

Unit 2 Cells Test Study Guide

Lesson 4.1 "Discovering Cells"

- Cells are the basic unit of structure and function in living things.
- The invention of microscope made it possible for people to discover cells.
- The 3 points of the cell theory:
 - All living things are composed of cells.
 - Cells are the basic units of structure and function in living things.
 - All cells are produced from other living cells.
- Robert Hooke was the first person to observe cells and called them "tiny, rectangular rooms"

Lesson 4.2 "Looking Inside Cells" and Cellular Organization

- Plant cells have a cell wall and chloroplasts, while animal cells don't.
- Complete the chart:

Cell Structure/ Organelle	Function	Name in Cell City	Plant or Animal Cell?
Cell Wall	protects and supports cell.	<input checked="" type="checkbox"/>	plant
Cell Membrane	Controls what enters and leaves cell	gate	both
Nucleus	controls cell	city hall	both
Cytoplasm	holds everything in place	<input checked="" type="checkbox"/>	both
Mitochondria	produces energy	power plant	both
Ribosomes	produce proteins	construction	both
ER	moves materials around cell	transport company	both
Golgi Apparatus	receives, packages, and distributes materials	<input checked="" type="checkbox"/>	both
Vacuoles	store materials	storage tanks	both
Chloroplasts	capture energy from sunlight to make food	food processing plant	plant
Lysosomes	break down materials	waste disposal	both
Chromosomes	control the nucleus / contain instructions	<input checked="" type="checkbox"/>	both

- Specialized cells are found in (unicellular or multicellular) organisms.
- Put the levels of organization in order, starting with the smallest unit.

cell ⇒ tissue ⇒ organ ⇒ organ system ⇒ organism

Name: _____

8. A group of similar cells working together is called a(n) tissue.
A group of similar tissues working together is called a(n) organ.
A group of organs working together to perform a function is called a(n) organ system.
The entire living thing that carries out all basic life functions is called a(n) organism.
9. Epithelial means skin.
10. Osteo- as a prefix means bone.
11. Muscle cells are meant for movement.
12. A nerve cell is called a neuron.
13. Blood is not a cell, but instead a type of connective tissue.
14. Your organs are lined with (bone or epithelial) cells.

Lesson 4.3 "Chemical Compounds in Cells"

Chemical Compound	Examples (NOT a food example)
Carbohydrates	sugars, starches
Lipids	fats, oils, waxes
Proteins	enzymes
Nucleic Acids	DNA / RNA

15. Carbohydrates provide the cell with energy for immediate use. Lipids provide the cell with energy for later use.
16. Proteins help the cell with structure and function.
17. Nucleic Acids are compounds that contain instructions to direct the cell.

Lesson 4.4 "The Cell In Its Environment"

18. The cell membrane is called selectively permeable because it controls what substances come in and out of the cell.
19. Passive transport uses no energy, while Active transport does use energy.
20. In passive transport, molecules move from areas of high concentration to low concentration.
21. The examples of vanilla in a balloon, food coloring in water, and perfumes all demonstrate the process of diffusion because molecules are spreading from high to low concentration.
22. Osmosis and Diffusion are the two examples of passive transport.
23. Osmosis is the process of just water moving across the membrane.
24. In the egg lab, the corn syrup caused the egg to (shrink or swell), while the distilled water caused the egg to (shrink or swell).
25. Transport proteins use energy to pick molecules up across the membrane.
26. Cells use exocytosis to get rid of large molecules; they use endocytosis to bring in large molecules.