

Part 3-A

What is Pollination?

Mutualism: The association between organisms of two different species in which each benefits.

Britannica.com

Why Do We Need Pollinators?

With attractive and varied shapes of flowers, multiple colors and fragrances, plants lure pollinators. Without pollinators, few of earth's terrestrial ecosystems would survive; we humans would have a dull diet of just the wind-pollinated crops, like corn.

Pollination is provided by animals, mostly insects, for roughly 80% of the 1,400 crop plants grown around the world.

Effective pollination allows plants to produce enough seeds for dispersal and propagation, helps maintain genetic diversity for the species, and helps develop fruits that attract animals to disperse the seeds.



Photo Credit: ABC News

How Do Bees Carry Pollen?

Bees, such as this bumblebee, have small, branched hairs, that electrostatically attract pollen grains. Some bees have hairy abdomens; some (like honeybees) have hairy legs; some have hair on top of their heads; some bees have special sacks for storing and transporting pollen; and some carry pollen in their jaws.

How Does Pollination Work¹?

Pollination is the start of the reproductive process in flowering plants. While pollination can be done by wind or water, most plants require the help of an animal to do the job.

A bee (or other pollinator) picks up a grain of pollen from the coating of the *anther* of the *stamen* (male) part of the flower then transfers it to the *stigma* at the end of the *pistil*

(the female part of the flower) of the same flower (self-pollination) or to the stigma of another plant of the same species (cross-pollination).

Once a pollen grain is placed on the sticky stigma, a pollen tube grows from the grain to reach the ovule. Two sperm nuclei then pass down the pollen tube to reach the ovule. One of them unites with the egg nucleus and produces a zygote that develops into a plant embryo. The other sperm nucleus unites with two polar nuclei to produce an endosperm nucleus. The fertilized ovule develops into a seed.

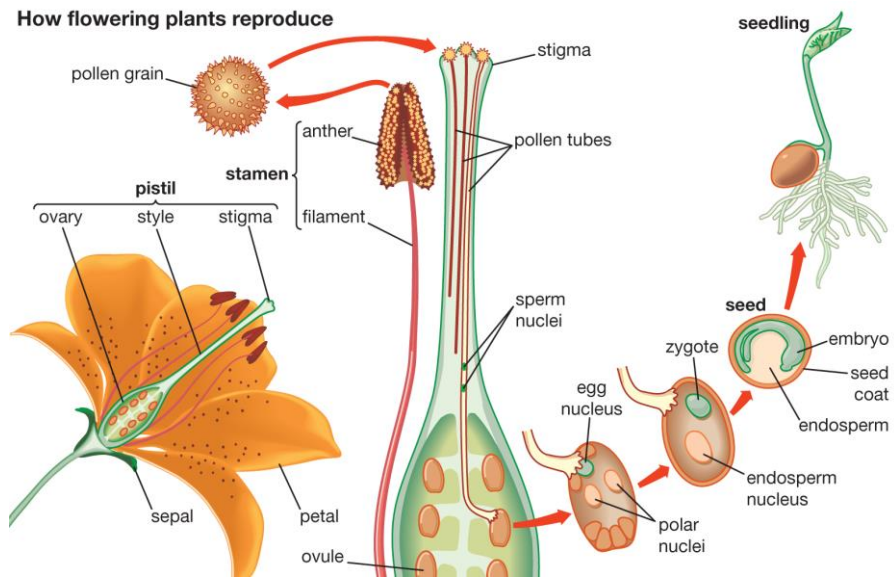


Diagram: Encyclopedia Britannica - on line

For more information on this topic, see USDA Forest Service [pollination information](#).

¹ Encyclopedia Britannica on-line has a wealth of information about pollination details, including a media slide show with links to excellent videos related to pollination. NOTE: many of the plants mentioned on this site are not native in USA: <https://www.britannica.com/science/pollination>.