Reproduction in Flowering Plants



Mrs. Zemcik

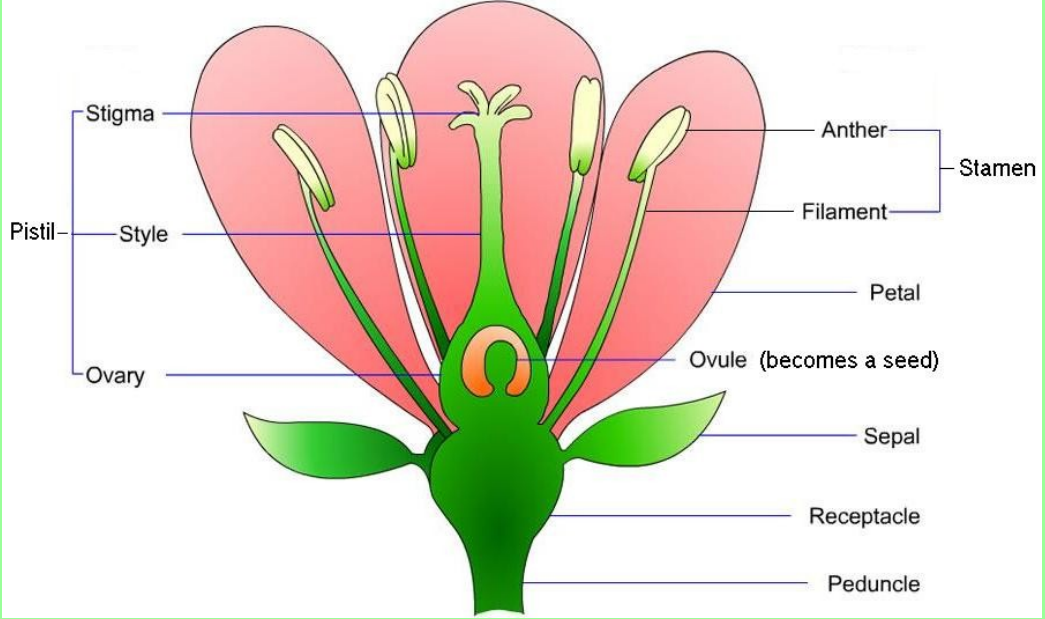
Living Environment

Flower

- Sexual reproductive structure
- Produces egg and sperm
- Fertilization takes place inside the flower



Female reproductive organ



Male reproductive organ

Pistil

*Stigma –top of the pistil,

Sticky surface for pollen to stick to

*Style – connects the stigma to the ovary

*Ovary –contains ovules

(eggs)

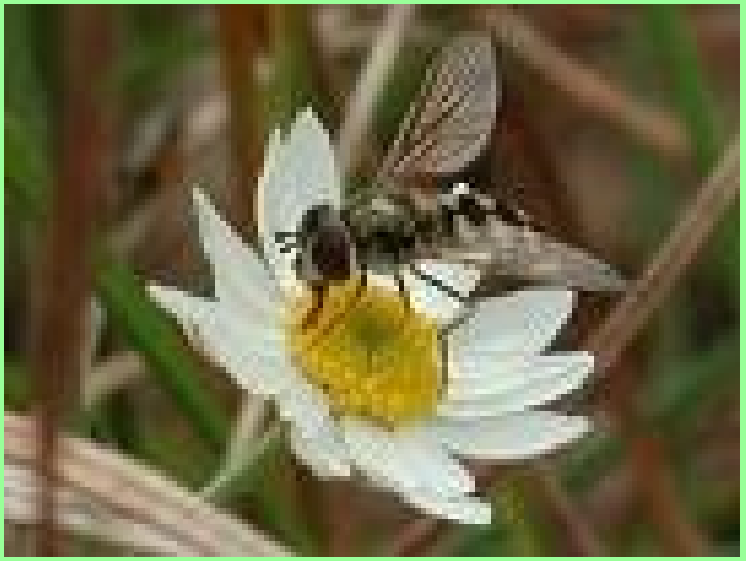
Stamen

*Anther – produces sperm nuclei by meiosis. Sperm nuclei are enclosed by pollen grains.

