

Skills Worksheet

Directed Reading B

Section: The Characteristics of Cells (pp. 114–119)

1. The smallest functional and structural unit of all living organisms is

a(n) **cell** _____.

CELLS AND THE CELL THEORY

cells 2. What did Robert Hooke call the boxes cork seemed to be made of?

- a. bark
- b. rooms
- c. cells
- d. cartons

cell walls 3. What part of plant and fungus cells was easy for Hooke to see?

- a. cell membranes
- b. cell nuclei
- c. cell walls
- d. cell outlines

pond scum 4. In 1673, Anton van Leeuwenhoek saw single-celled organisms in

- a. distilled water.
- b. bath water.
- c. pond scum.
- d. salt water.

5. What kind of cells have cell walls?

bacteria, plants and fungi _____

6. Today, the single-celled organisms Leeuwenhoek called *animacules*

are called **protists** _____.

7. What are the three parts of the cell theory?

- 1. All organisms are made up of one or more cells
- 2. The cell is the basic unit of all living things
- 3. All cells come from existing cells.

CELL SIZE

8. What is the yolk of a chicken egg?

They are stored chemical nutrients used by the chick to grow _____

Directed Reading B *continued*

9. Where does a cell take in food and get rid of wastes?

through their outer surface (the cell membrane)

10. What limits the size of a cell?

If a cell gets too large it's volume will be too much relative to it's surface area.

11. How is the surface area-to-volume ratio of a cell calculated?

= surface area divided by volume

PARTS OF A CELL

Match the correct description with the correct term. Write the letter in the space provided.

cell membrane

12. a protective layer that covers a cell's surface and acts as a barrier between the cell and its environment

a. DNA
b. cell membrane

cytoplasm

13. the fluid and its contents inside a cell

c. nucleus
d. organelle

organelle

14. a small body inside a cell's cytoplasm that performs a specific function in the cell

e. cytoplasm

DNA

15. the genetic material that carries information needed to make new cells and new organisms

nucleus

16. a membrane-bound organelle in a eukaryotic cell where the cell's DNA is stored

TWO KINDS OF CELLS

17. What four parts do all cells have?

1. a cell membrane
2. genetic material (DNA or RNA)
3. ribosomes (to make proteins)
4. cytoplasm (an interior fluid environment)

18. What are the two basic kinds of cells?

1. prokaryotes - do NOT have a nucleus
2. eukaryotes - DO have a true nucleus

Directed Reading B *continued*

19. Single-celled organisms without a nucleus are called

bacteria

20. Describe the DNA of a prokaryote.

it is in a circular shape in a region in the middle of the cytoplasm.

21. What are ribosomes?

small organelles that are not bound by a membrane, they are the sites of production of proteins

22. How do eukaryotes compare in size to prokaryotes?

eukaryotes have a membrane bound nucleus to hold their DNA, prokaryotes don't have a nuclear membrane, just a DNA region.

23. What does a cell of a eukaryote have to hold DNA that a cell of a prokaryote does not have?

a nucleus, with a membrane and little pores in the membrane

24. An organism made of cells that have a nucleus enclosed by a membrane

is a(n) eukaryote