SEEDS

Plants Unit

Objective

- Observe and identify plant seeds structures for different types of plants.

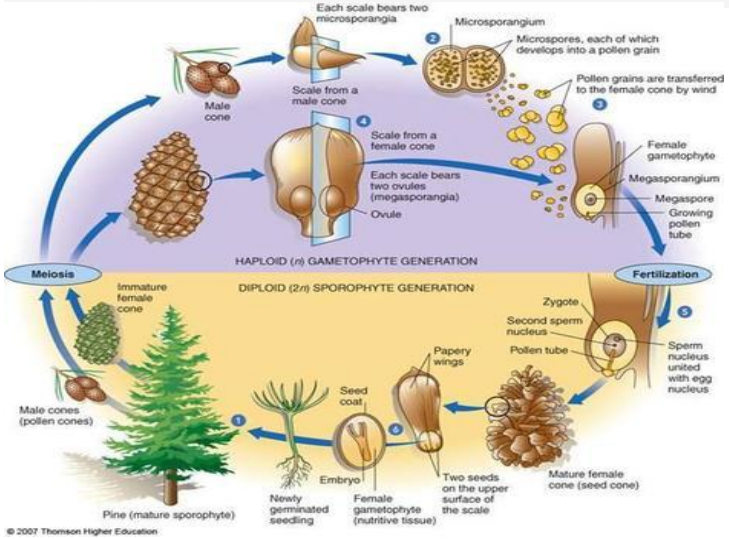
Research

- Seed: A plant embryo with stored food enclosed in a protective covering.

Research

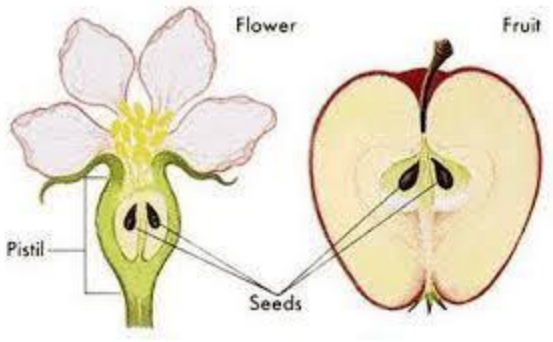
- Gymnosperm seed: “naked seed” not covered by fruit or a pod.