*Filament – holds the anther up

Pollination

- Transfer of mature pollen grains from the anther to the stigma
  - -wind
  - -insects
  - -birds & other animals







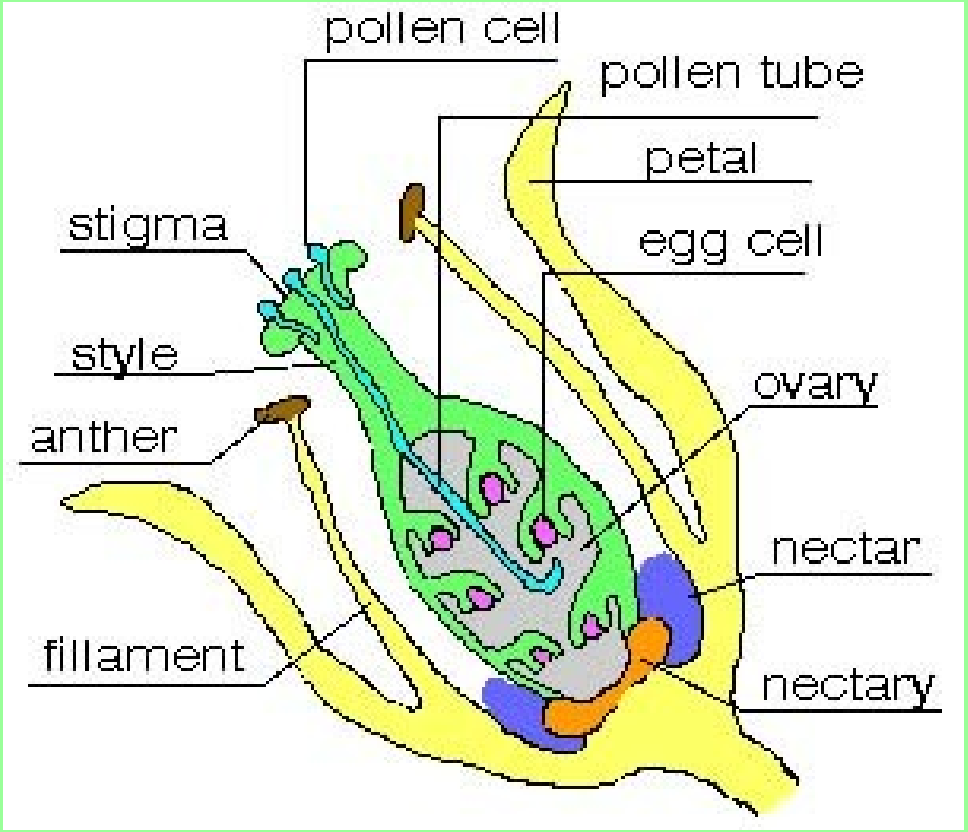
Pollination

One part of the flower called the "ANTHER" makes pollen.

Another part of the flower, called the "PISTIL" leads to the eggs.

