

Unit 4 Cells Test Study Guide

Lesson 4.1 "Discovering Cells"

- Cells are the basic unit of structure and function in living things.
- The invention of microscopes 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.

4. Robert Hooke was the first person to observe cells and called them "tiny, rectangular rooms"

Lesson 4.2 "Looking Inside Cells"

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

Cell Structure/ Organelle	Function	Name In City	Plant or Animal Cell?
Cell Wall	protect and support cell	<input checked="" type="checkbox"/>	plant
Cell Membrane	controls what comes in and out of cell	gate	both
Nucleus	controls cell's activities	city hall	both
Cytoplasm	fills space of cell	<input checked="" type="checkbox"/>	both
Mitochondria	produces energy	power plant	both
Ribosomes	produce proteins	construction site	both
ER	moves materials around cell	transport company	both
Golgi Apparatus	receives, packages, and distributes materials	<input checked="" type="checkbox"/>	both
Vacuoles	store food, water, wastes	storage tanks	both
Chloroplasts	create food for cell	Food Processing Plant	plant
Lysosomes	break down wastes and food	waste disposal plant	both

Name: Answer Key

6. Specialized cells are found in (unicellular or multicellular) organisms.

Lesson 4.3 "Chemical Compounds in Cells"

7. Complete the chart:

Chemical Compound	Examples
Carbohydrates	sugars, starches
Lipids	fats, oils, waxes
Proteins	meats, enzymes
Nucleic Acids	DNA, RNA

8. Sugar molecules can combine with one another and form large molecules called starches.
9. Enzymes are important because they speed up chemical reactions.
10. In the Liver and Potato lab, Livers contained enzymes, but the potatoes did not.

Lesson 4.4 "The Cell In Its Environment"

11. The cell membrane is called selectively permeable because it controls what comes in and out of the cell.
12. Passive transport uses no energy, while active transport does use energy.
13. In passive transport, molecules move from areas of high concentration to low concentration.
14. The examples of vanilla in a balloon, food coloring in water, and perfumes all demonstrate the process of diffusion.
15. Diffusion and Osmosis are passive transport.
16. Cells use exocytosis to get rid of large molecules; they use endocytosis to bring large molecules.

Animal Tissues:

17. Epithelial tissue covers and protects. Ex: Chicken Wing Skin
18. Red blood cells carry oxygen while white blood cells fight disease.
19. Tissue that connects bone to bone is ligament. The tissue that connect muscle to bone is called tendon.

Dissection Information:

20. Earthworms belong to the phylum Annelida.
21. Earthworms breathe through their skin.
22. The mouth, pharynx, esophagus, crop, gizzard, and intestine belong to the digestive system.
23. Frogs have a 3 chambered heart.
24. The liver makes a substance called bile that is stored in the gall bladder.