

Strand: Life  
Unit 1: Plants  
Topic: Reproductive Parts  
of a Flowering Plant

GRADE 6 SCIENCE





# OBJECTIVES

- Identify the reproductive parts of a flower and examine their functions.
- Describe and analyze the sexual reproduction process of flowering plants such as pollination, fertilization, and seed dispersals.

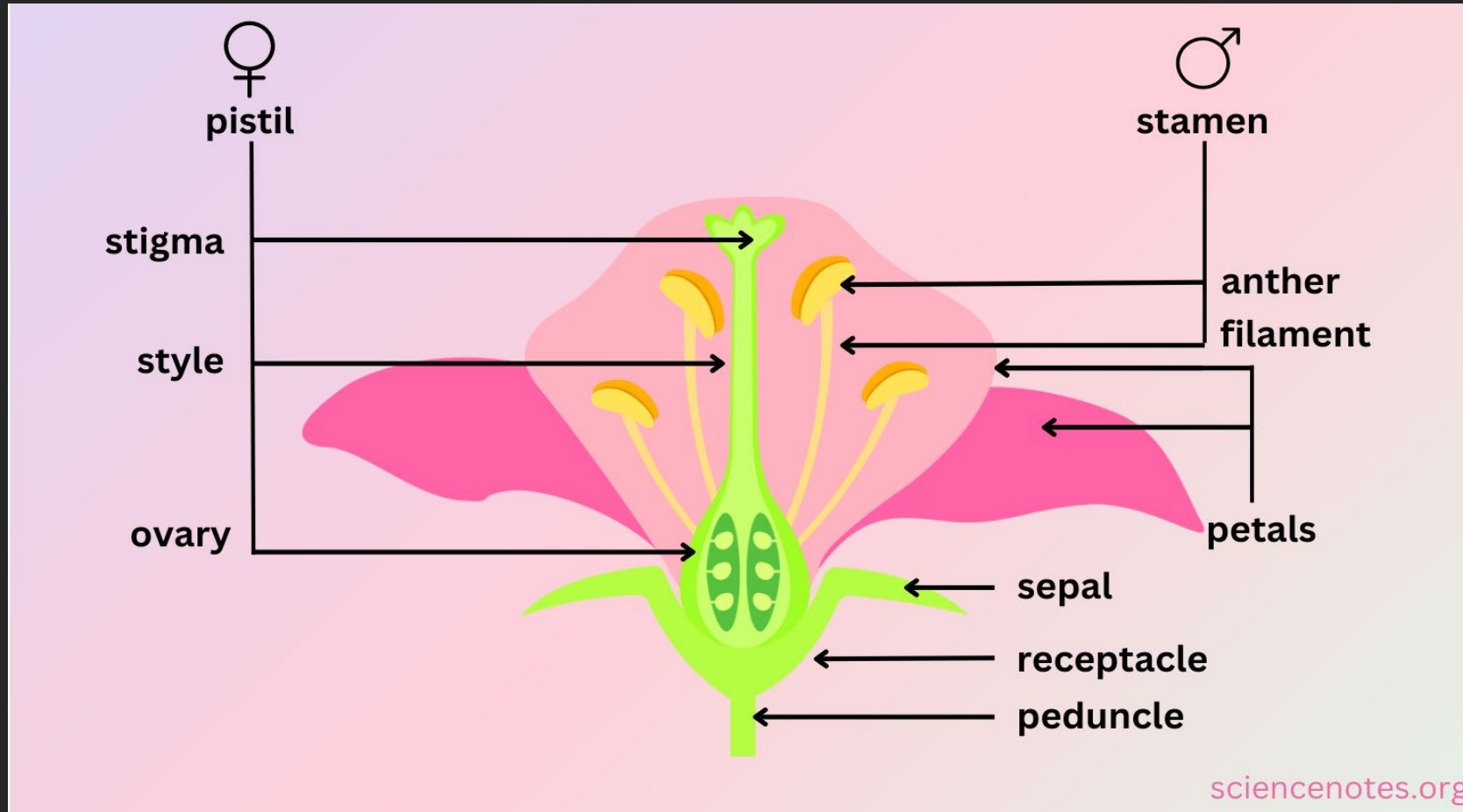


# Reproductive Parts of a Flowering Plant

- A flowering plant, also known as an angiosperm, is a type of plant that produces flowers as part of its reproductive structure. Flowering plants are the largest and most diverse group of plants on Earth, with over 300,000 known species.