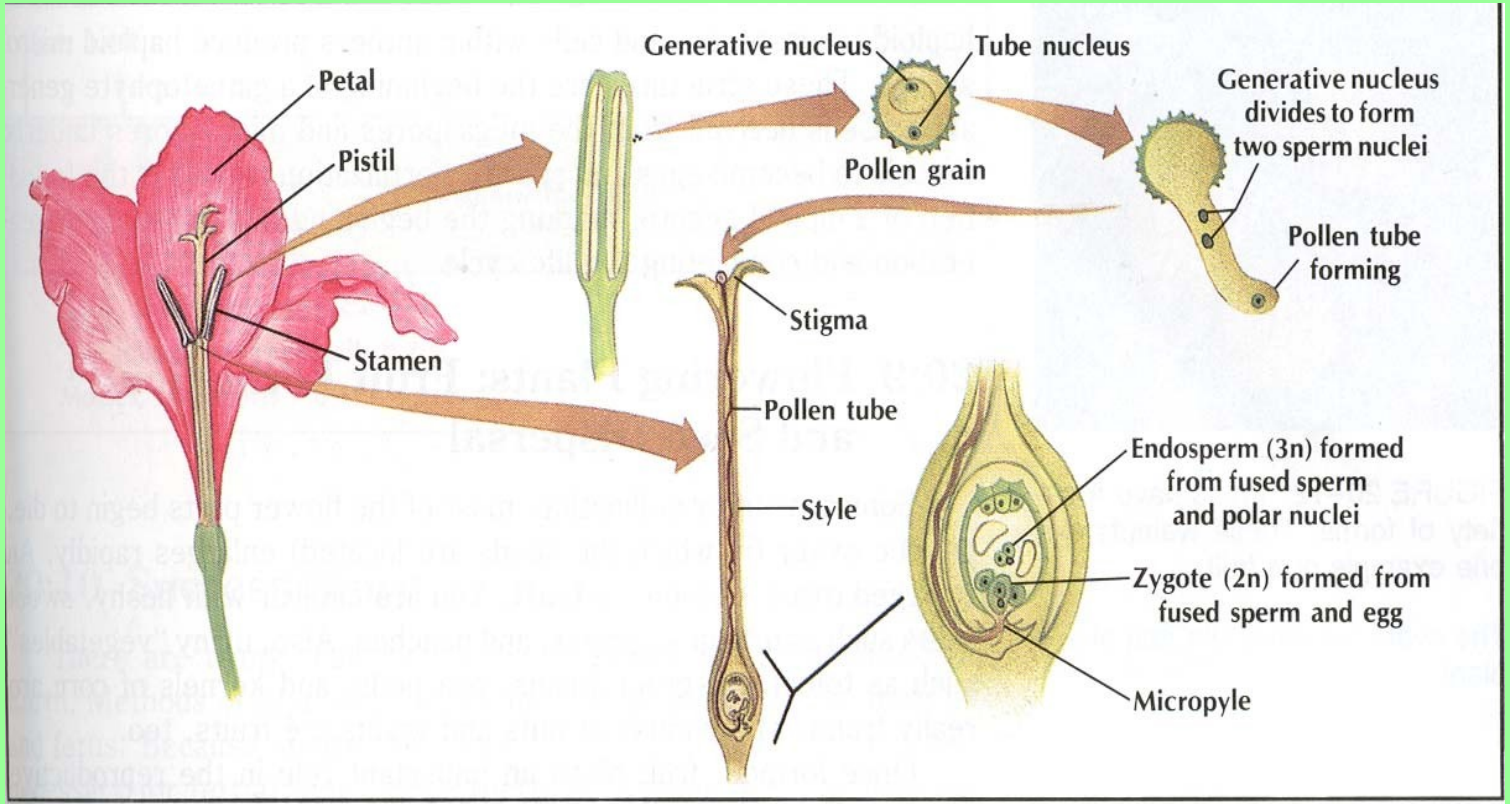


- When a pollen grain lands on the stigma, it germinates and a pollen tube grows down through the style to an ovule (egg)