- Gymnosperm: Most produce cones which contain seeds

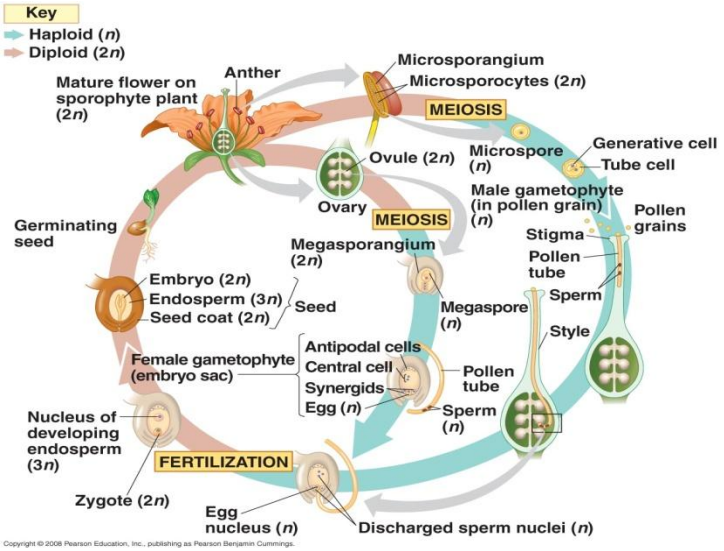


Research

- Angiosperm Seed: enclosed within a fruit or pod

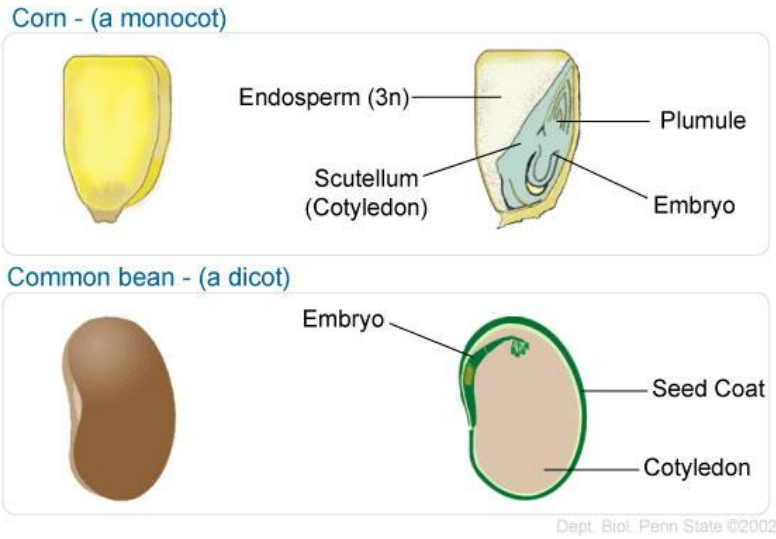


- Angiosperm: flowering plants



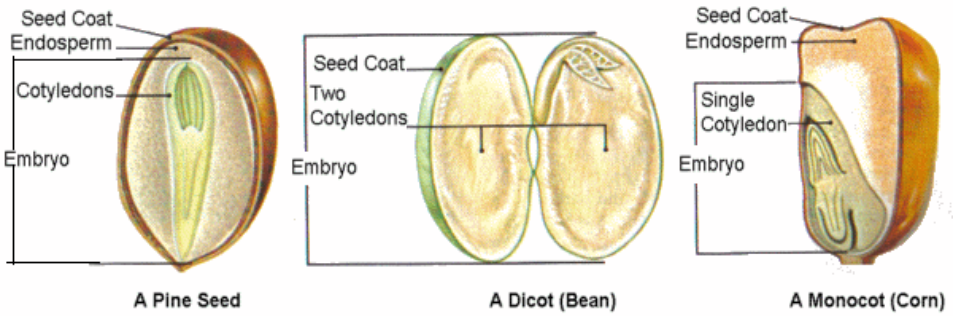
Research

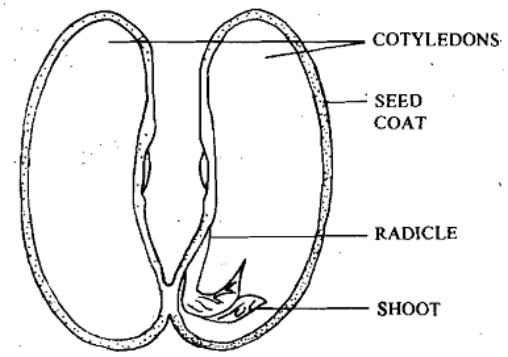
- There are two types of angiosperms:
- Monocot: 1 cotyledon surrounds the embryo
- Dicot: 2 cotyledon surround the embryos, seeds split naturally into 2 parts

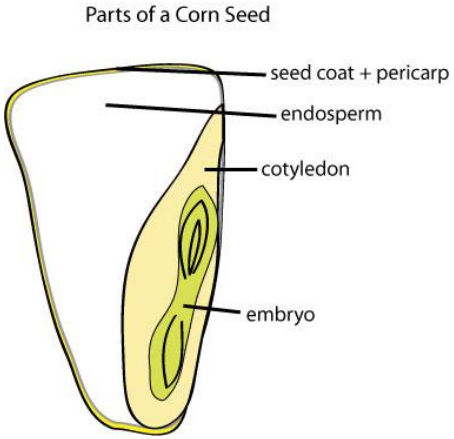


Research

- Seed Parts:
- Seed Coat: outside skin or covering of a seed.
- Embryo: Baby plant
- Cotyledon: large part of the seed that supplies food to the young plant when it starts growing.

