Pollination At-Home Lesson

We may be limited in our movements this month, but there is one thing that is certainly out and about in our communities and that is pollen! We have had a beautiful showing of flowering trees and shrubs this year which, to this plant appreciater, has been a blessing during this difficult time.

So what is going on? What is pollen and why do plants flower? Are they connected? Spring is a great time for children (and adults, too) to learn about plants. So let's get learning!

What is Pollination? (information for parents)

Pollination is the transfer of pollen by pollinators, wind, or other means. This process occurs when pollen, which is produced in the plant's male reproductive organ, or stamen, is exposed to the pistil found within the female's reproductive part. Once pollination takes place, seeds begin to develop. Pollination is an important part of a plant's life cycle, from flowering plants to non-flowering ones. Without pollination, most plants could not produce fruit or set seeds.

Pollination usually occurs naturally (open pollination), and most often as the result of insects, birds, and small mammals. The sticky pollen from flowering plants clings to their bodies, where it is carried from one plant to another. Honeybees carry out more pollination than any other insect, which includes ants, beetles, butterflies and moths. Birds are also responsible for pollination, especially hummingbirds. Small mammals, such as bats, are pollinators as well.

Pollination is also carried out by wind. Wind-blown pollen is normally dry and dust-like. Wind-pollinated plants are generally not as flashy as others are. These plants consist of feathery-looking flowers. Many trees and grasses rely on wind for pollination too. Occasionally, pollination can occur by other means. There are also some instances when people transfer pollen as they handle flowers in the garden.

There are two methods of pollination. Cross-pollination is the most common and occurs when the pollen goes from the stamen of one flower to the pistil of another flower. Self-pollination takes place when pollen is transferred from the stamen of one flower to the pistil of the same flower or plant.

1. Let's learn a little about plants. Start by asking what is a plant and if outside, looking for all different types of plants. If inside...maybe you have houseplants? You can also look at produce - what's a root, a stem, a leaf? Do we eat any flowers?

Here is a good video about plant parts to learn the basics.
Parts of a plant video from Peekaboo Kidz: https://www.youtube.com/watch?v=p3St51F4kE8

2. What are seeds and where do they come from? Are there seed factories? Look for seeds outside or open a piece of fruit if you are inside to discover the seeds.

What is pollination video from Science Explosion: https://www.youtube.com/watch?v=V5yya4elRLw

Activities:

Preschool through 2nd grade

Indoor: Give each child a picture of a group of flowers and have them color or have the children draw a picture of their favorite flower on a sheet of construction paper. (Make sure each flower has a circular center if they draw it themselves). Place some pollen (flour) in one of the flowers. Have the children fly the 'bee' (a cotton ball works well and you can attach a picture of a bee to the top with tape) and go from flower to flower. They should notice that the pollen (flour) transferred from the flower onto the bee and then to the other flowers.

Outdoor: Pollinator relay race. Place pictures of two flowers on the ground and have children visit the first flower for nectar and while there, pick up a spoon of pollen (can use corn or regular flour or sand) that has been poured on the flower and bring it to the second flower and then run back to the group.

2nd grade through 6th grade

Indoor: What role do flowers play (or, do they exist to make humans smile?)