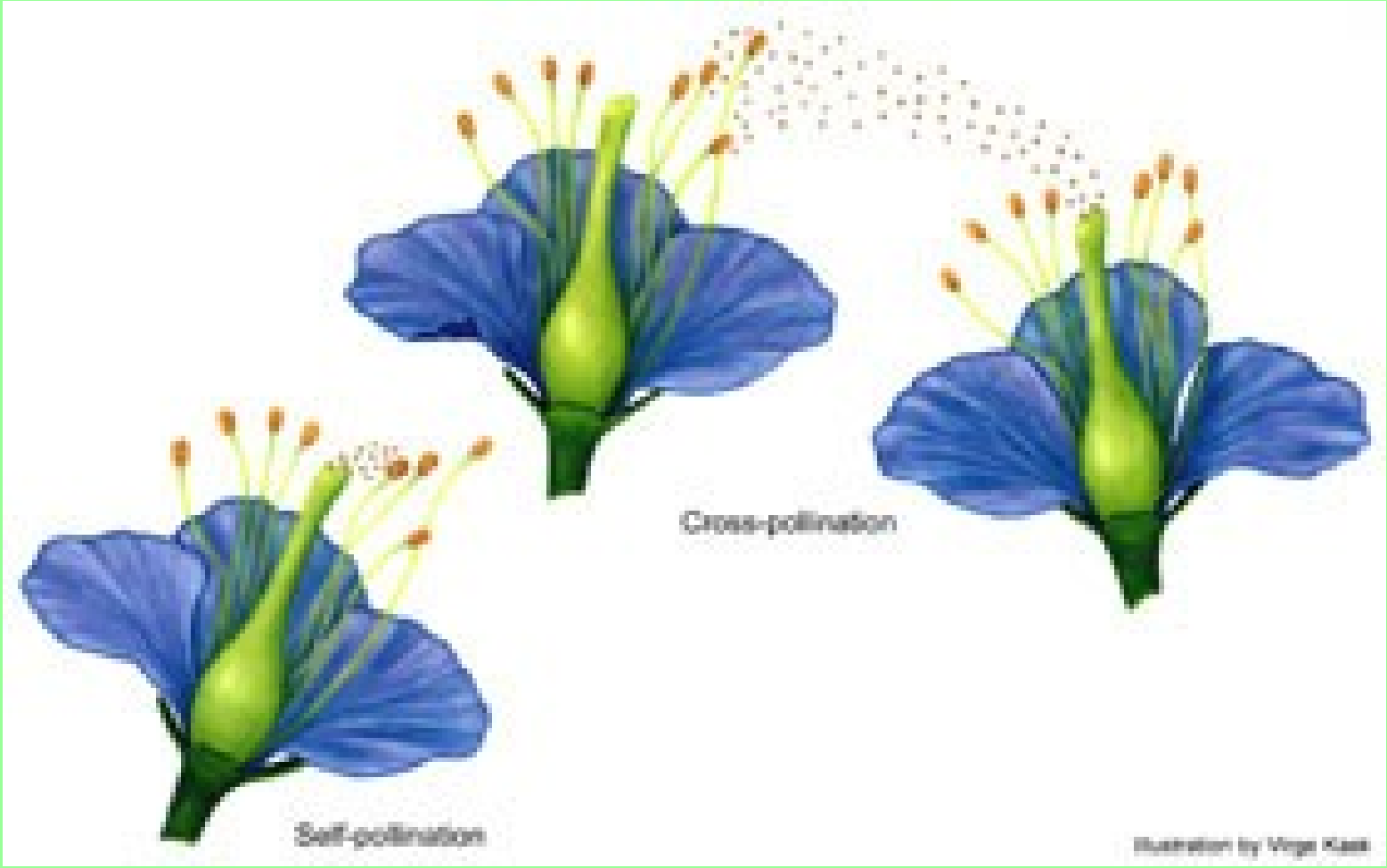
Fertilization

- The sperm travels through the pollen tube to the ovule. The sperm & egg fuse forming the **zygote** (fertilized egg) –this grows into the plant embryo (cells grow by mitosis)



***Self pollination –pollen from same flower**

***Cross pollination – pollen from a different flower**
- more variation



- The ovary and zygote (fertilized ovule) develop and ripen.

*The **ovule** forms the **<u>seed</u>** and the **ovary** forms the **<u>fruit</u>**.

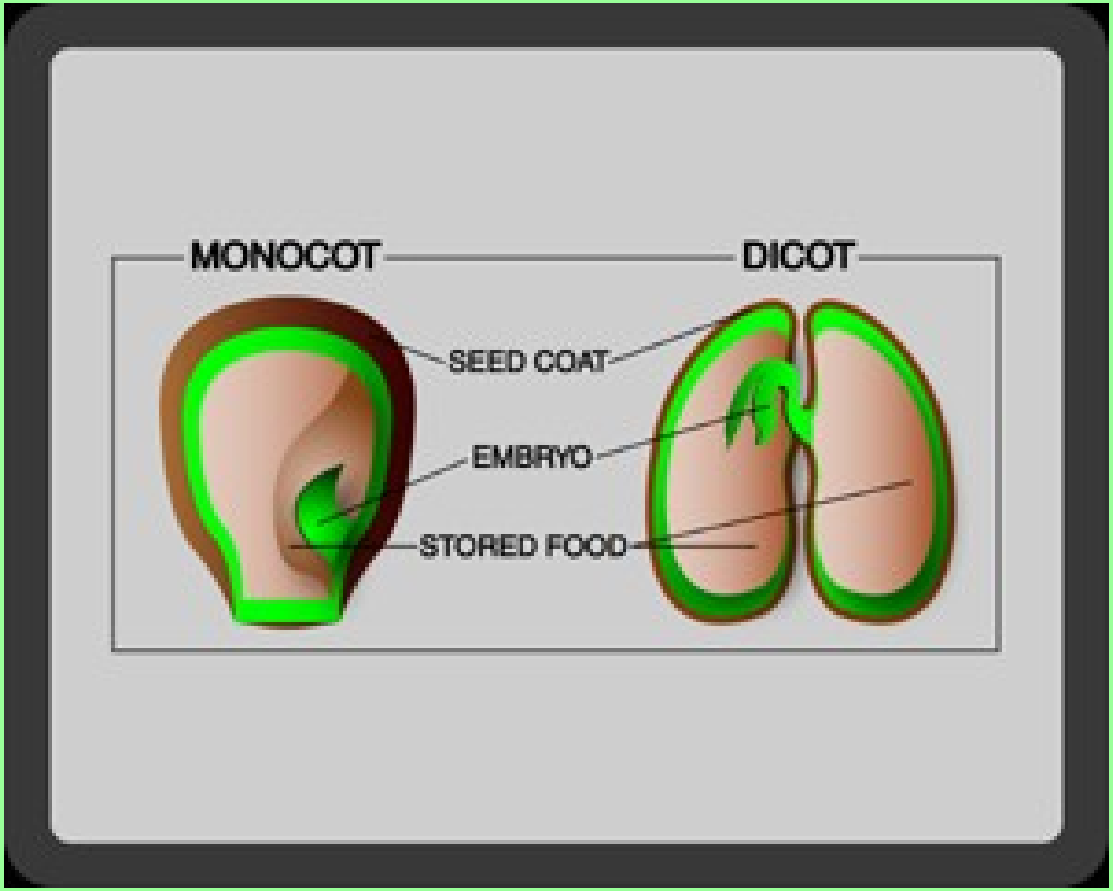
- A fruit is a ripened ovary







The plant embryo uses food stored in the **<u>cotyledon</u>** of the seed until it develops leaves for photosynthesis