# Reproductive Parts of a Flower





# Stamen

- The stamen is the male reproductive organ of the flower.
- Consists of two parts:
  - Anther: Produces pollen grains containing sperm cells.
  - Filament: Supports the anther and positions it for pollen dispersal.





# Pistil or Carpel

- The pistil is the female reproductive organ of the flower.
- Consists of several parts:
  - Stigma: Receives pollen grains.
  - Style: Connects stigma to ovary, allows pollen tube growth.

Ovary: Contains ovules with egg cells.

# Functions of Reproductive Parts of the Plants



**Stigma**

**Anthers**

+

**=Stamen**

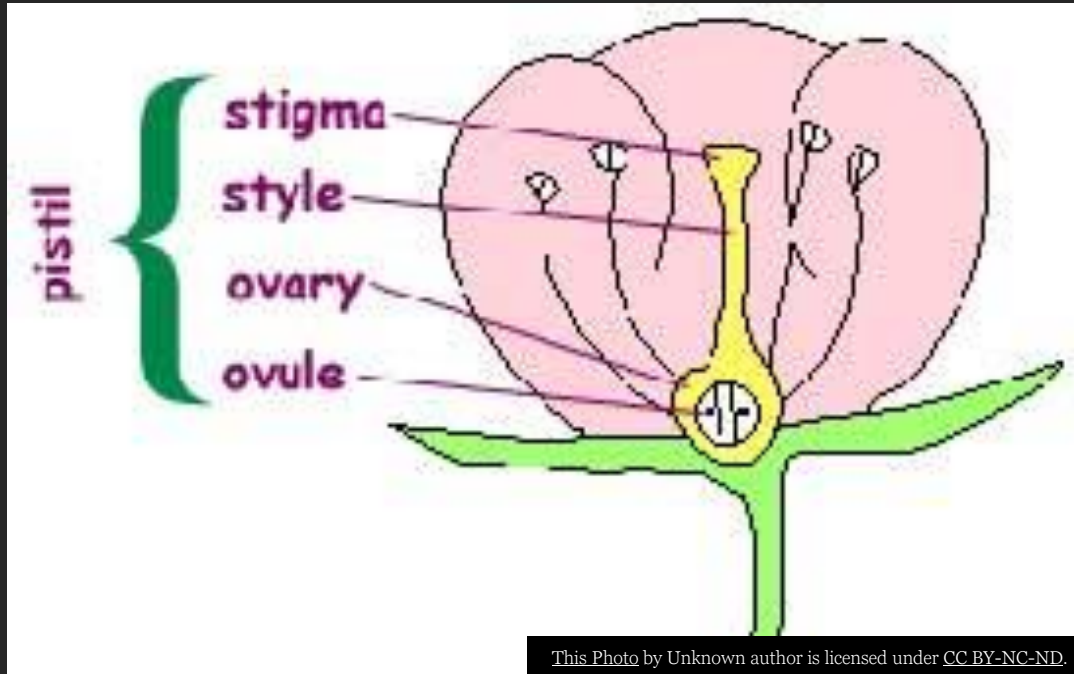
**Filaments**

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# Stamen

- Anther: Produces pollen grains containing sperm cells.
- Filament: Supports the anther and aids in pollen dispersal.





# Pistil or Carpel

Stigma: Captures pollen grains.

Style: Provides a path for pollen tubes to reach the ovary.

Ovary: Contains ovules with egg cells.

