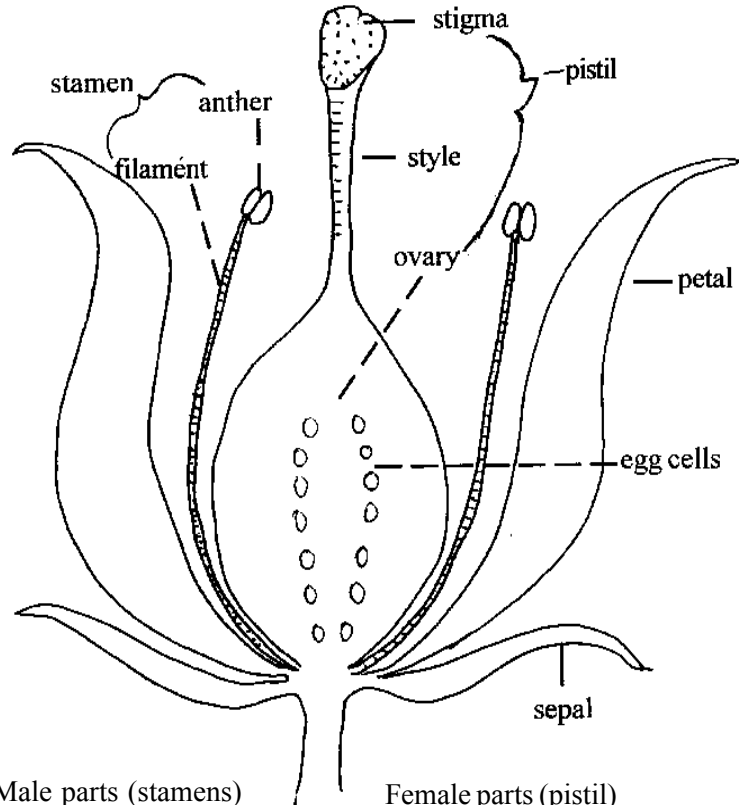


# STUDENT HANDOUT - BATS, BEES, BIRDS AND BLOSSOMS

## What is a Flower?

Everybody loves a flower, right? The cool shapes, wonderful colors, and sweet smells are all there for us to enjoy. But do you know the real purpose of a flower? A flower is the part of a plant where seeds are made. It is a plant's **reproductive organ**.

Flowers have male and/or female parts. The male parts make **pollen grains**, and the female parts make **egg cells**. Look at the diagram and study the plant parts.



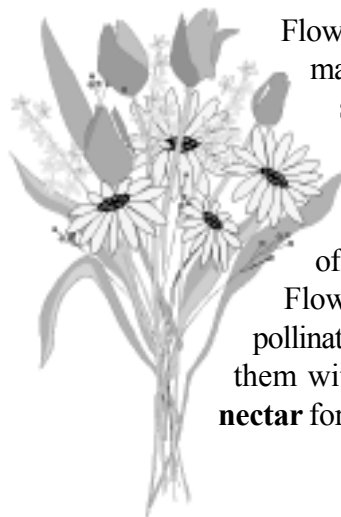
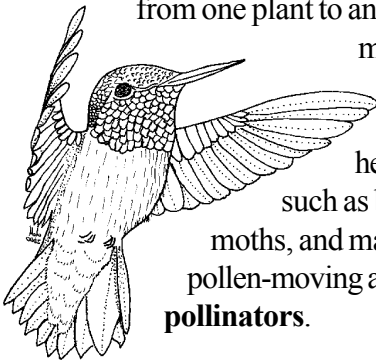
Male parts (stamens)  
anther (makes pollen)  
filament

Female parts (pistil)  
stigma  
style  
ovary (eggs inside - turns into a fruit)

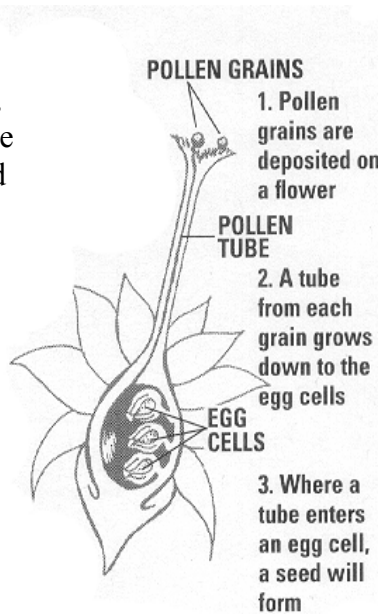
## What is Pollination?

Pollen from one flower needs to reach the stigma of another flower before the plant can make seeds. Since plants cannot get up and move around, they need help moving their pollen.

Sometimes the wind blows pollen from one plant to another, but most flowering plants need help from animals such as bees, butterflies, moths, and many others. These pollen-moving animals are called **pollinators**.