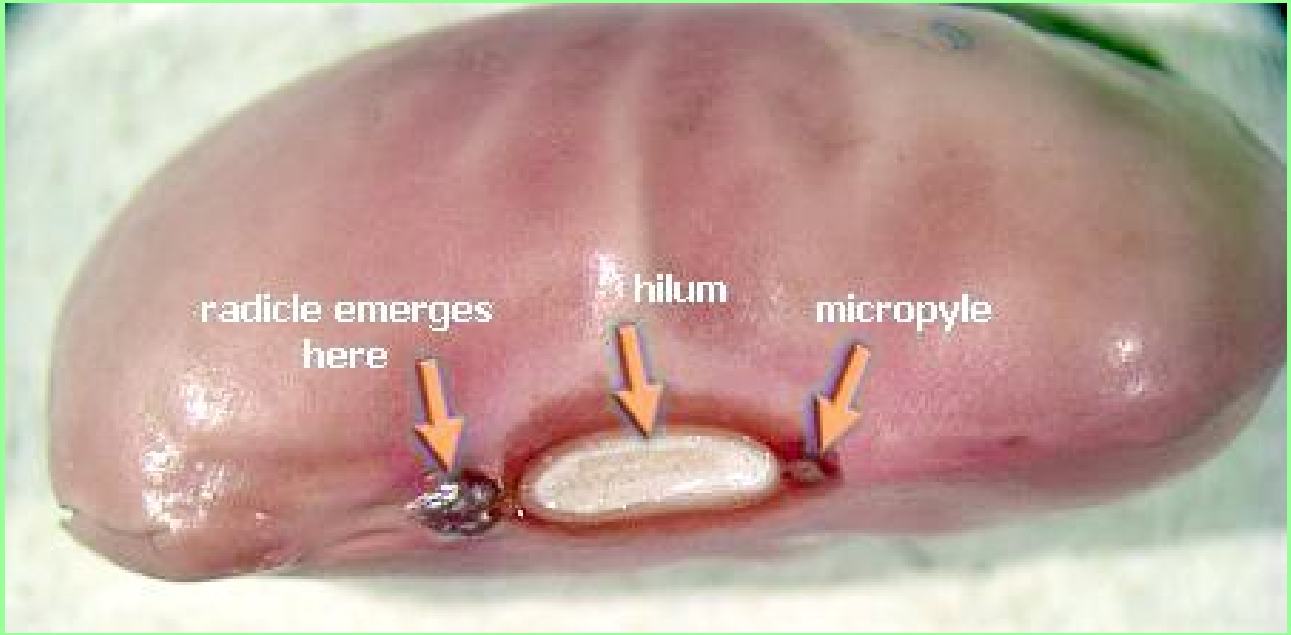


Seedling

micropyle –opening in ovule where pollen tube attached, sperm entered

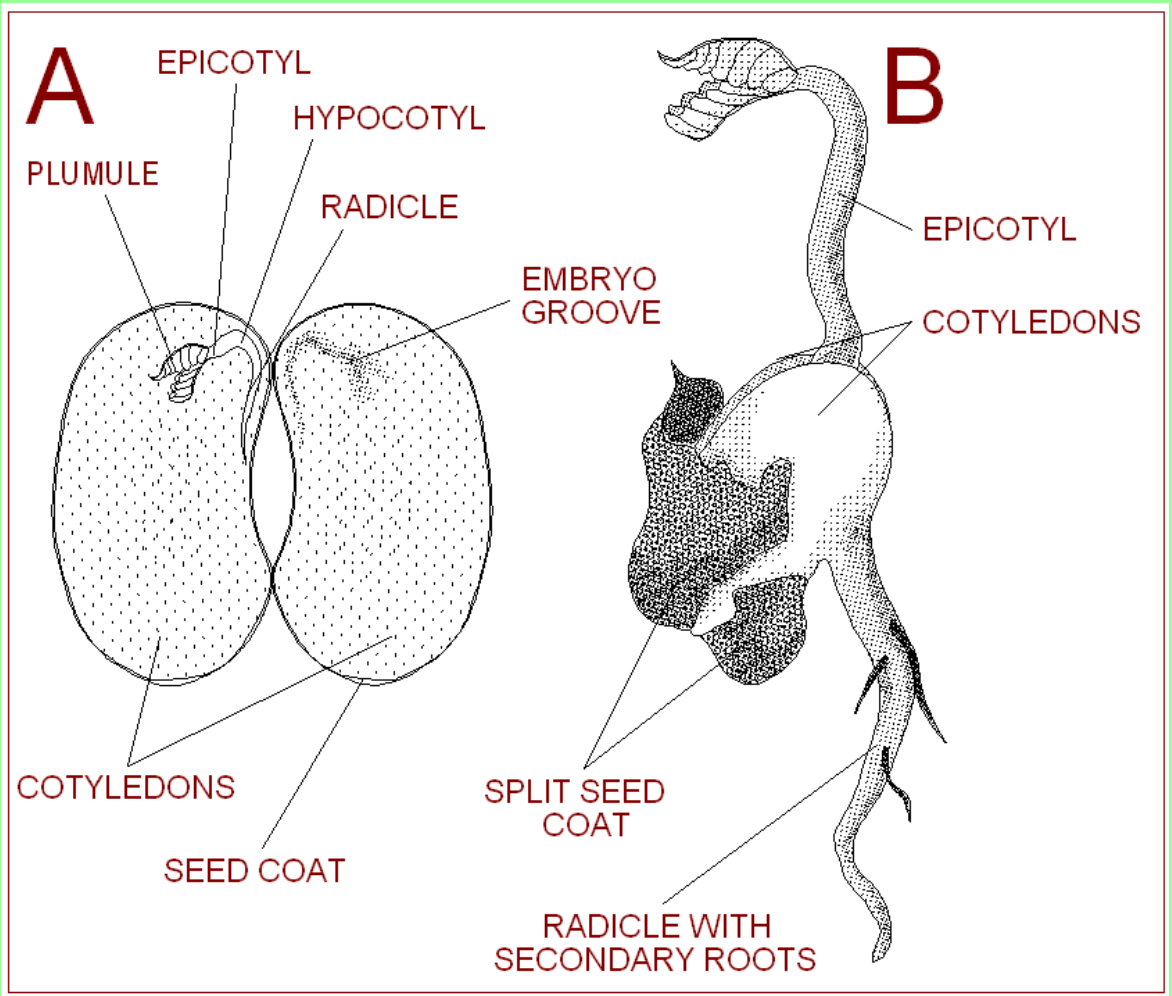
