

Study Guide: Unit 2 Test

HONORS BIOLOGY: CELLS

Directions: The list below identifies topics, terms, and concepts that will be addressed on your Unit 2 Test. This list should help you focus your review. This is not a homework assignment you will turn into me.

Cell Structures and Organelles

- Identify cell structures/organelles and their function

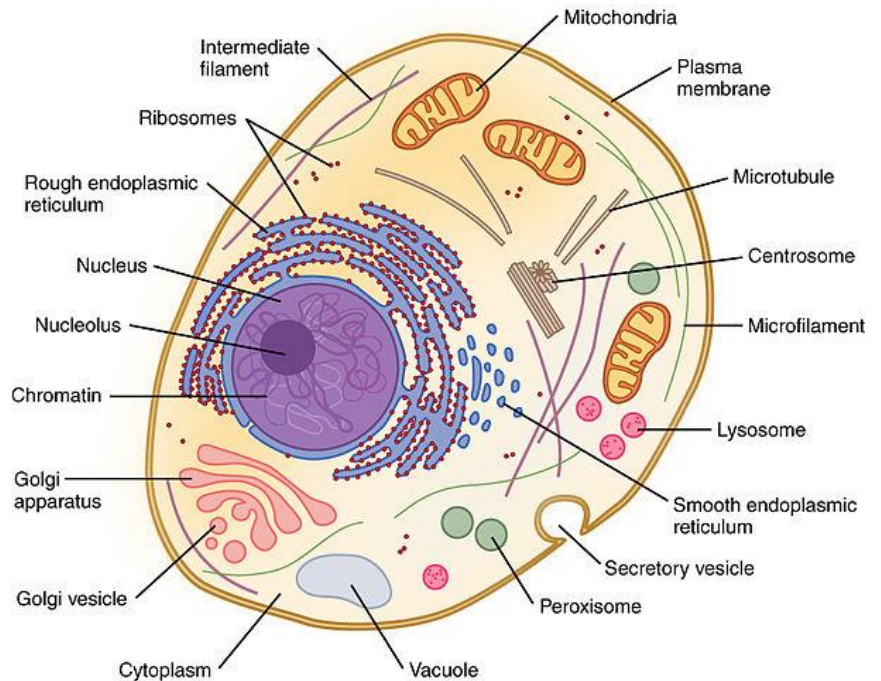
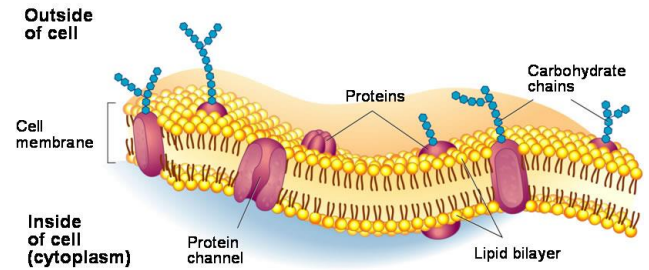
- Nucleus
- Nucleolus
- Nuclear membrane
- Cytoplasm
- Cell membrane
 - Fluid mosaic model (molecules found in membrane)
 - Phospholipids
 - Structure of phospholipids (fatty acids)
 - Hydrophilic and hydrophobic parts
 - Orientation of phospholipids
 - Location in animal and plant cells
 - semipermeable
- Ribosomes
- Rough ER
- Smooth ER
- Golgi apparatus
- Lysosomes
- Mitochondria
- Chloroplasts
- Vacuoles
- Cytoskeleton
 - Microtubules
 - Chemical composition
 - Importance to the cell
- DNA/chromatin
- Centrosomes/centrioles
- Cell wall
 - Composition (organic molecules)
- Plastids

- Differences between plant and animal cells
 - Shape
 - Organelles present or absent

