

Genetics and Heredity

Cluster One: REPRODUCTION

Inquiry #3: SEXUAL REPRODUCTION

(3 instructional periods)

Concept: “Reproduction is a characteristic of all living systems; because no individual organism lives forever, reproduction is essential to the continuation of every species” (NSES, pg. 157). “In sexual reproduction, a single specialized cell from a female merges with a specialized cell from a male” (AAAS, pg. 108). “The egg and sperm are produced in the flowers of flowering plants. An egg and sperm unite to begin development of a new individual” (NSES, pg. 157).

Objective: Students will be able to describe the process of pollination and fertilization in flowering plants.

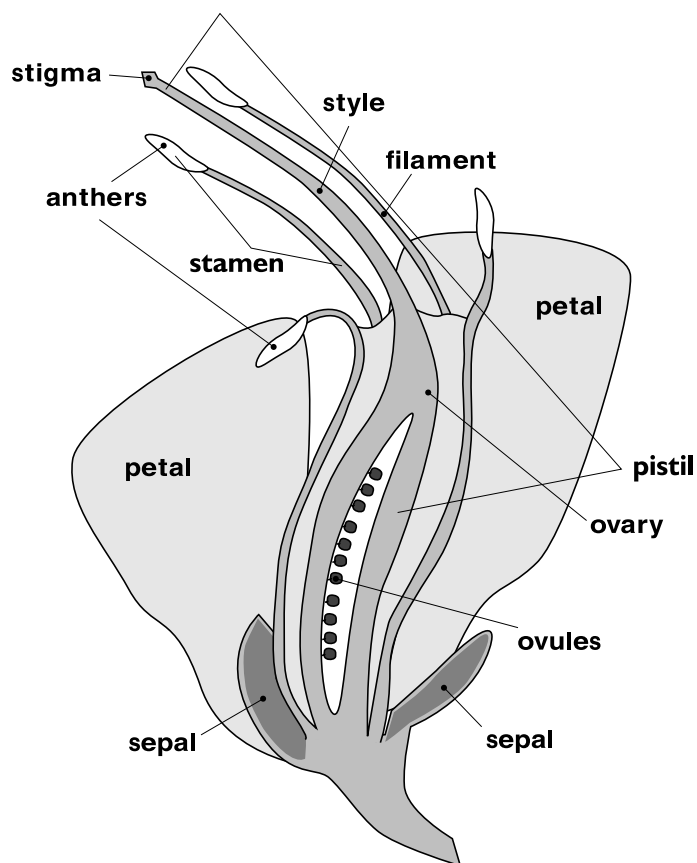
Summary: Students will dissect and observe the structures of a flower. They will locate the male and female reproductive structures on a diagram and label each structure. They will read about sexual reproduction in flowering plants. They will use the information in the reading to complete a sequence chain on the steps of pollination and fertilization in flowering plants.

Teacher Background: Some flowers contains both male and female reproductive structures.

The female part is called the pistil and has a sac at its base called the ovary. The ovary contains the egg cells (ovules). The top of the ovary is the style, a long tubular column that has a sticky top called the stigma. The stigma's stickiness allows it to retain any pollen that lands. The pistil is surrounded by the male parts of the flower, called stamen.

Each stamen has a long, thin stalk, called a filament that is topped by an anther.

The anther is a swollen sac filled with pollen.



In sexual reproduction, the contribution of genetic information from two different parents results in new individuals whose genetic composition is different from either parent.