hilum –scar where ovule attached to ovary

radicle –embryonic root



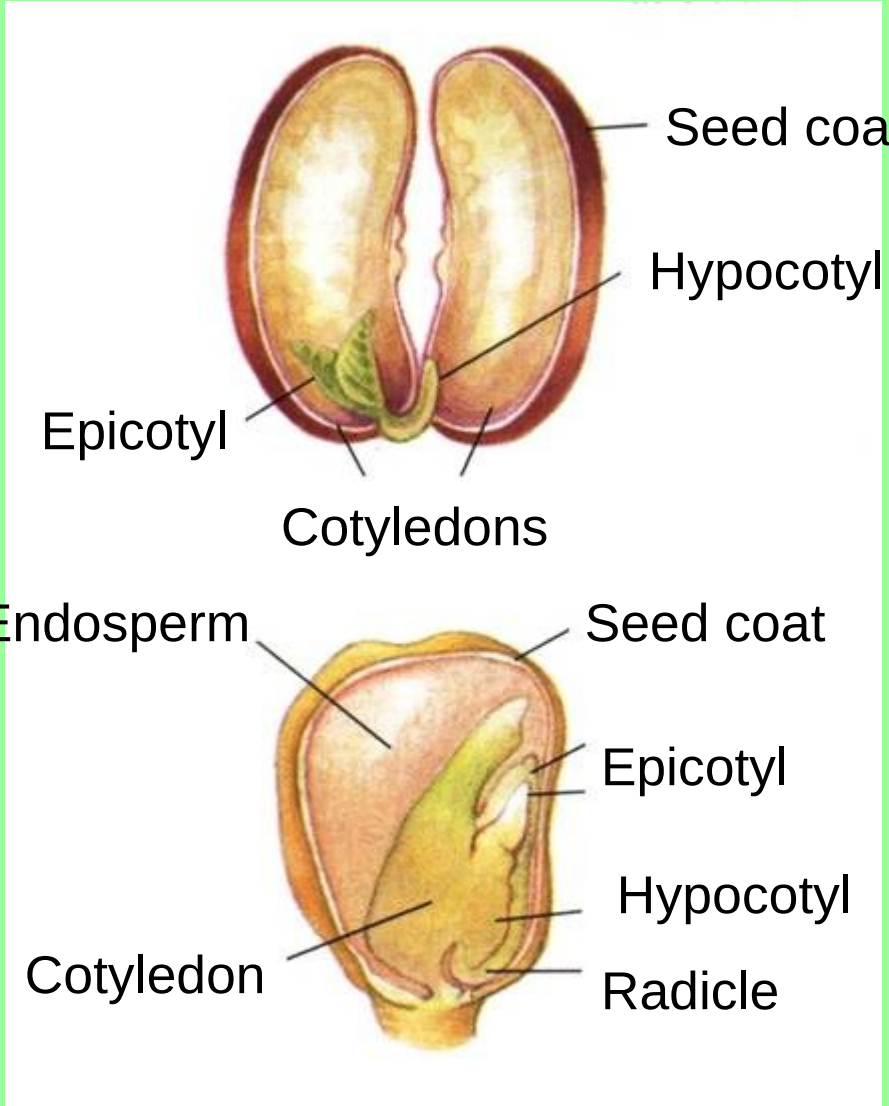
Epicotyl – grows above the cotyledons and gives rise to the leaves.

