

# Chapter 2: Sexual Reproduction in Flowering Plants

## Flower Structure:

**Male reproductive part:** Stamen (consists of anther & filament).

**Female reproductive part:** Pistil (consists of stigma, style, and ovary).

**Pollination:** Transfer of pollen from anther to stigma.

**Self-Pollination:** Pollen transfer in the same flower or between flowers of the same plant.

**Cross-Pollination:** Pollen transfer between flowers of different plants.

**Agents of Pollination:**

Wind, Water, Animals (including insects, birds, and bats).

**Outbreeding Devices:** Mechanisms to prevent self-pollination & promote cross-pollination, e.g., unisexuality, dichogamy, heterostyly, and self-incompatibility.

**Double Fertilization:** Unique to angiosperms.

One sperm cell fuses with the egg (syngamy) to form the diploid zygote.

The other sperm fuses with two polar nuclei to form the triploid primary endosperm nucleus (PEN).

Post Fertilization Events:

**Formation of Endosperm:** From the primary endosperm nucleus.

**Formation of Seed:** Zygote → embryo;  
Ovules → seeds.

**Formation of Fruit:** Ovary develops into fruit .

**Apomixis:** Asexual reproduction but seeds are formed without fertilization.

**Polyembryony:** Formation of more than one embryo in one ovule.

**Parthenocarpy:** Formation of fruit without fertilization.

**Special Cases:**

**Parthenogenesis:** Development of the egg without fertilization into a new organism.