

SECTION | THE CELL IS THE BASIC UNIT OF LIVING THINGS.

1.1 Reading Study Guide A**BIG IDEA** All living things are made up of cells.**KEY CONCEPT** The cell is the basic unit of living things.**Vocabulary****organism** an individual form of life that uses energy to carry out activities**unicellular** consisting of a single cell**multicellular** consisting of many cells**microscope** an instrument that uses lenses to make an object appear bigger than it really is**bacteria** tiny single-celled organisms**Review**

1. If the sentence is true, write *true*. If the sentence is false, replace the underlined term to make the sentence true.

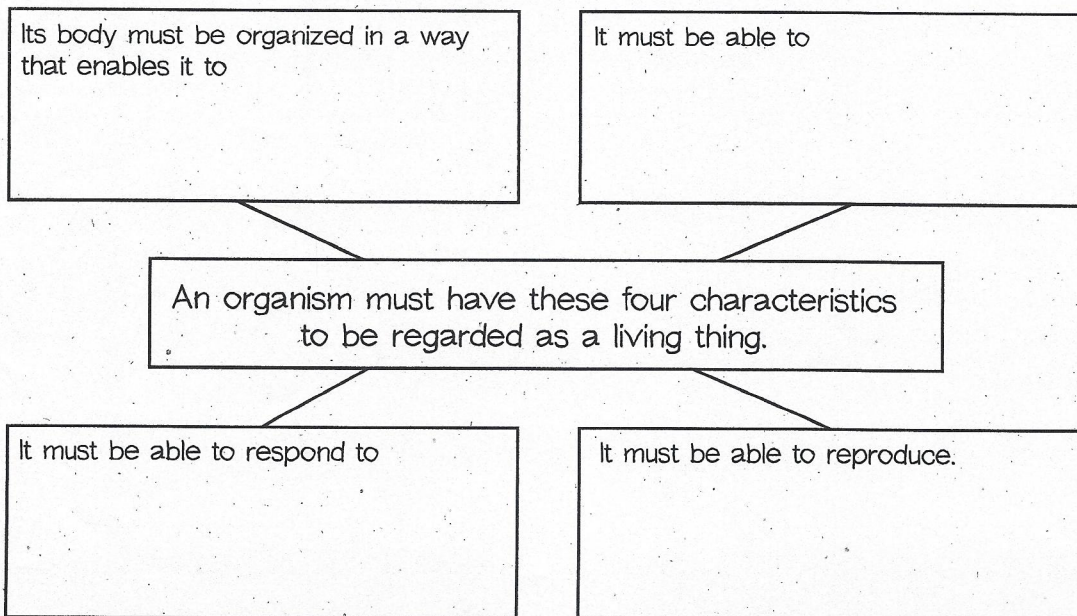
A theory explains what is observed in nature. _____

Living things do not have common characteristics. _____

Living things do not have common needs. _____

Take Notes**I. Living things are different from nonliving things (p. 9)****A. Characteristics of Life and Needs of Life (p. 10)**