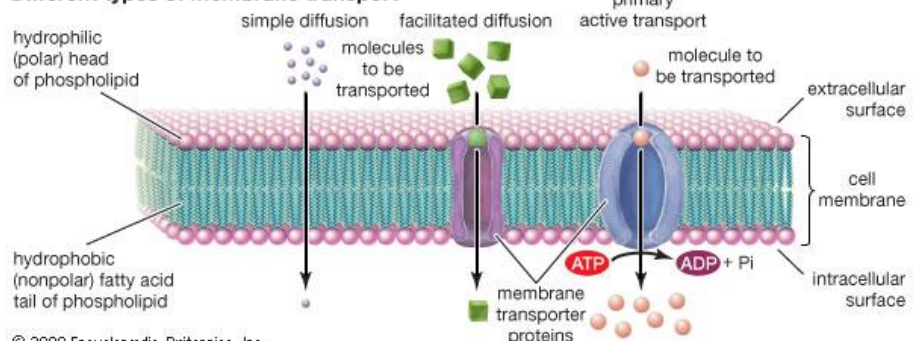
- Pathway for production of a protein and releasing them from cell (organelles involved)

Cell Transport

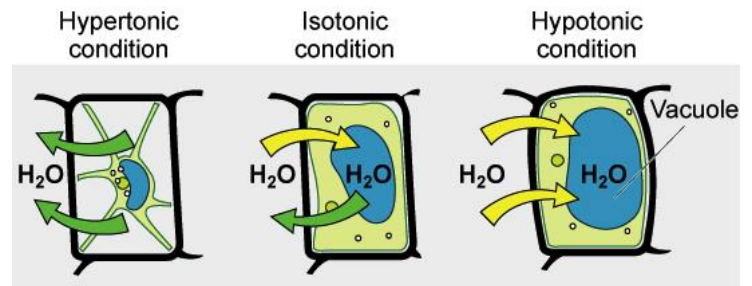
- Active transport
- Passive transport
- Diffusion
- Osmosis
- Facilitated diffusion
- Endocytosis
- Exocytosis



Different types of membrane transport

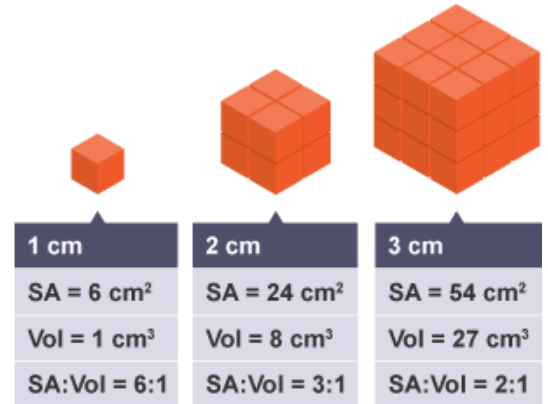


- Transport proteins
- Concentration gradient
 - Isotonic
 - Hypertonic
 - Hypotonic
- Effect of cell size/shape
 - Surface area to volume ratio
 - Effect of cell shape on surface to volume ratio
- Dynamic equilibrium
- Dialysis tubing



Homeostasis

- Definition
- Examples of homeostasis
- Negative feedback
- Positive feedback
- Homeostatic imbalances and responses



Scientific Method

- Steps of Scientific Method
- Controlled experiment (importance)
- Variables
 - Dependent variables (observed and measured)
 - Independent variables (manipulated)
 - Controlled variables (constants)
 - Control group
- Identifying variables
- Prokaryotes vs. Eukaryotes
- 3 parts of theory
- What organisms it applies to
- Robert Hooke
- Endosymbiotic theory
 - How it occurred
 - Evidence of theory with mitochondria and chloroplasts

Organic Compounds

- 4 types of organic compounds and where they are found in the cell
 - Carbohydrates
 - Lipids
 - Nucleic acids
 - Proteins
- Monomers and polymers
- Importance in the cell
 - Cell membrane
 - Microtubules
 - Cell energy
 - Cell transport
 - Genetic material
 - Enzymes
- Chemical indicator (iodine)

Types of Variables

Independent	Dependent	Controlled
The one thing you change. Limit to only one in an experiment.	The change that happens because of the independent variable.	Everything you want to remain constant and unchanging.
Example: The liquid used to water each plant.	Example: The height or health of the plant.	Example: Type of plant used, pot size, amount of liquid, soil type, etc.