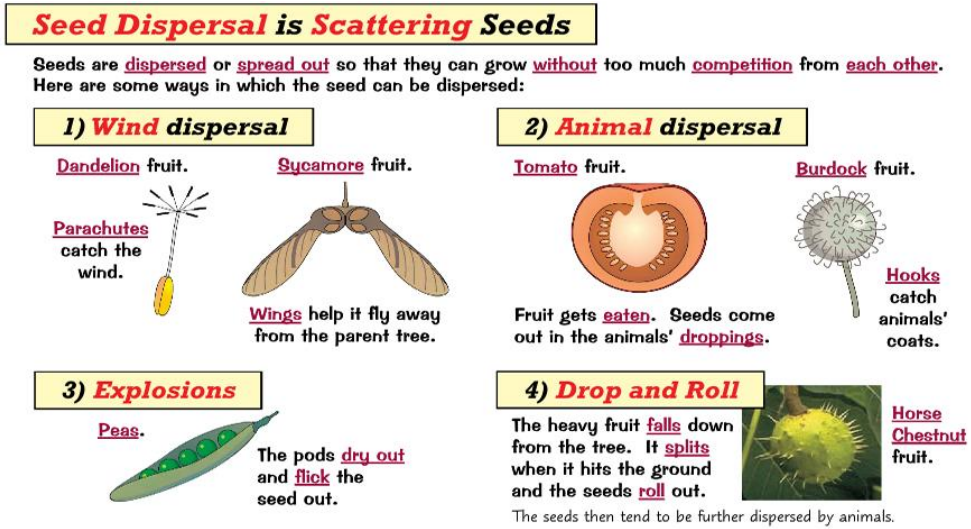


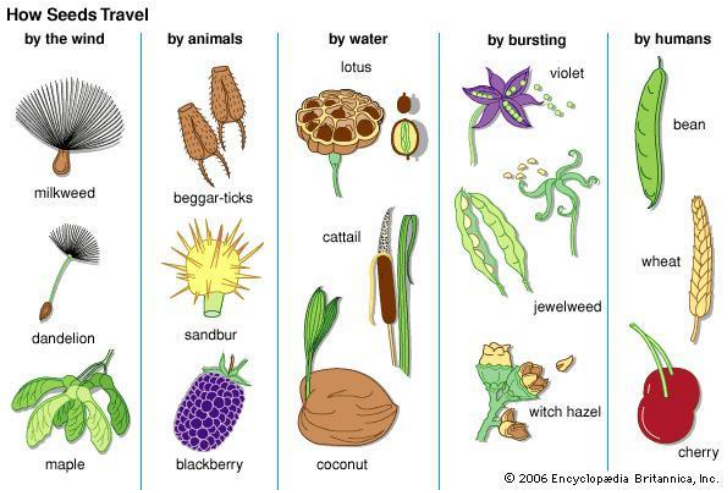




Research

- Seed Dispersal: the way the seed gets from the cone or fruit to the soil.
- Wind: some seeds have "wings" and wind blows them.
- Animals: eat fruit and seeds are dropped with the animals wastes. Some seeds have barbs that cling to animal's fur and eventually drop off





