Wildflower Exploration: Directions for Flower Dissection Activity

Materials: Print the Four Parts of the Flower sheet below. For this lesson you need Elmer's glue or scotch tape. You also need a flower but ask for permission before you pick one from a garden. Please don't pick any native woodland flowers as some are protected by law. If a simple-looking flower isn't available, find close-up pictures of flowers to observe. A hand lens is optional.

Directions: In this activity we are going to study the flower to help us understand why plants put so much energy into making flowers and how the flower parts work together to accomplish their goal. Observe your flower. What do you notice? How many different parts do they have? How do they smell? Do you see any interesting lines? What is in the center? You are going to dissect a flower—taking it apart very carefully as you study the parts. Flower parts are arranged in whorls—a circular pattern of attachment. Typical flowers have four whorls: sepals, petals, stamens and pistil. Turn your flower upside down to begin this dissection.

Sepals are the outside whorl that protects the flowers inside parts from drying out and insect damage. If you look at a flower bud, what you see are the green sepals. In some flowers the sepals fall off as the flower opens. Other flowers have sepals that stay attached remaining small and green. In some flowers the sepals grow in size and become colorful and petal-like to help the petals do their job. Carefully take off the outside whorl of sepals and put them in the sepals' box.

Petals are the next whorl as you look at a flower upside down. You recognize the petals as the colorful part of a flower. Why do flowers have colorful petals? Colorful petals attract and guide insects and other pollinators to the flower. Plants can't move their own pollen around so they attract animals--mainly insects--to do the pollen moving for them. Insects and other animals are lured in by color of petals, pollen, and nectar if available. There is lots of variety in petal color, shape, markings, and odor depending on what pollinator they are attracting. So here is a question I want you to think about: "What color would the petals be if your flower is wind pollinated?" Now carefully remove the petals and put them in the petals' box.

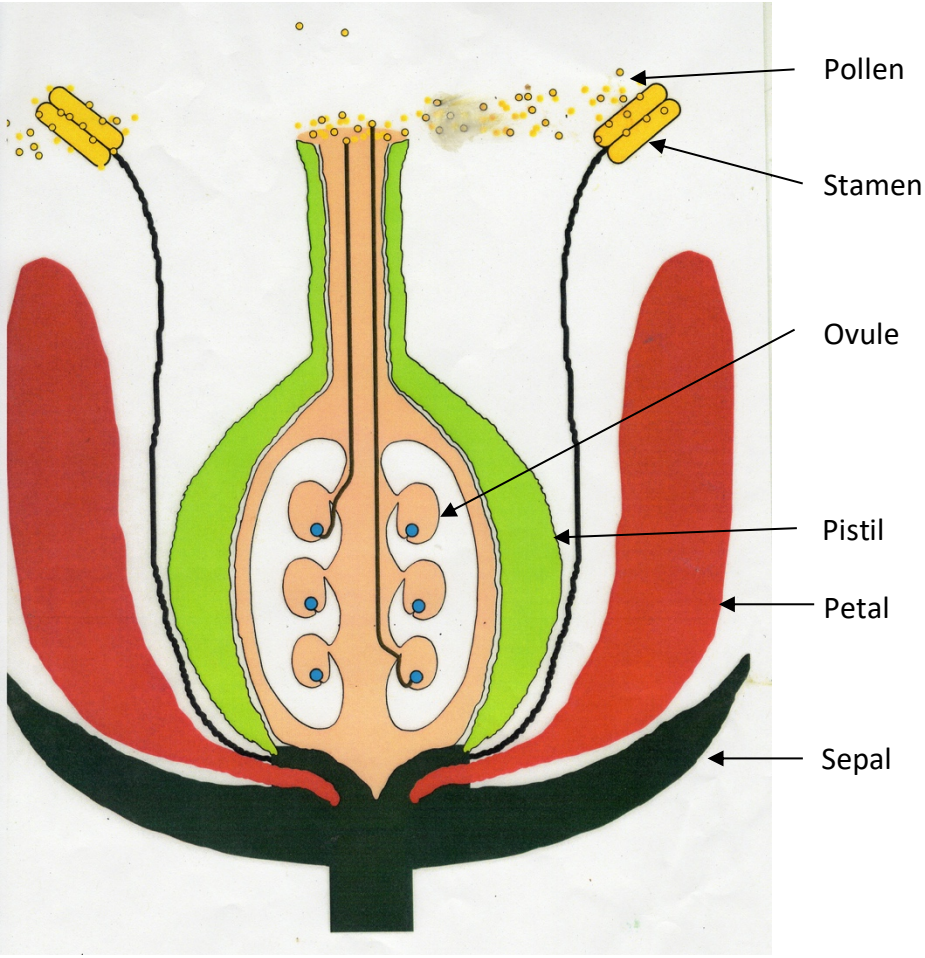
Stamens are the next whorl. They are the male part of the flower called stamens. Did you know that plants have male parts? Sta**men**s has the word men in it so that helps you remember that stamens are the male parts. What do you think stamens produce? These male parts produce pollen and you might see the pollen grains attached to the top of the stamens. Pollination happens when pollen is moved to the female part of the flower and it works best if moved to another flower of the same kind. Carefully pick off the stamens being careful not to remove the middle part that we will look at next. Put the stamens in the stamen box.

Pistil(s) are in the center of a flower and are the female part of the flower. Do you know what the pistil grows into? The pistil grows into a fruit that contains the seeds. So the purpose of the flower to make seeds protected in a fruit! As an insect or other animal searches for pollen or nectar it often crawls over the top of the pistil dropping pollen by accident. Pollen is alive and a tube grows down the pistil to its base called the ovary. Can you see the swelling in the base of the pistil? Inside the ovary are ovules that grow into seeds when fertilized by the male cells that move down inside the pollen tube to reach these ovules. The cells from one pollen grain can fertilized one ovule. The ovary develops into the fruit protecting the developing seeds and then often helps with seed

dispersal—moving the seeds away from parent plant. The four parts of a flower work together to make a fruit that contains the developing seeds.

Open the base of the pistil with your fingernail and look closely at the cross section with your hand lens. Can you see the ovules that will turn into seeds? Put your cut pistil in pistil box.

Glue all the parts in the correct box and compare this flower's parts to other flowers you see.
Optional: Dissect a flower bud and use the center circle to glue the parts. Can you find all four parts of a flower in miniature inside the bud?



Four Parts to a Flower

KDT Wildflower Exploration at Cornell Botanic Gardens

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Name

Vegetative Parts

2

Petals

Reproductive Parts

3

Stamens

1

Sepals

4

Pistil

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