

Flowering Plants Notes

Not all plants flower, but many do. The purpose of the flower is for plant reproduction.

The Flower's Anatomy and Physiology (see attached page) are designed to allow reproduction to happen and protect the growing embryos in seeds.

For a flower to reproduce, it must be pollinated.

Different Ways Flowers Are Pollinated:

- 1) Self -Pollination = pollination by pollen from the same flower or a flower on the same plant
- 2) Cross -Pollination = pollination by pollen from a different plant

Methods of Pollination:

- 1) Wind = Less specific and less "expensive" ^{= doesn't "cost" the plant} any energy
- 2) Attracting animals = more specific and more "expensive". To attract the right pollinator, plants have developed certain:

a) Petal Colors

- i) Red and yellow attract butterflies and birds
- ii) white attracts moths and bats
- iii) Ultraviolet (UV) attracts bees

b) Scents

- i) Attractive smells (depends on the animal...)
- ii) Mimic Pheromones

c) Rewards

- i) Nectar
- ii) Pollen
- iii) Housing ~~bees~~ safe harbor

d) Shapes of Flowers

Ex. Hummingbirds and honeysuckle

Fertilization and Development of the Seed:

- 1) Pollen (containing sperm) from the anther is deposited on the stigma, which is covered in a sticky residue to trap the pollen
- 2) The pollen cell elongates and grows down through the style to the ovary, where it fertilizes the ovule (egg).
- 3) The fertilized ovule develops into the seed = embryo + food + seed coat
 - a) Embryo = the baby plant
 - b) Endosperm = stored food (starch) for the embryo to get started
 - c) Seed Coat = Hard, protective coat that helps keep the seed dormant until it's the right time to grow
- 4) The ovary develops into the fruit around the seed.
 - a) Allows the seed to be consumed and then "deposited" by an animal in a pile of fertilizer (poop)

Types of Fruits:

- 1) Dehiscent (dry) Fruits = fruit that splits open once dried to release seeds (peas)
- 2) Indehiscent Fruits = fruits that need to be cracked open once dry to disperse its seeds (sunflower)
- 3) Fleshy Fruits = fruits that consist largely of soft, succulent tissue (apple)

***Bottom Line: Fruits are any plant part that contains seeds !**

How Seeds are Dispersed:

- 1) Wind
 - a) wings
 - b) parachutes
- 2) Animals
 - a) Carry hooked fruit
 - b) Eat fleshy fruit and nuts
- 3) Water
- 4) Gravity
- 5) Ballistic Dispersal