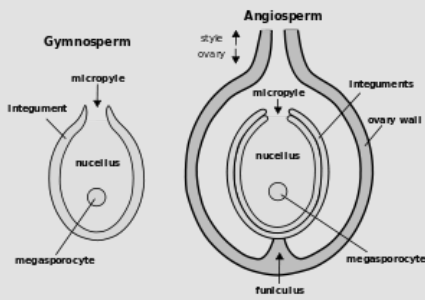
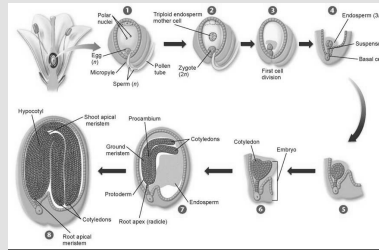


### Gymnosperms vs. Angiosperms



### Seed Development



### Plant Hormones

#### Auxins

distribution of auxins → phototropism  
enhances apical dominance (vertical)  
promotes fruit growth

#### Cytokinins

stimulates cytokinesis & cell division  
delays senescence (aging)

#### Gibberellins

cause stem elongation, fruit growth, & seed germination  
auxin+gibberellins=fruit development

#### Brassinosteroids

induce cell elongation & division in stem segments, slow leaf abscission

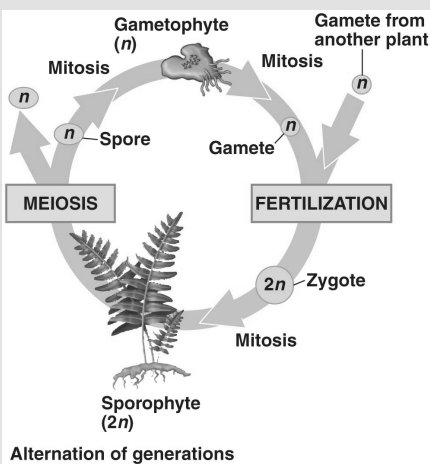
#### Abscisic Acid (ABA)

antagonizes growth hormones, inhibits germination, used to withstand drought  
must be washed/exposed to light/cold to deactivate

#### Ethylene Gas

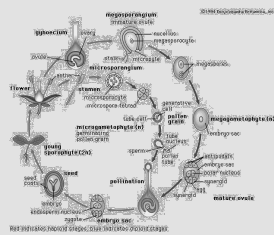
produced in response to stress during fruit ripening, apoptosis, & exposure to auxin

### Gametophyte/Sporophyte Cycle



Alternation of generations

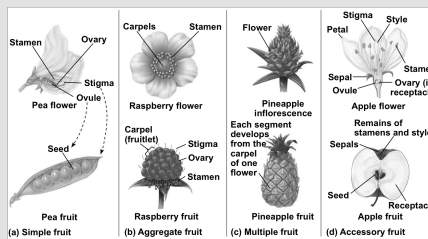
### Angiosperm Reproduction



### Monocot vs. Dicot

	Seed	Root	Stem	Leaf	Flower
Monocots	One cotyledon in seed	Root xylem and phloem in a ring	Vascular bundles scattered in stem	Leaf veins form a parallel pattern	Flower parts in threes and multiples of three
Eudicots	Two cotyledons in seed	Root phloem between arms of xylem	Vascular bundles in a distinct ring	Leaf veins form a net pattern	Flower parts in fours or fives and their multiples

### Types of Fruits



### Plant Transport

#### Short-distance

occurs by osmosis (movement of free water through aquaporins)

#### Long-distance

bulk flow using:  
translocation (H<sup>+</sup> gradient) through phloem (sugar)  
transpirational pull (cohesion) through xylem (fluid/minerals)