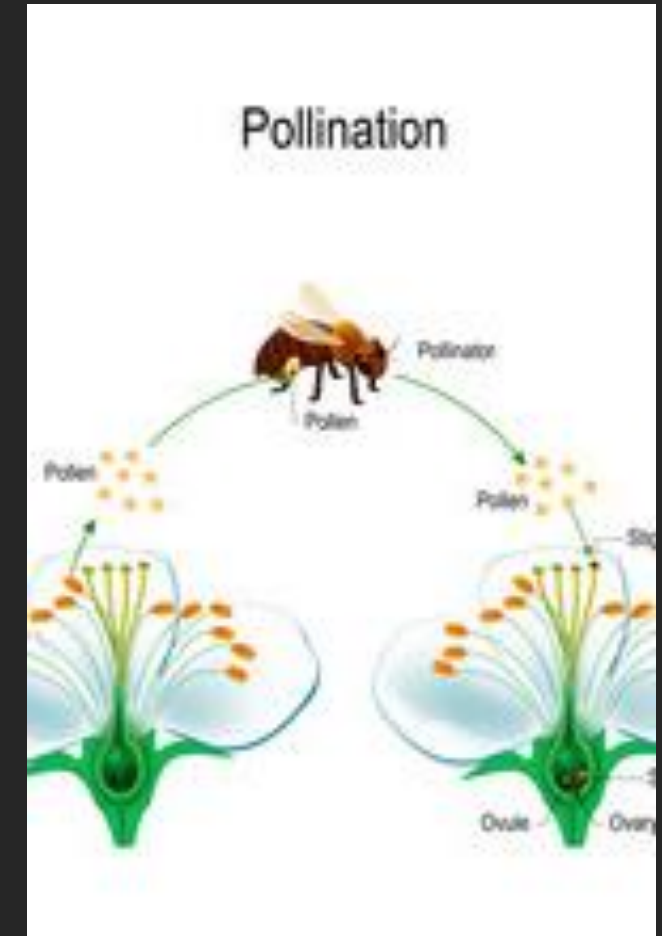


# Process of Reproduction

- POLLINATION
- FERTILIZATION
- SEED DISPERSION

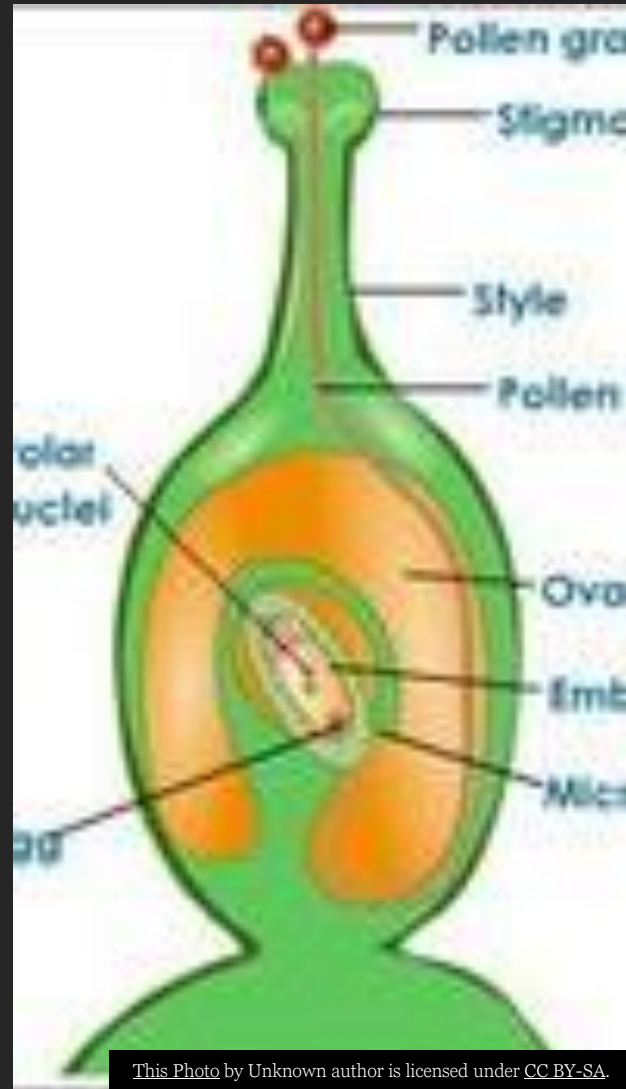
# Pollination

- The interaction between male and female reproductive parts allows for pollination, which transfers sperm cells to the female reproductive organs.
- Definition: Pollination is the transfer of pollen grains from the anther to the stigma of a flower.
- Methods of Pollination:
  - Wind Pollination: Some plants release lightweight pollen grains into the air, and they are carried by wind to other flowers.
  - Insect Pollination: Flowers attract insects with bright colors, fragrances, and nectar. Insects carry pollen grains on their bodies as they move from flower to flower.
  - Bird and Mammal Pollination: Certain flowers have adaptations to attract specific bird species or mammals like bats, which carry pollen between flowers.





