

Plant Form and Function ECA

YOU MUST KNOW

Ch 35: Plant Structure, Growth and Development

- The function of xylem and phloem tissue
- The specific functions of tracheids, vessels, sieve-tube elements, and companion cells
- The correlation between primary growth and apical meristems versus secondary growth and lateral meristems
- The hierarchy of organs, tissues and cells
- Paranchyma, sclerenchyma, coelenchyma, ground tissue,

Ch 36: Resource Acquisition and Transport in Vascular Plants

- The role of passive transport, active transport, and cotransport in plant transport.
- The role of diffusion, active transport, and bulk flow in the movement of water and nutrients in plants.
- How the transpiration cohesion-tension mechanism explains water movements in plants.
- How pressure flow explains translocation

Ch 37: Soil and Plant Nutrition

- The difference between macronutrients and micronutrients
- The importance of mutualistic relationships between plant roots and the bacteria and fungi that grow in the rhizosphere
- Examples of nonmutualistic nutritional adaptations in plants

Ch 38: Angiosperm Reproduction and Biotechnology

- The process of double fertilization, a unique feature of angiosperms
- The relationship between seed and fruit
- The structure and functions of all parts of the flower.

Ch 39: Plant Responses to Internal and External Signals

- The three steps to a signal transduction pathway.
- The role of auxins, gibberellins, ethylene, abscisic acid, cytokinins in plants.
- The survival benefits of phototropism and gravitropism.
- How photoperiodism determines when flowering occurs.