Hypocotyl –below the point of attachment of the cotyledon, develops into the stem.



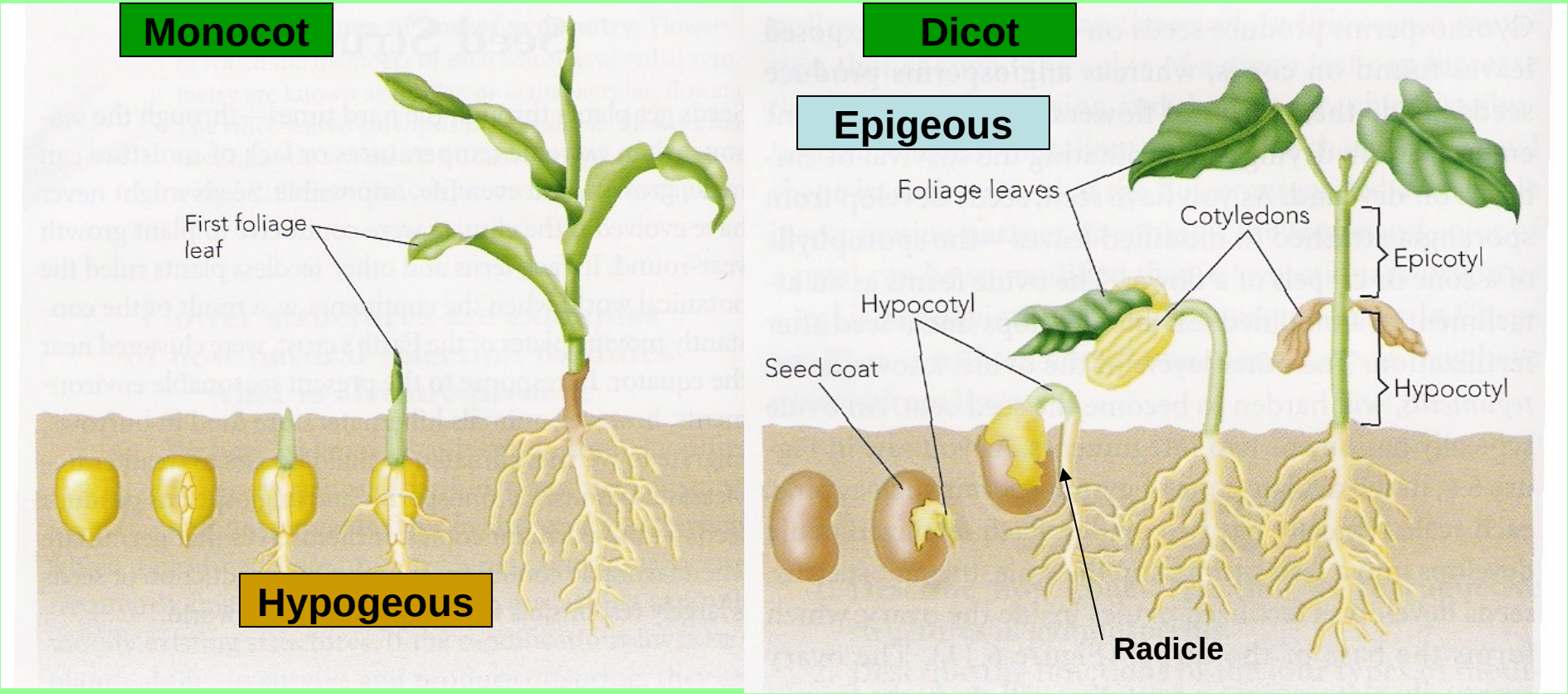
Parts of a seed

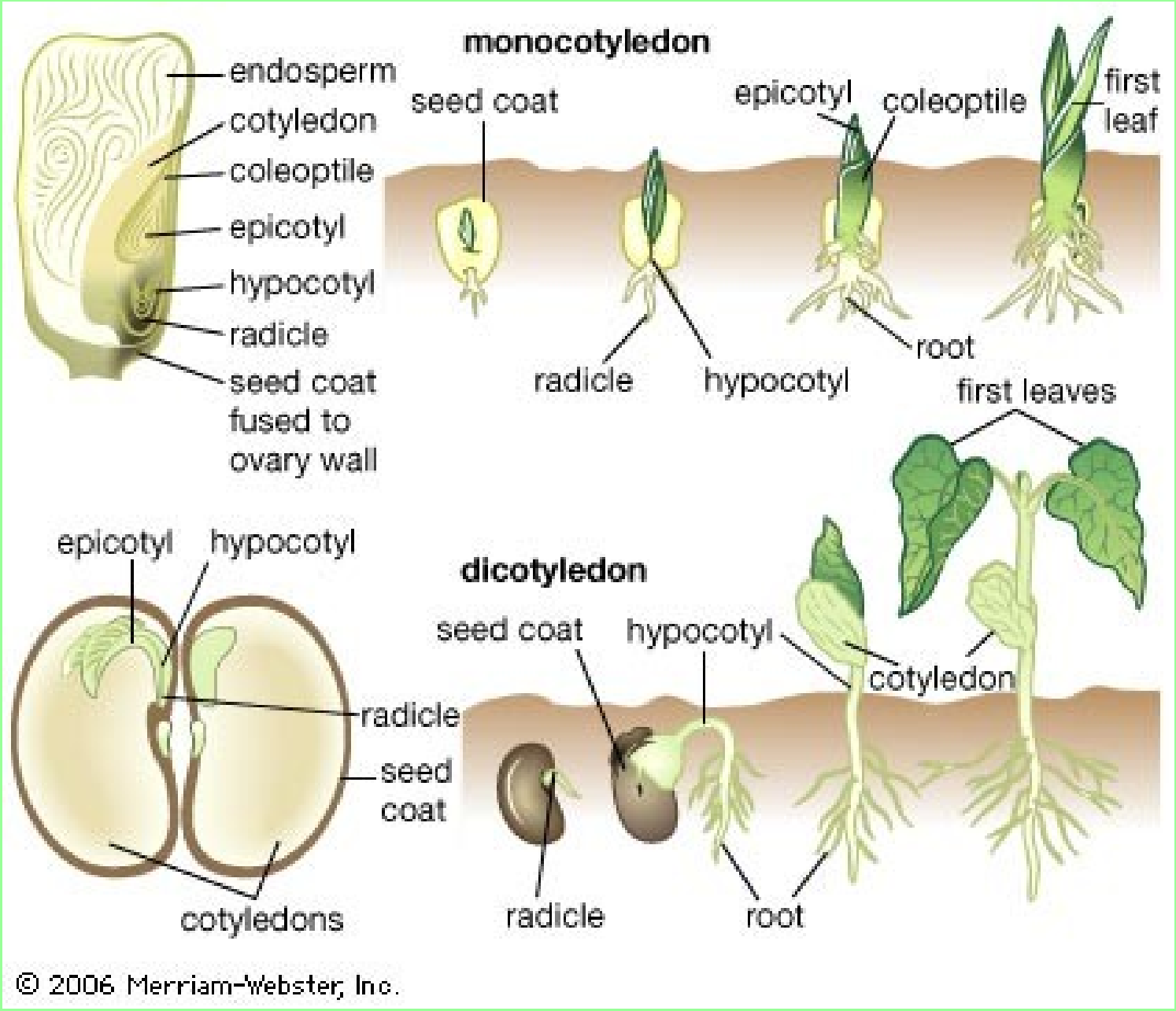
- Dicot



- Monocot

Seed Germination




monocotyledon
endosperm
cotyledon
coleoptile
epicotyl
hypocotyl
radicle
seed coat fused to ovary wall
seed coat
radicle
hypocotyl
epicotyl
coleoptile
first leaf
root
first leaves
dicotyledon
epicotyl
hypocotyl
radicle
seed coat
cotyledons
seed coat
hypocotyl
cotyledon
radicle
root
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