**Topics List for Plant Unit (Chap 22, 23 & 24)**

Definition of a plant

Plant life cycle – alternation of generations

What plants need to survive

Evolutionary Origins of Plants

Major evolutionary changes in plants

Describe Bryophytes  
-mosses, liverworts, hornworts

Life cycle of a moss

Human uses of mosses

Describe Seedless Vascular plants  
-club mosses, horsetails, ferns

Life cycle of a fern

Describe Seed Plants

Adaptations for reproduction without water  
-Cones & Flowers, Pollen, Seeds

Evolution of Seed Plants

Describe Gymnosperms  
-Conifers  
-Cycads  
-Ginkgoes  
-Gnetophytes

Ecology of conifers

Angiosperms  
-fruits and flowers

3 Ways of Categorizing Angiosperms

Seed Plant Structures

Plant Tissue Types  
-Dermal Tissue  
-Vascular Tissue  
 -Types of Cells in Xylem & Phloem  
-Ground Tissue

Meristems & plant growth

Types of Roots

Root Structure & Growth

Root Functions  
-update of nutrients and water  
-essential plant nutrients  
-movement into vascular cylinder  
 -osmosis & root pressure

Stem Structure & Function

Monocot vs Dicot stems

Primary Growth of Stems

Secondary growth of stems  
-Vascular Cambium  
-Formation of Wood  
-formation of Bark

Specialized stems

Leaf Structure

Leaf Functions  
-Photosynthesis  
-Transpiration  
-Gas Exchange

Specialized Leaves

Water Transport  
-Capillary Action, Transpiration

Nutrient Transport  
-Functions of Phloem  
-Movement from Source to Sink

Demonstrations   
-diffusion  
-celery

Guest Speaker   
-First nations uses of plants

Dominant phase (generation) in seed plants

Gymnosperms:

Pollen cones

Seed cones

Pollination

Fertilization

Development

Angiosperms  
Structure of a Flower  
-sepals and petals  
-stamens   
-carpels/pistil

Producing pollen

Producing the egg

Pollination  
-by animals  
-adaptations for attracting pollinators

Fertilization  
-double fertilization

Fruit and seed development  
-definition of a fruit  
-fruit/seed adaptations for dispersal

Seed dormancy & germination

Asexual Reproduction  
-Advantages & disadvantages  
-Methods of vegetative reproduction  
--stolons, plantlets, and rhizomes  
  
Plant Propagation by humans  
-methods: cuttings, grafting, plant tissue cultures

Agriculture   
-movement of crop plants around the world,   
-relatively few crop plants