Reproduction in Flowering Plants

Flowering plants generate pollen, ovules, seeds, and fruit.

Normally, we associate flowers with a nice smell.

- But one type of flower, called a carrion flower, smells like rotting flesh.
- The smell of the carrion flower attracts flies.

When flies crawl into the stinking flower looking for a meal, they brush up against the anthers of the flower which contain pollen.

- The flies fly out, carrying the pollen with them.
- When they land on another carrion flower, they brush up against the stigma and leave pollen behind!

Angiosperms—the flowering plants, were the last of the seed plants to evolve.

- They appeared around 100 million years ago during the age of the dinosaurs and probably descended from a gymnosperm (cone-bearing) ancestor.

A magnolia is a primitive angiosperm.

Can you see the resemblance of the magnolia’s fruit to the cone of a gymnosperm?
What are flowers?
Let’s examine what Bill Nye has to say.

- A flower is the reproductive organ of angiosperms.

Flowering plants reproduce by pollination, the transfer of pollen, containing sperm, to the female part of the flower.
- Since plants cannot move, they have evolved adaptations to ensure successful pollination.
- In many plants, the sperm from one plant must fertilize the egg of another plant.
- This ensures genetic variation.
Over millions of years, a variety of flowers have evolved, many with unique adaptations for pollination.

- Some involve insects or birds while others involve wind, gravity, and other factors.

Today, there are about 250 million species of flowering plants—more than any other group of plants.

Many flowers are beautiful and are used to celebrate important events.

- But as far as plants are concerned, flowers are used for one purpose: sexual reproduction.

Arrangement of flower parts

- The flower parts are usually arranged in a ring around the female parts of the flower, called the pistil.

Sepals make up the bottom ring of flower parts and are modified leaves.

Petals are the colorful part of the flower (sepals are sometimes colorful too).

- Petals often help the plant reproduce by attracting insects or birds.
- The petals of the carrion flower are red and spotted and resemble rotting flesh!
Male flower parts

The male part of the flower is called the stamen.

The stamen consists of the anther, pollen, and filament.

Pollen
Anther
Filament

The filament is a thin stalk that holds an anther.
- Each anther produces grains of pollen.
- Pollen is the reproductive spore that contains sperm cells.

Female flower parts

The female part of the flower is called the pistil.
- The pistil consists of the stigma, style, ovary, and ovules.
- A flower may have one or more pistils.
- They are usually in the center of the flower.
The tip of the pistil is called the stigma.

- The stigma attracts and holds grains of pollen.
- Stigmas are often sticky or feathery.

Below the stigma is the style.

- The style connects the stigma to the ovary.

The ovary is located at the base of the pistil and contains one or more ovules.

- Each ovule contains one egg cell.
- If fertilization occurs, each ovule develops into a seed and each ovary develops into a fruit.