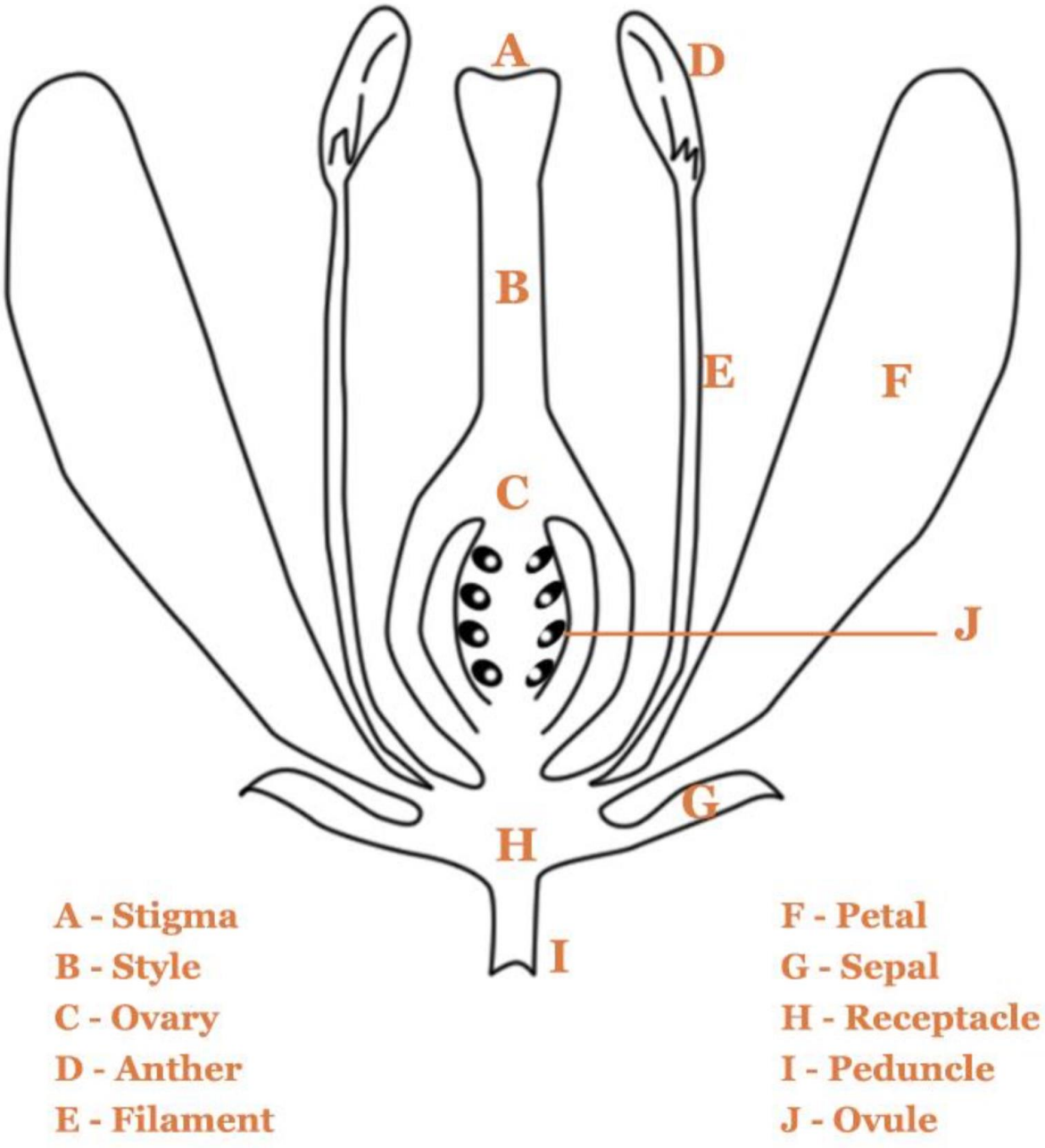
Flowers are highly adapted to attract their specific pollinators such as bees, flies, moths, hummingbirds, and bats just to name a few. This is why flowers are brightly colored and highly scented making them the beautiful creations that they are. The flower's "job" is to attract an insect pollinator to itself and once it has done that, it shrivels up and falls off. Explain how various insects are attracted to specific flowers through color, fragrance, and shape. The color or markings of a particular flower help attract and guide insects to them for pollination. For instance, bees are oftentimes attracted to bright blue and violet colors. Hummingbirds are often seen on red, pink, fuchsia, or purple flowers. Butterflies also enjoy bright colors such as yellow, orange, pink and red as well as fragrant ones.

A flower's fragrance is another method of attraction, especially at night when moths and bats are out. The way in which a flower is shaped also attracts pollinators. For instance, butterflies prefer those having flat petals that act like a landing strip for them to sit on. Long, tubular flowers attract hummingbirds as their long beaks can easily fit into the flower when gathering nectar.

Parts of a flower video from Learning Junction: https://www.youtube.com/watch?v=SiFaN2xQg5g

Let's see if we can label some plant parts:

Parts of a Flower – Labelled



Outside Pollination Activities:

Go on a flower hunt to notice the different colors, shapes, sizes and smells. Count how many different flowers you see. You can also divide the different types of flowers into groups by color, shape, size (use your index finger for comparison.) Look for insects and other animal pollinators. Bring a sketch pad and draw what you see. Once at home you can use online resources to identify any unknown pollinators.

Awbury Arboretum
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