Hypothesis

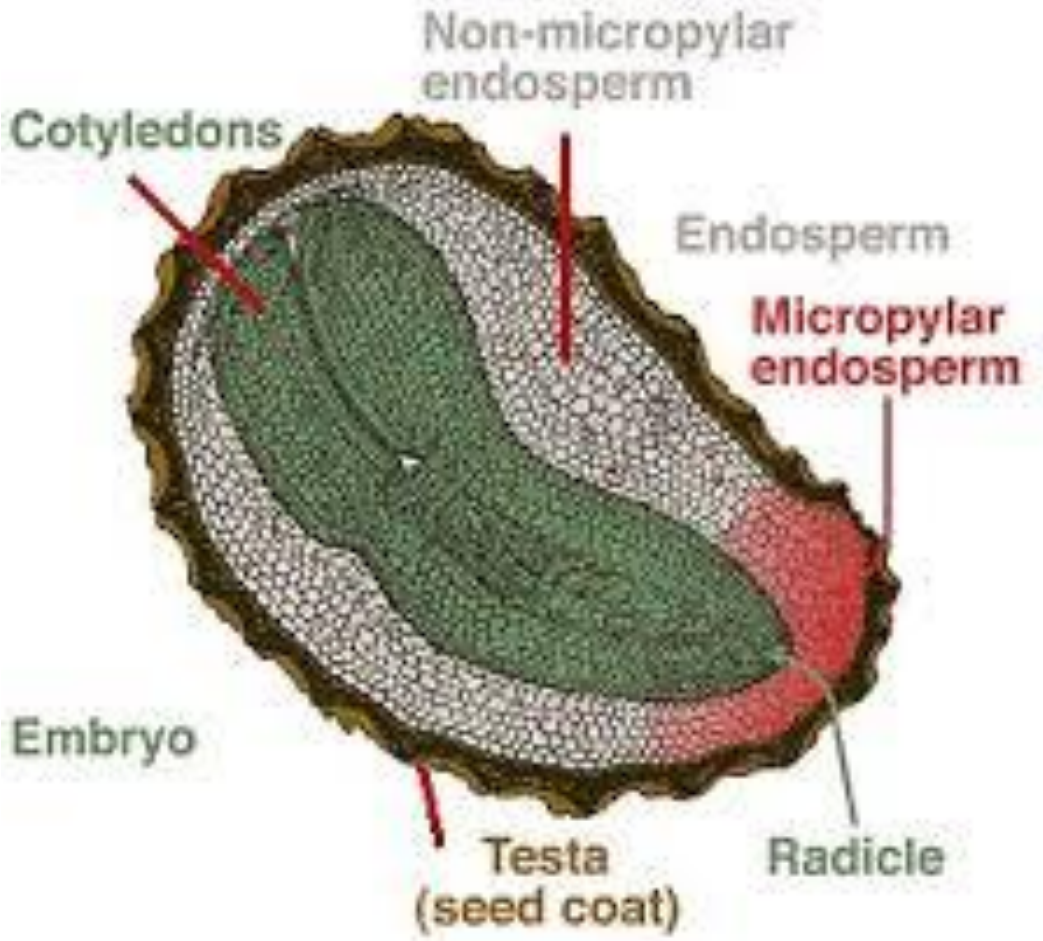
- Circle one of the two choices to complete the hypothesis sentences.

- All seeds **are/are not** the same.
- Seed **are/are not** alive.
- Seeds are produced in the **roots/stems/leaves/flowers**.

Experiment

1. Make drawings of all of the following (seeds).
2. Label the parts of the seed of each drawing.
    1. Seed Coat
    2. Cotyledon
    3. Embryo
3. Fill in the data table by identifying the following:
    1. whether the seed is from an angiosperm/gymnosperm?
    2. Monocot or dicot?
    3. how is it dispersed?
4. Answer the conclusion questions

Radish Seed


Non-micropylar endosperm
Cotyledons
Endosperm
Micropylar endosperm
Embryo
Testa (seed coat)
Radicle

Questions

- Which seeds had two halves?
  - Bean, Pea, and Radish
- Seeds with two halves are call _____.
  - Dicots
- Which seeds did not split in half perfectly?
  - Corn
- Seeds that don't split perfectly in half are called _____.
  - Monocots

Questions

- What did you find on the inside of the seeds?
  - Embryo or the baby plant
- Why do you think the seed were soaked in water (or are fresh) overnight?
  - To make them easier to break apart to see inside the seed
- What do you think happens to the seed when it is planted?
  - The embryo breaks the seed coat to start forming the plants when the seed comes in contact with water

Questions

- What do you think all the materials inside the seed is needed for?
  - Food and energy for the embryo before it reaches the surface
- Why do you think the outside of the seed (Bean Seed) is so hard before it is soaked?
  - Protection for the plant embryo
- What is the difference between angiosperm and gymnosperm seeds?
  - Gymnosperms have little protection or covering while the angiosperm seeds have a covering for some protection.

Monocot (Corn) and Dicot (Flowering plants) Seed Anatomy

Bean = Dicot

Corn = Monocot