

Life Science

Chapter 11

SEED PLANTS

PART 1

Plant Classification

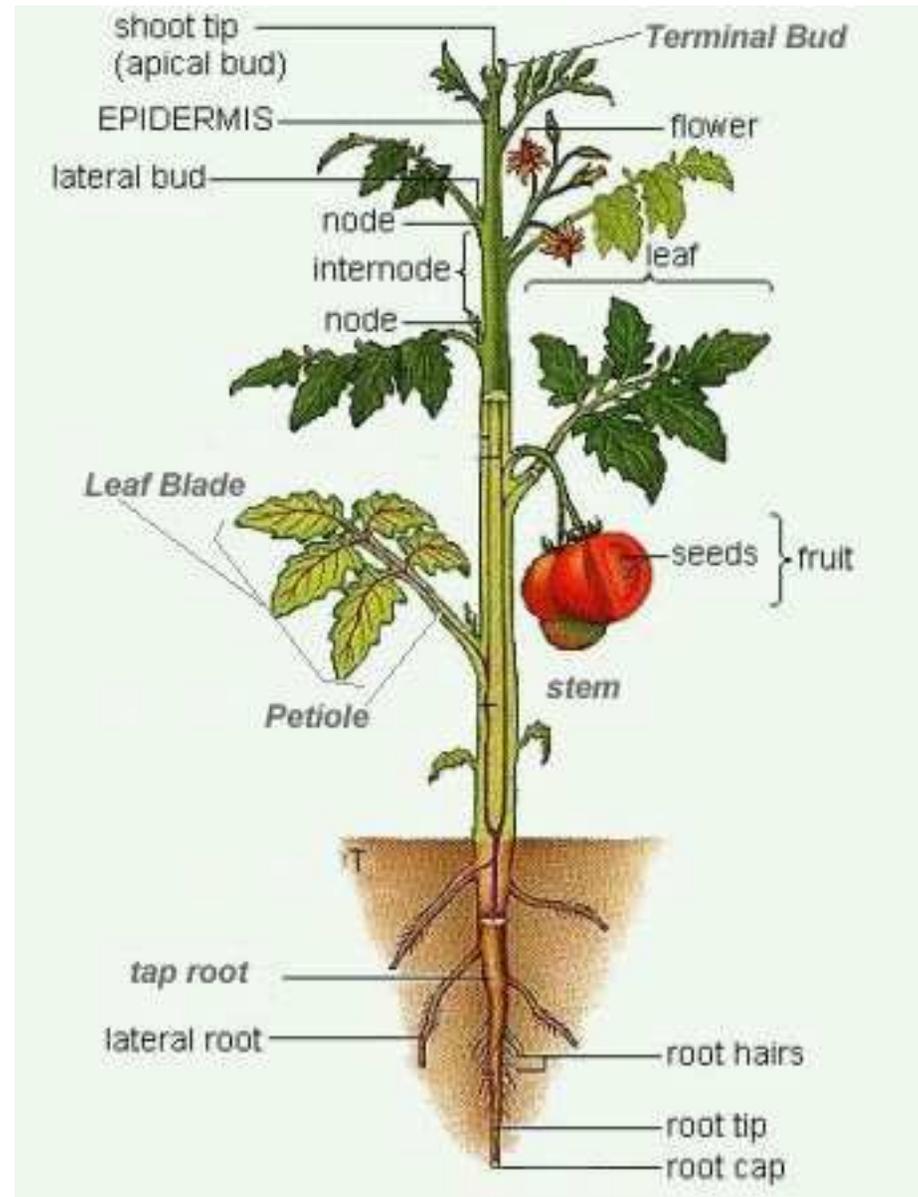
- **Kingdom Plantae**
 - **Phylum: Bryophyta** – Mosses, Liverworts & Hornworts
 - **Phylum: Tracheophyta** –
 - **Primitive Spore Producing Vascular plants**
 - **Ferns, Horsetails & Club “Mosses”**
 - **Advanced Seed Producing Vascular Plants**
 - **Class: Gymnospermae**
 - **Class: Angiospermae**
 - » **Subclass: Monocotyledoneae**
 - » **Subclass: Dicotyledoneae**

Advanced Seed Producing

- **Advanced Seed Producing Vascular Plants**
 - **Class: Gymnospermae**
 - **Class: Angiospermae**
 - » **Subclass: Monocotyledoneae**
 - » **Subclass: Dicotyledoneae**

The Typical Vascular Plant

- Know these terms
 - Stem
 - Tap root
 - Lateral root
 - Leaf blade
 - Petiole
 - Seed
 - Fruit
 - Node
 - Internode
 - Flower
 - Terminal bud
 - Lateral bud



Class - Gymnospermae

- 1. Seed producing plants that produce “naked” seeds, seeds not enclosed in a fruit.
- 2. Most have needle-like leaves (conifers: pines, firs and cedars)
- 3. Some with “regular” leaves (Ginkgo)
- 4. Often are cone producers