# Fertilization



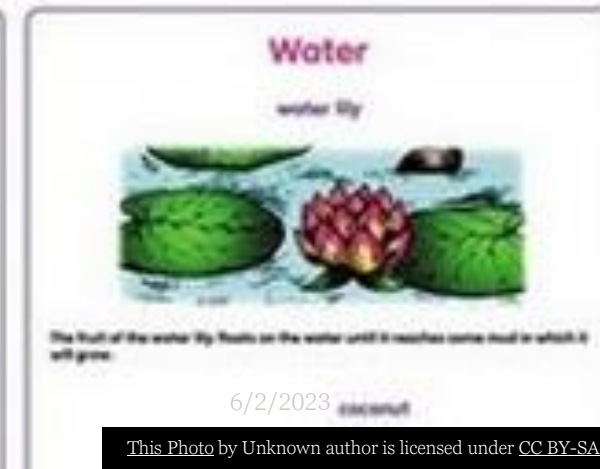
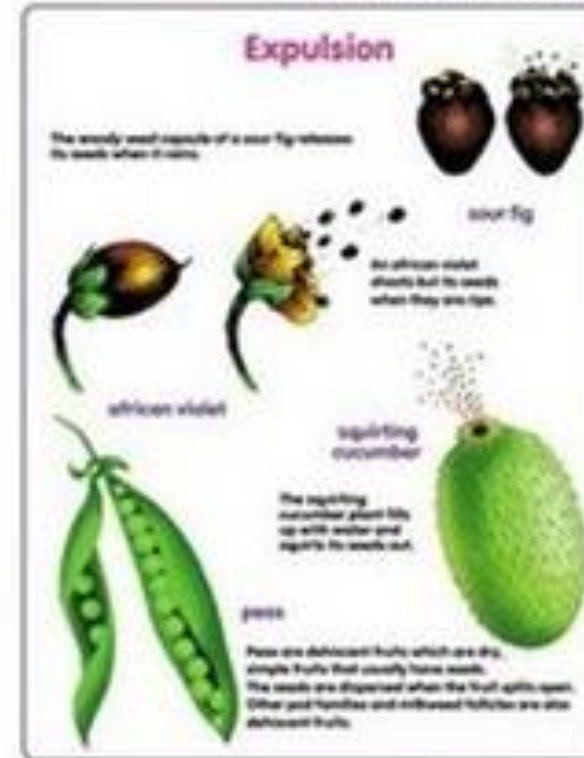
- Fertilization is the fusion of male and female gametes, resulting in the formation of a zygote and the subsequent development of seeds. The process of fertilization in flowering plants involves the following steps:
- Pollen Germination: When pollen grains land on a receptive stigma, they absorb moisture and germinate. A pollen tube grows down through the style, which connects the stigma to the ovary.
- Pollen Tube Growth: The pollen tube continues to elongate through the style until it reaches the ovary. Inside the pollen tube, there are two sperm cells.
- Double Fertilization: When the pollen tube reaches the ovary, it enters the ovule. One sperm cell fuses with the egg cell, resulting in the formation of a zygote. This zygote develops into an embryo, which will eventually become a new plant. Meanwhile, the other sperm cell fuses with two polar nuclei in the ovule, forming endosperm, a nutrient-rich tissue that nourishes the developing embryo.

# Seed Dispersion

- Seed Dispersal: After fertilization, the ovary of the flower develops into a fruit, enclosing the seeds. Seed dispersal is crucial for the spread and survival of plant species. Various methods of seed dispersal include:
- Wind Dispersal: Some plants produce lightweight seeds with structures like wings or hairs that allow them to be carried by the wind. Examples include dandelions and maple trees.
- Water Dispersal: Seeds of certain plants have adaptations to float on water. They are dispersed by rivers, streams, or ocean currents. Coconuts are a classic example of water dispersal.
- Animal Dispersal: Many plants entice animals to eat their fruits. The seeds pass through the digestive system of the animal and are deposited far from the parent plant, along with a packet of fertilizer. Animals also disperse seeds by carrying them on their fur or feathers. Burdock seeds have hook-like structures that easily attach to animal fur for dispersal.

## Seed dispersal

Seeds can be dispersed in various ways.



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# Conclusion

- By undergoing pollination, fertilization, and seed dispersal, flowering plants ensure genetic diversity, successful reproduction, and the colonization of new habitats. These processes contribute to the survival and proliferation of flowering plant species.
- In summary, the male parts (stamen) produce pollen, while the female parts (pistil) receive the pollen and develop into seeds. Pollination brings pollen to the female parts, and fertilization occurs when sperm cells from the pollen unite with the egg and polar nuclei. The fertilized ovule develops into a seed within a fruit. The seed can then be dispersed and, when conditions are right, germinate to give rise to a new plant.