2. Fill in the main idea web for the main idea shown.



II. All living things are made of cells. (p. 11)

3. In the table below, write a definition and one example for each word.

	Definition	Example
Unicellular		
Multicellular		

III. The microscope led to the discovery of cells. (p. 12)

4. How did the microscope help people learn about cells?

IV. Cells come from other cells. (p. 13)

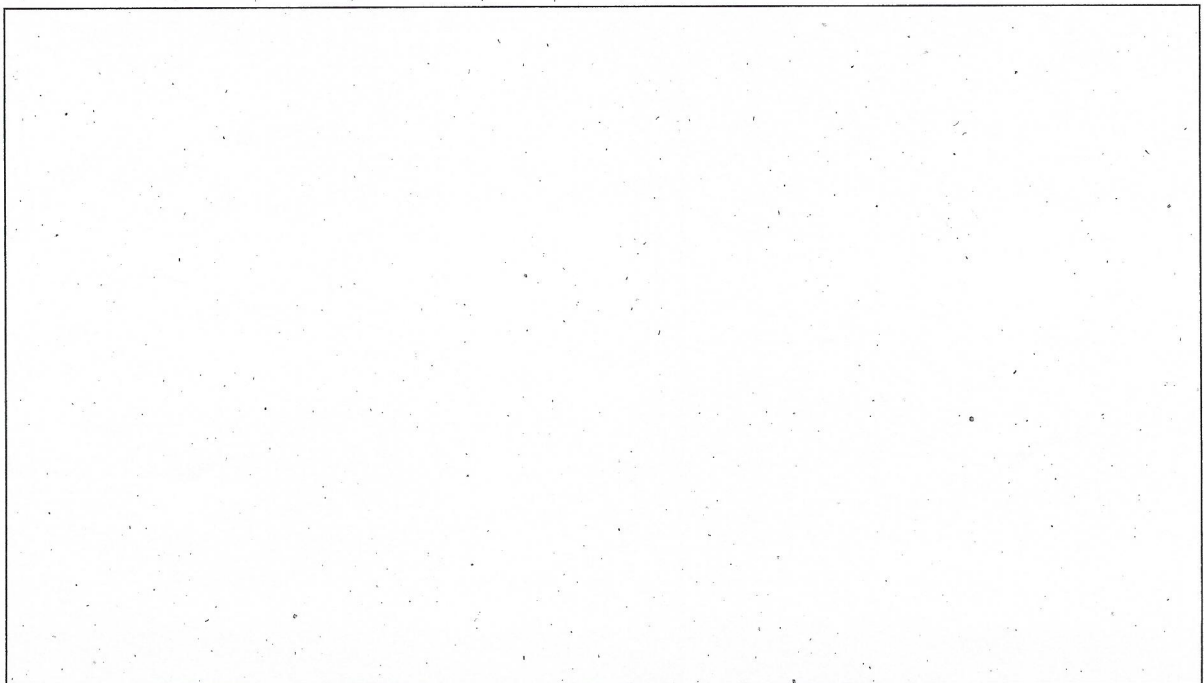
5. Where must all cells come from?

V. The cell theory is important to the study of biology. (p. 14)

6. Why are theories important?

A. Louis Pasteur and Bacteria and Spontaneous Generation (p. 14)

7. In the space below, draw what Pasteur's flask looked like after it was exposed to air for 2–3 days.



SECTION | MICROSCOPES ALLOW US TO SEE INSIDE THE CELL.

1.2 Reading Study Guide A**BIG IDEA** All living things are made up of cells.**KEY CONCEPT** Microscopes allow us to see inside the cell.**Vocabulary****cell membrane** a protective covering enclosing the entire cell**cytoplasm** a thick fluid inside the cell membrane**nucleus** a structure inside the cell enclosed in its own membrane**eukaryotic cell** a cell whose DNA is stored in a nucleus**prokaryotic cell** a cell that has no nucleus**organelle** any part of a cell enclosed by a membrane**cell wall** a tough outer covering that lies just outside the cell membrane, present only in plant cells**chloroplast** organelles in plant cells that use the Sun's energy to make sugar**mitochondria** organelles that release stored energy, mostly from sugars**Review**

1. What is the most fundamental unit of life according to the cell theory? _____
What instrument is used to study cells? _____

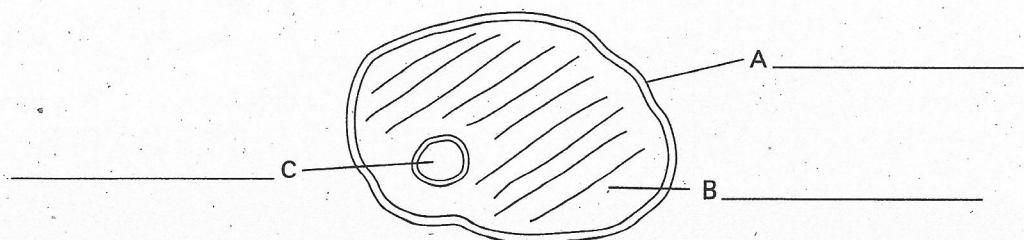
Take Notes**I. The microscope is an important tool. (pp. 18-19)**

2. For each type of microscope, write one advantage and one disadvantage.

	Advantage	Disadvantage
Light microscope		
Scanning electron microscope		

II. Cells are diverse. (p. 20)

3. Label the three cell parts shown below.



III. Plants and animals have eukaryotic cells. (p. 21)4. Fill in the four square diagram for *organelle*.

Definition:	ORGANELLE	Characteristics: its activities are separate from other organelles
Examples:		Nonexamples:

A. Structures That Process Information, Organelles That Provide Energy, and Organelles That Process and Transport (pp. 23–24)

5. Circle the organisms that have mitochondria in their cells. Draw a square around the organisms that have chloroplasts in their cells. Draw a triangle around the organisms whose cells have cell walls.

