

Fifth Grade “Cells: Structures and Processes” Assessment

- 1a. All living things are made up of _____.
- a. cells
 - b. tissues
 - c. organisms
 - d. systems

1b. All living things are made up of _____.

1c. Explain what cells are and how they were discovered:

- 2a. The part of the cell that lets things in and out is called the _____.
- a. mitochondria
 - b. cell membrane
 - c. amoeba

- 2b. What is the function of the cell membrane?
- a. selectively allows substances in and out of the cell
 - b. acts as the cell's control center
 - c. carries out the chemical activities of the cell
 - d. store food, water, or wastes

2c. Compare the cell membrane to a door.

- 3a. What part of the cell is surrounded by a membrane, contains genetic material, and divides for reproduction?
- a. nuclear membrane
 - b. nucleus
 - c. cytoplasm
 - d. mitochondria

3b. The part of the cell that is surrounded by a membrane, contains genetic material, and divides for reproduction is called the _____.

3c. Explain three characteristics and functions of the nucleus:

- 4a. What part of the cell is the jelly-like substance that contains organelles?
- a. nucleus
 - b. cell wall
 - c. cell membrane
 - d. cytoplasm

4b. What part of the cell is the jelly-like substance that contains organelles?

4c. Describe the relationship of cytoplasm to the other organelles:

5a. This organelle produces the cell's energy:

- a. mitochondria
- b. vacuoles
- c. nucleus
- d. ribosome

5b. Explain what the mitochondria does:

5c. Compare and explain the functions of mitochondria and ribosome:

6a. The organelles which store food, water and wastes are called _____.

6b. What three things do vacuoles store?

- 1. _____
- 2. _____
- 3. _____

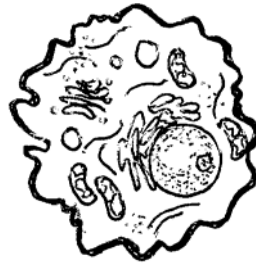
6c. Compare a vacuole to a storage tank:

7a. Plant cells are different from animal cells because they have cell walls and _____.

7b. How are plant cells different from animal cells?

1. _____
2. _____

7c. In the following pictures, label each cell plant or animal and then identify by labeling the two differences in the plant cell.



- 8a. Single-celled organisms without a nucleus are called _____.
- a. protists
 - b. monerans
 - c. plants
 - d. animals

8b. Single-celled organisms without a nucleus are called _____.

8c. What is the difference between monerans and protists?

9a. Amoeba and protozoans are examples of _____.

9b. Give an example of a single celled organism.

9c. Explain what protozoan means in Greek and describe their life form.

10a. Which of the following statements is not true?

- a. muscle cells are long and thin
- b. cells are different shapes in order to perform different functions
- c. red blood cells are tiny and rounded
- d. cells are all the same shape and size

10b. Why are cells shaped differently? Give one example.

10c. Explain the relationship between a cell's shape and its functions. Give two examples.

11a. Which is larger in a living organism: a tissue or a system?

11b. Put the following in order from smallest to largest: tissues, systems, cells, organs.

11c. Explain the relationship between tissues, systems, cells, and organs.

- 12a. In complex organisms, groups of cells form _____.
- a. systems
 - b. tissues
 - c. organs
 - d. neurons

12b. What do groups of cells form?

12c. Explain how cells form tissue in plants and animals.

- 13a. Tissues with similar functions form _____.
- a. organs
 - b. systems
 - c. cells
 - d. neurons

13b. Tissues with similar functions form _____.

13c. Explain how organs are formed in plant and animal tissues.

- 14a. Organs that work together form _____.
- a. tissues
 - b. systems
 - c. cells
 - d. neurons

14b. Organs that work together form _____.

14c. Give an example of organs that work together in a system.

