

## Biology 112

### The cell

- Designing an experiment
- Development of cell theory
- Microscopes
- Prokaryotes and eukaryotes
- Multicellular organisms
- Cell organelles
- Energy
- Photosynthesis
- Reactions of photosynthesis
- Cellular respiration
- Cell boundaries, passive transport
- Active transport

### Biodiversity

- Kingdom of plantae
  - Early plants
  - Bryophytes
  - Seedless vascular plants
  - Angiosperm
  - Seed plants (Reproduction free from water, Cones and flowers, Pollen)
  - Seeds
  - Evolution of seed plants (conifers, ecology of conifers)
  - Aquatic plants
  - Salt tolerant plants
  - Desert plants
  - Nutrition specialists (carnivorous, parasites, epiphytes)
  - Chemical defenses
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- Origin of invertebrates
  - Beginnings of invertebrate diversity
  - Evolutionary trends (Specialized cells tissues and organs, Body symmetry, Cephalization, Segmentation, Coelom formation, Embryological development)
  - Invertebrate form and function
  - Chordates
  - Chordate evolution

## Body Systems

- Organization of the body
- Homeostasis
- Carbon compounds
- Food and nutrition

## Digestive System

- Digestion (mouth, esophagus, stomach, small intestine and pancreas, liver and gall bladder, absorption, large intestine)
- Diagram of digestive system

## Circulatory System

- Circulatory system
- Blood vessels (capillaries, veins, arteries)
- Heart (one-way blood flow, keeping the beat, heart sounds)
- Cardiac output
- Blood pressure
- Plasma, erythrocytes, leukocytes, platelets

## Respiratory System

- Respiratory system (nasal cavity, pharynx, trachea, larynx, bronchi, bronchioles, alveoli, pleural membrane)
- Breathing movements
- Control of breathing
- Diagram of respiratory system