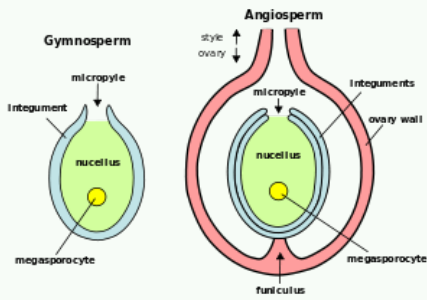
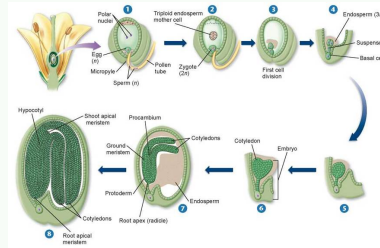


Gymnosperms vs. Angiosperms



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

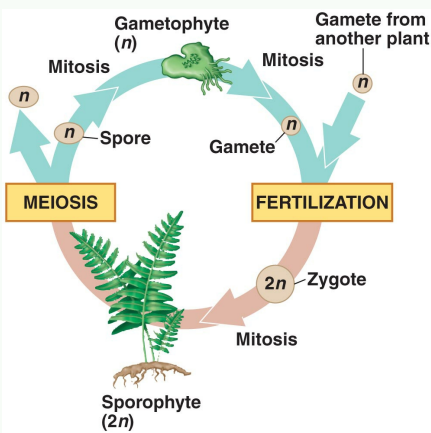
Abscisic Acid (ABA)

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



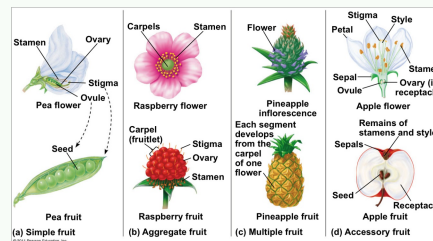
Alternation of generations

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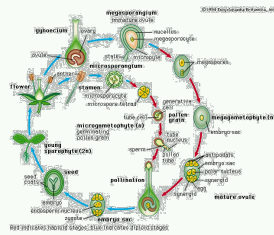
Monocot vs. Dicot

	Seed	Root	Stem	Leaf	Flower
Monocots	One cotyledon in seed	Root system 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 stem	Vascular bundles in a distinct ring	Leaf veins form a net pattern	Flower parts in fours or fives and their multiples

Types of Fruits



Angiosperm Reproduction



Plant Transport

Short-distance

occurs by osmosis (movement of free water through aquaporins)

Long-distance

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