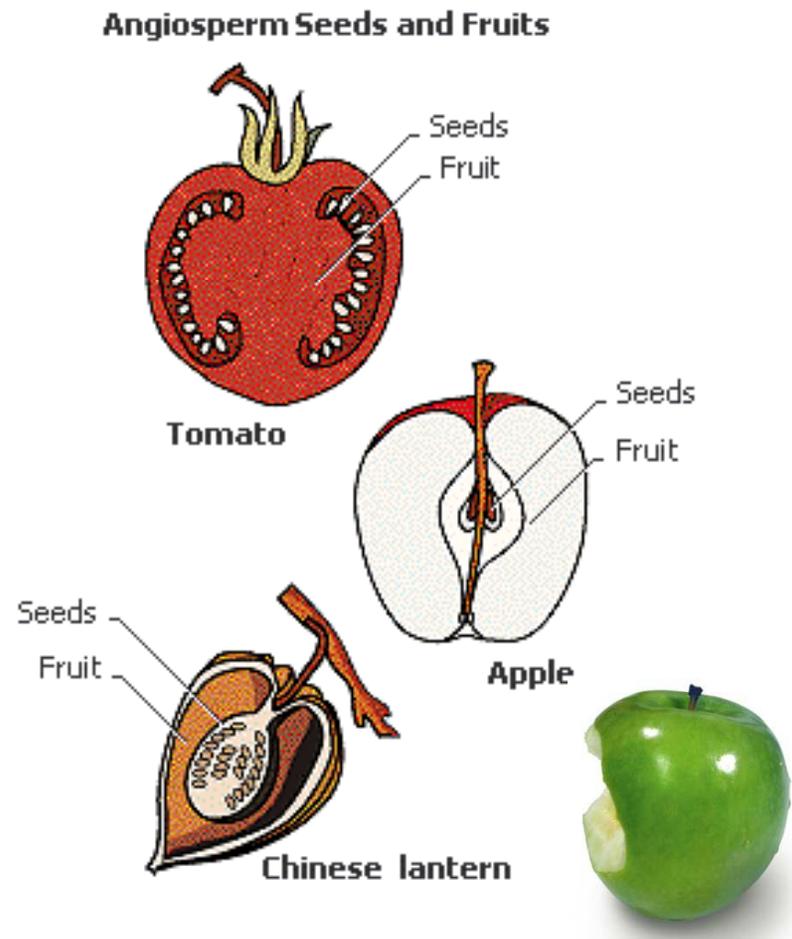
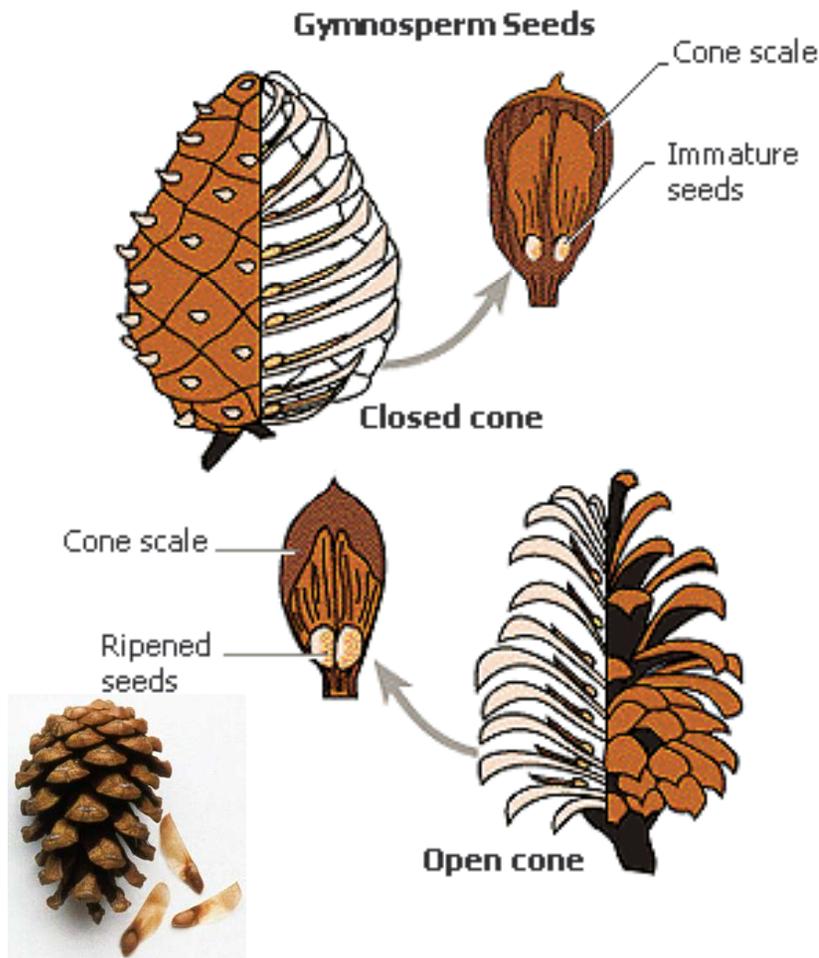
Class Angiospermae

