Plant Topic Review

Types of plants
Nonvascular spore (moss) – no vascular tissue
Vascular spore (fern) – vascular tissue
Vascular seed with cones (gymnosperms) – seeds in cones
Vascular seed with flowers (angiosperms) – seeds in fruit

Structures
Stomata
Guard cells
Tissue types – dermal, ground, and vascular tissue
Cuticle
Epidermis
Cortex
Casparian strip
Mesophyll – palisade and spongy
Parenchyma cell
Collenchyma cell
Sclerenchyma cell
Bundle sheath cells
Stele

Plant Growth/Reproduction
Primary and secondary growth
Root cap
Zone of cell division
Zone of elongation
Zone of differentiation
Meristems
Cork and vascular cambium
Seed structure – seed coat, cotyledon, and embryo
Gametophyte
Sporophyte
Germination
Pollination

Transport
Apoplastic route
Symplastic route
Active transport
Cotransport

Transpiration
Xylem – tracheids and vessel elements
Root pressure
Transpirational pull
Guttation

Translocation
Phloem – sieve-tube elements, sieve plate, companion cell
Sugar source
Sugar sink

Osmosis
Water potential
Osmotic potential
Solute potential
Pressure potential

Properties of water
Adhesion
Cohesion

Responses
Photoperiodism
Phytochrome
Short-day and Long-day plants
Critical night length
Phototropism
Gravitropism
Thigmotropism
Circadian rhythms

Hormones
Ethylene
Auxin
Cytokinins
Gibberellins
Brassinosteroids
Abscisic acid

Discussion Topics

- How water and sugar is transported in the plant
- How osmosis and water potential relates to the transport
- Change in water potential throughout the plant
- Factors that affect the opening and closing of the stomata
- Environmental conditions and how they affect transpiration
- Symbiotic relationships to aid in resource acquisition
- Factors that affect photosynthetic production