The following Colorado Model Content Standards are covered in this assessment by the questions indicated:

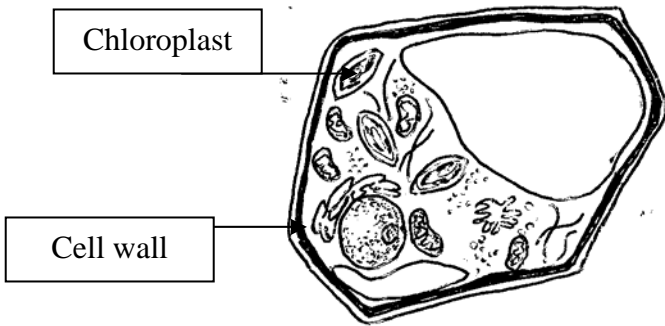
Questions 2a, 2b, 2c, 3a, 3b, 3c, 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b, 6c: Standard 5-8.3.3.a describing the observable components and functions of a cell.

Questions 7a, 7b, 7c, 8a, 8b, 8c, 10a, 10b, 10c, 12a, 12b, 12c: Standard 5-8.3.3.b comparing and contrasting the basic structures and functions of different types of cells.

Answer Key

- 1a. a. cells
1b. cells
1c. Acceptable answers could include:
-a cell is the smallest part of any living thing that is able to function by itself; plants and animals are made up of tiny units made of cells
-cells were discovered over 300 years ago by Robert Hooke
- 2a. b. cell membrane
2b. a. selectively allows substances in and out of the cell
2c. Acceptable answers could include:
-The cell membrane allows food, water and oxygen into the cell and lets waste out, much like a door allows people and things to go in and out of it.
- 3a. b.
3b. nucleus
3c. Acceptable answers could include:
-surrounded by a nuclear membrane, contains genetic material, and divides for reproduction
- 4a. d. cytoplasm
4b. cytoplasm
4c. Acceptable answers could include:
-the cytoplasm is a substance in which the other organelles move around in, thus it surrounds the organelles
- 5a. a. mitochondria
5b. the mitochondria are cell organelles which produce the cell's energy through respiration
5c. Acceptable answers could include:
-The mitochondria and ribosomes are both organelles inside the cell. They both produce items for the cell. The mitochondria produce the cell's energy through respiration. The ribosomes produce the cell's protein.
- 6a. vacuoles
6b. hold food, water, and wastes
6c. Acceptable answers could include:
-Vacuoles are organelles inside the cell that hold food, water, and waste, much the same way as a storage tank would hold material.
- 7a. chloroplasts
7b. cell walls and chloroplasts

7c. Acceptable answers could include:



Plant cell



Animal cell

8a. b. monerans

8b. monerans

8c. Acceptable answers could include:

-The difference between a monerans and a protist is that a moneran is a single-celled organism without a nucleus and a protist is a single-celled organism with a nucleus.

9a. single-celled organisms

9b. amoeba, protozoans, some algae, euglena, paramecium

9c. Acceptable answers could include:

-“proto” means early and “zoan” means animal. Protozoans are single-celled organisms that are the most primitive form of animal life.

10a. d. cells are all the same shape and size

10b. Acceptable answers could include:

-Cells can be different shapes depending on the jobs they do. Muscle cells are long and thin so they can expand and contract to help the body move. Red blood cells are tiny and rounded so they can squeeze through blood vessels and bring oxygen to other cells of the body. The cells in a tree trunk are long and thin, with tubes to transport food and water up and down the tree. The cells in plant’s leaves are flattened to catch the maximum amount of the sunlight they use to make food.

10c. Acceptable answers could include:

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11a. systems

11b. cells, tissues, organs, systems

11c. Acceptable answers could include:

-In complex organisms, groups of cells form tissues, tissues with similar functions form

organs, organs work together within a system.

12a. b. tissues

12b. tissues

12c. Acceptable answers could include:

-In animals, skin cells form into skin tissue or muscle cells form muscle tissue.

-In plants, the skin of an onion contains individual cells or the bark of a tree also has individual cells that make it up or form the tissue.

13a. a. organs

13b. organs

13c. Acceptable answers could include:

-In animals, the muscle tissue forms organs like the heart, stomach, or brain.

-In plants, the tissues form organs like the root or flower

14a. b. systems

14b. systems

14c. Acceptable answers could include:

-digestive, circulatory, respiratory, skeletal, muscular, endocrine, or nervous systems