- Seeds are produced and protected by a fruit of some kind.
- AKA Flower producing plants
- Two subclasses of Angiosperms:
 - **Monocotyledons and Dicotyledons**

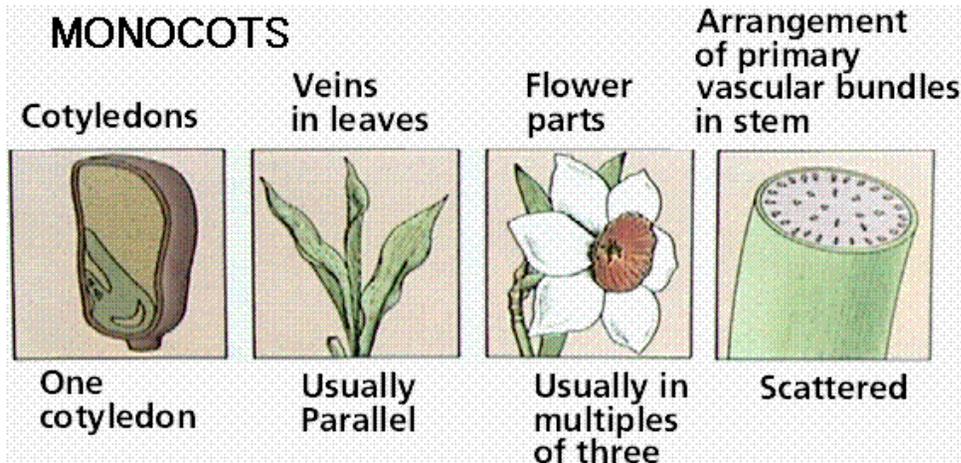


Seed Types

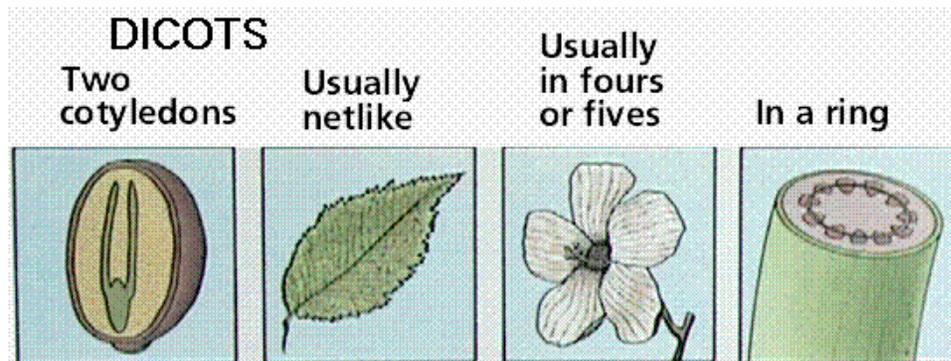
- Gymnospermae – “**naked**” “seed”
- Angiospermae – “**container**” “seed”



Monocot vs. Dicot



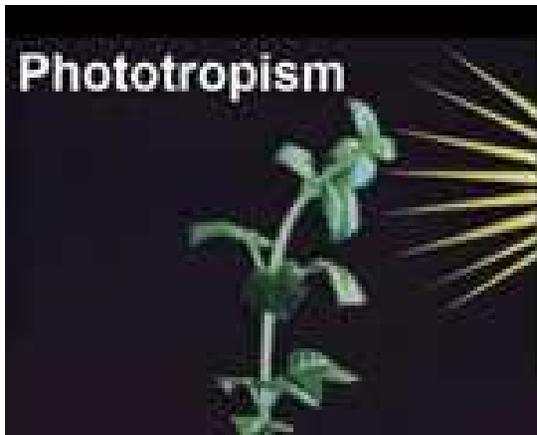
- **Monocots:** Corn, wheat, palms, grasses, orchids, lilies
- Leaf veins usually **parallel**
- Flower parts in multiples of **three**
- Vascular bundles are **scattered** in stem
- Usually **fibrous root**
- **One** cotyledon



- **Dicotyledons:** roses, maple, oaks, beans, apples,
- Leaf veins branched: **Palmate** or **Pinnate**
- Flower –parts in multiples of **4 or 5**
- Vascular bundles are arranged in a **ring** in the stem
- Usually **tap root** system
- **Two** cotyledons in the seed

Plant Responses and Growth

- **Phototropism:** Plant stems grow toward light (**positive phototropism**), roots grow away from light (**negative phototropism**)
- **Gravitropism:** Plant stems grow away from the source of gravity (grow up) (**negative gravtropic**) and roots grow toward the source of gravity (**positive gravitropic**) (grow down)
- **Thigmotropism:** Plant response to touch stimuli (Venus flytrap snaps shuts)



That's all for now...

Lots more over
plant structures in
Part 2