**B. Organelles for Storage, Recycling, and Waste (p. 24)**

6. What does the central vacuole in a plant cell do?

7. Which organisms in the picture above do not have a central vacuole in their cells?

SECTION 1.3 DIFFERENT CELLS PERFORM VARIOUS FUNCTIONS.

1.3 Reading Study Guide A

BIG IDEA All living things are made up of cells.

KEY CONCEPT Different cells perform various functions.

Vocabulary

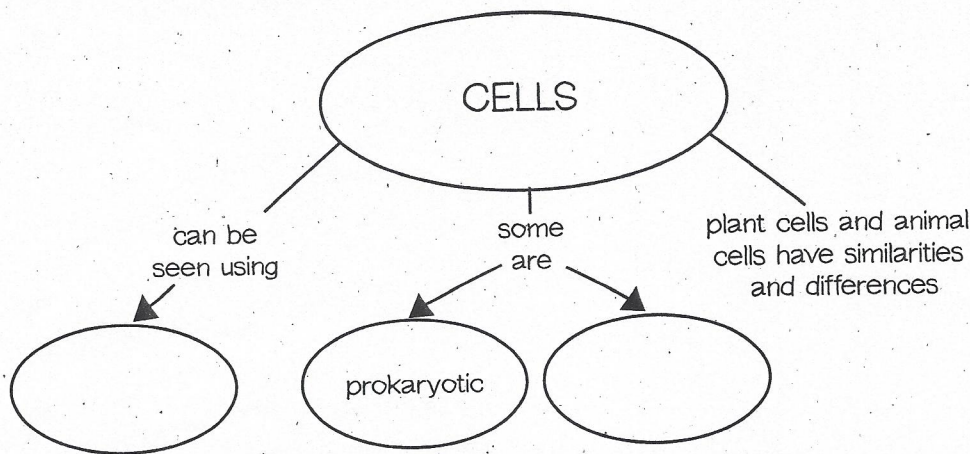
specialization the particular organization of a cell and its organelles that allows it to do a specific job

tissue a group of similar cells organized to do a specific job

organ different tissues that work together to perform a particular function

Review

1. Fill in the concept map for *cells*.



Take Notes

I. **Organisms can be classified by their cell type. (p. 26)**

2. Do most organisms on Earth have one cell or many cells? _____

A. **Archaea and Bacteria (p. 27)**

3. Mark an X in the column if the description fits.

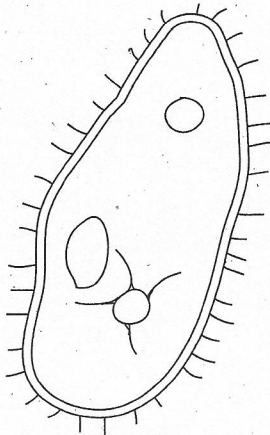
	Archaea	Bacteria
Have a tough cell wall		
First discovered in the 1970s		
Have no nucleus		

B. Eukarya (p. 28)

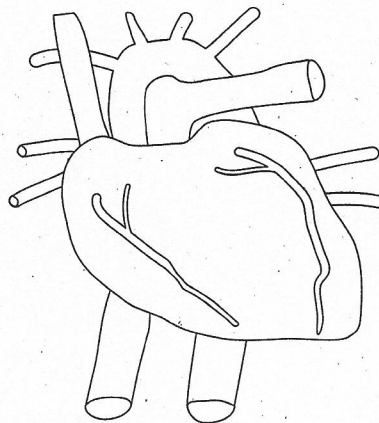
4. What are some examples of organisms that are eukaryotes?
- _____

II. Cells in multicellular organisms specialize. (p. 28)**III. A multicellular organism is a community of cells. (pp. 29–31)**

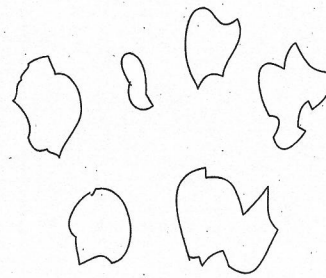
5. Circle the organ. Draw a triangle around the single cell. Draw a square around the tissue.



Paramecium



Heart



Flakes of skin

IV. Scientists use models to study cells. (p. 32)

6. Fill in the main idea web for the main idea shown.

Making a cell model is one way to show how the parts of a cell fit together.

A scientific model can be

Scientific models provide insight into cells.

Scientists could understand DNA after

Real cells often look very