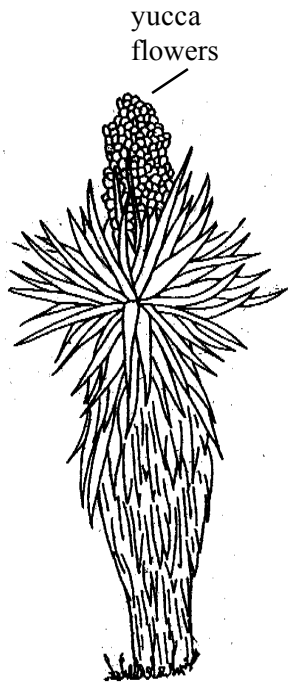


Flowers come in many shapes, sizes, colors, and scents to attract many different kinds of pollinators. Flowers also reward pollinators by providing them with sweet, nutritious **nectar** for food.



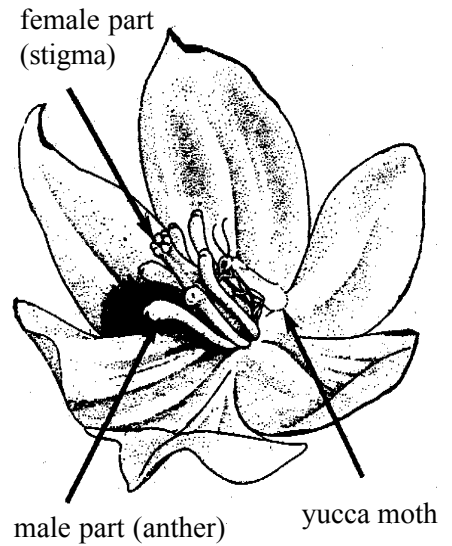
- POLLEN GRAINS**  
1. Pollen grains are deposited on a flower
- POLLEN TUBE**  
2. A tube from each grain grows down to the egg cells
- EGG CELLS**  
3. Where a tube enters an egg cell, a seed will form

Pollen is the powdery, sometimes sticky stuff found on the anthers of the flower. Have you ever gotten pollen on your hand when you touched a flower? When pollinators visit flowers in search of nectar and pollen to use as food, some pollen sticks to their bodies. They carry this pollen to the next flower they visit. Some pollen rubs on the female part of the plant. This is called **pollination**. If both flowers are the same species, a tube grows from the pollen grain to an egg cell inside the flower. Where a tube enters an egg cell, a seed will form. A fruit will form around the seed. Without pollination, there would be no seeds and fruits!



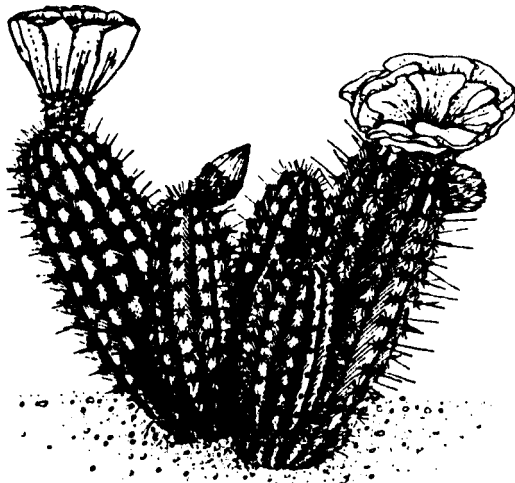
### The Secret World of Yucca Moths

An amazing example of pollination from the southwest U.S. and neighboring Mexico is that of the yucca and the yucca moth. In the spring, yuccas send up big stalks covered with many white flowers. Yucca moth females climb into the yucca flower, carrying pollen grains from a yucca they just visited. They put pollen on the female part of the flower, pollinating the flower to be sure seeds form. Then they lay their eggs on some of the baby seeds. When the moth caterpillars hatch, they eat some yucca seeds, but leave other seeds to grow. Without the moths directly putting the pollen in the right place on the flower, the yucca would not make seeds. It has no other pollinator. Likewise, the yucca moth depends on the yucca for food and shelter for her babies. She does not lay her eggs on any other kind of plant. The pollinator and the plant need each other. If one disappears, the other probably would, too.



### Why is Pollination Important to Us?

Almost all of the world's flowering plants need an animal pollinator to help them make seeds and fruits. But pollinators aren't just important to the plants they pollinate. Many of our foods and medicines come from plants pollinated by insects and other animals. Next time you take a bite of an apple or a piece of chocolate, thank a pollinator!



### How Can We Help Pollinators?

Some of our honeybees and wild pollinators are disappearing. Chemicals sprayed on plants to kill harmful insects sometimes kill helpful pollinators, too. And as people clear more natural deserts and grasslands for cities and farms, pollinators lose their homes and the wild plants they need for food.

We can help save pollinators. How? By planting a pollination garden! We can grow native flowering plants that attract everything from birds and bees to butterflies and moths. Pollination gardens provide food and homes for pollinators. And, if you plant a vegetable garden along with your pollination garden, your visiting pollinators will help you grow juicy, sweet vegetables and fruits! Not a bad trade, huh?