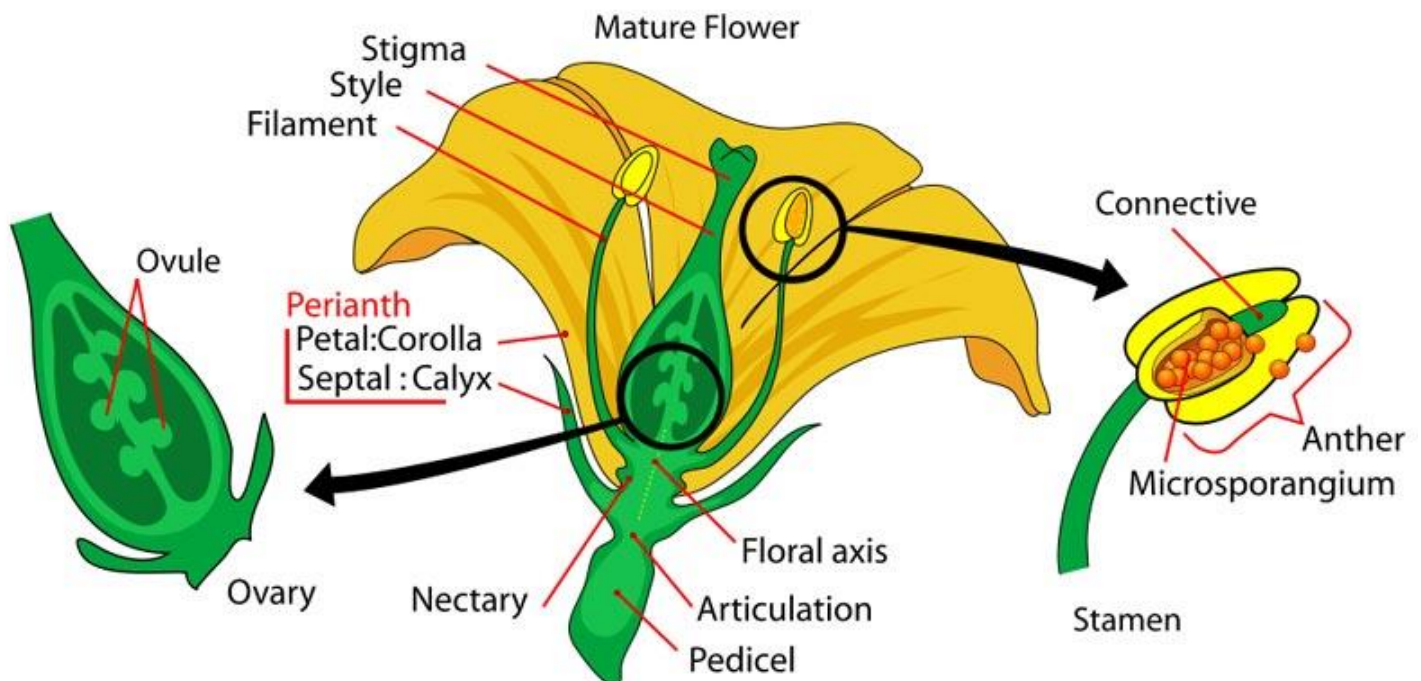
- Fabric such as felt, scissors, and hot glue or fabric glue
- Construction paper, scissors, and paper-safe glue
- White paper, scissors, glue, and coloring implements such as crayons, markers, paints, or colored pencils
- Sketch paper and drawing materials such as crayons, markers, colored pencils, pens, or paints
- Modeling clay, Playdough, or other shapeable material

Background:

To introduce the activity, talk to your child about different types of flowers they have observed in your daily life. What different colors, shapes, odors, textures, or other features do different flowers have? Consider the question, why do plants spend some of their energy to grow flowers, especially large or fancy ones?

Plants with flowers rely on pollinating animals to transfer their pollen from one flower to another, often from one plant to another, allowing them to be fertilized and make seeds that can grow into new plants. Pollinators are often attracted to flowers because they eat nectar, the sugary fluid produced by a plant and enclosed in the flower. Features such as bright colors and strong odors help pollinators find flower. Star-like shapes or streaks of contrasting colors on petals help guide pollinators to the center of the flower, where they will come in contact with pollen and find nectar. Different animals prefer different colors: birds and butterflies like red and orange, although they like other colors too. Bees cannot see red but can see ultraviolet as a color, and they like blue and yellow a lot. Night-flying pollinators like pale colors that are easier to see in the dark, and they like strong-scented flowers that are easy to find at night. Flies and some beetles like brown or green flowers that are smelly.

The cone-like shape of many flowers encourages pollinators to brush their heads past the pollen-carrying structures of the flower, called anthers, to get to the nectar at the base. Then as the pollinator visits subsequent flowers, some of this pollen will be transferred to the stigma of those flowers, which allows the ovary of the flower to be pollinated. Pollinators with longer mouthparts or tongues, like butterflies, can drink nectar from deeper flowers. Flies and other pollinators with wider or shorter mouthparts need to visit shallower flowers. Some flowers such as snapdragons use clever shapes to make sure that only certain pollinators can get into the flower to reach the nectar, making sure that other animals don't sneak past the pollen and get a free nectar snack.



Procedure:

- 1) Brainstorm a list of different types of flowers that you have seen or read about. Describe each flower—what is its color, its shape, its odor? Do you know what animals it might be pollinated by? Have you ever seen bees, butterflies, wasps, birds, or other pollinators visit the flower?
- 2) What kinds of animals can pollinate flowers? Make a list of as many as you can. Then look at the picture above together, or do some research together. Are there other pollinators that didn't come to mind right away, or that you didn't know about?
- 3) Make some educated guesses about what traits of different pollinators might attract them to different flowers. Talk about the background information together. Remember that even though pollinators do have preferences, they often have a wide range of flowers they will accept as well. At the end of the day, they are hungry like the rest of us!
- 4) Choose a pollinator that interests you the most, or invent an imaginary pollinator. What shape of flower could your pollinator get nectar from? What colors does it like, and what colors would likely be most visible to it? What scents might it like?
- 5) Design a flower that your pollinator would really like to visit and drink nectar from. Use your materials of choice to draw or construct your flower!

During/Follow-up Questions:

- Why do plants grow flowers?
 - *Flowers contain the structures that allow plants to grow seeds, and also act as advertisements that attract pollinators by offering highly visible colors, pleasant odors, and sweet nectar. This ensures that plants are pollinated.*
- What pollinator did you want to design a flower for and why?
 - *Children should share their thoughts on what different types of animals can pollinate, and recognize that different types of pollinators will prefer different flower characteristics.*
- Why did you design your flower to look the way it does? What would it smell like to your pollinator?
 - *Children should have some ideas about how the characteristics of the flower they invented would appeal to a specific pollinator, real or imagined.*