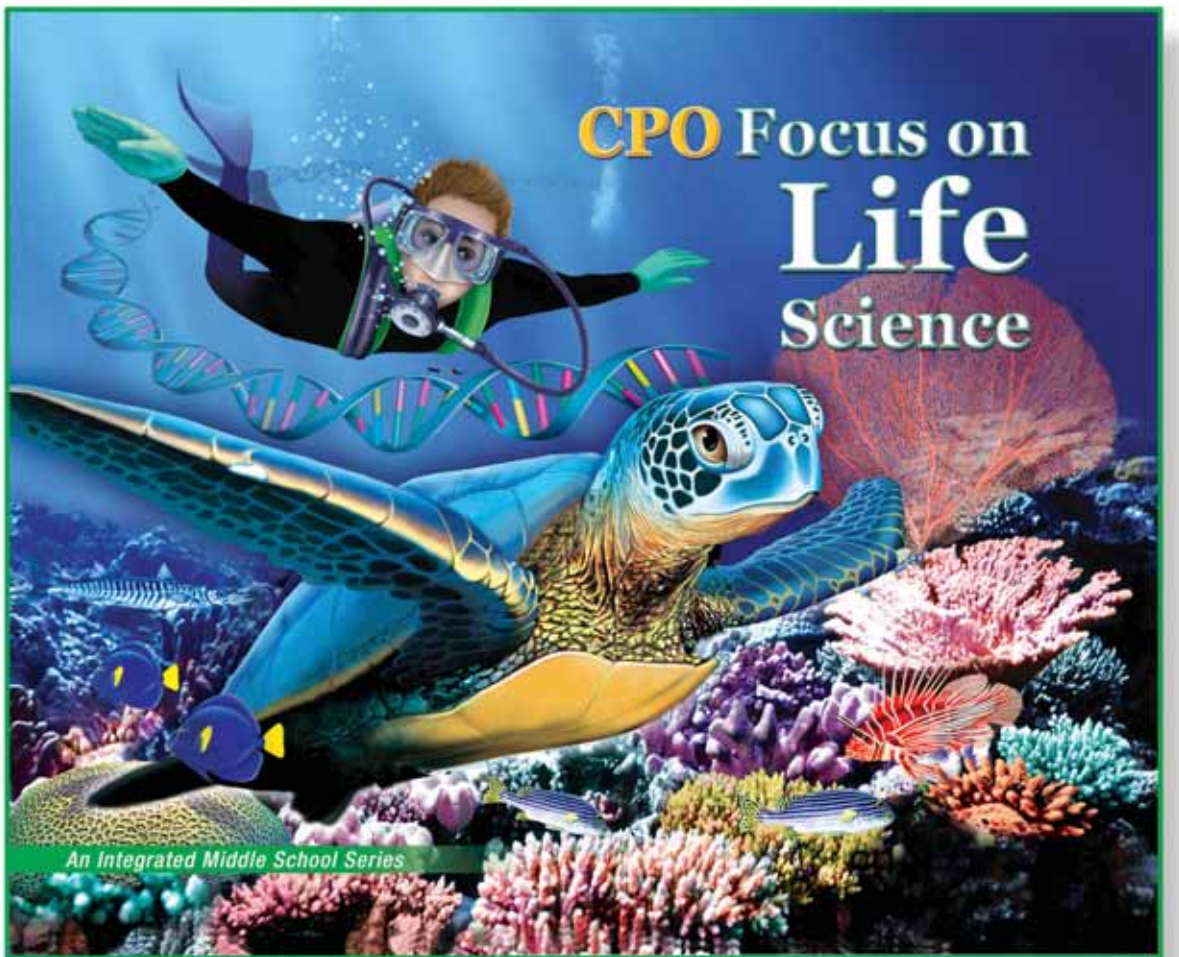

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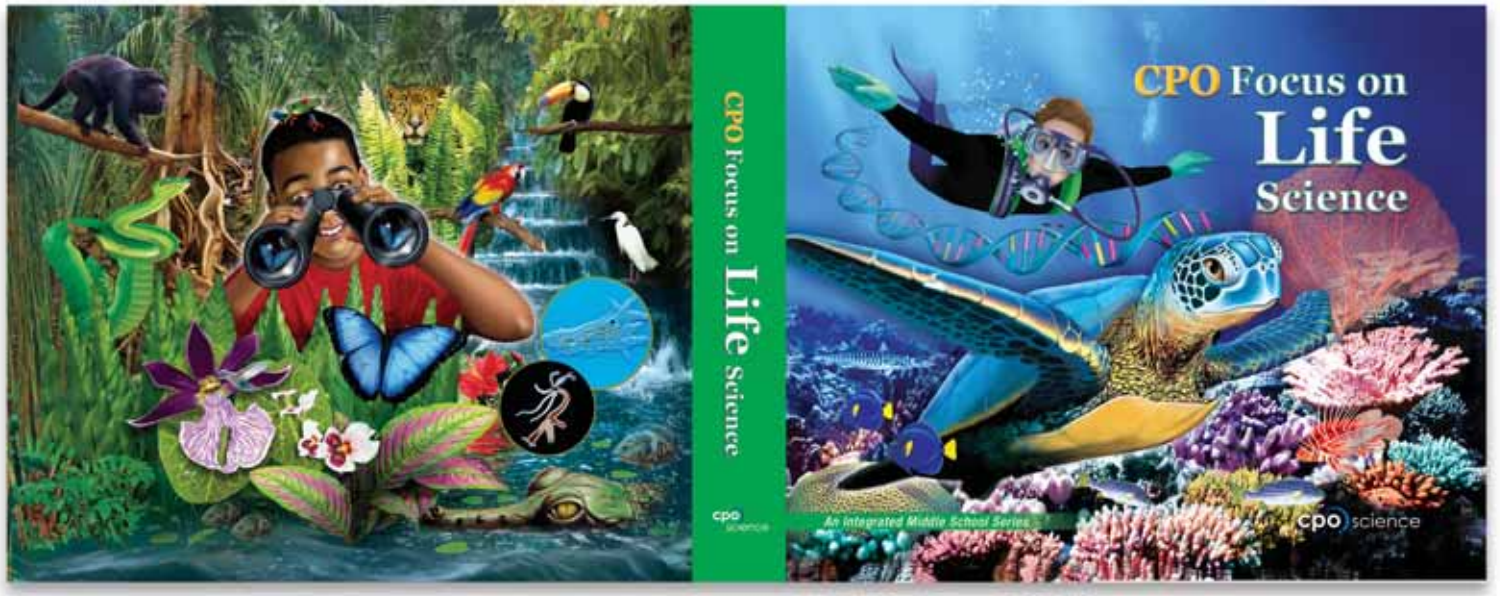

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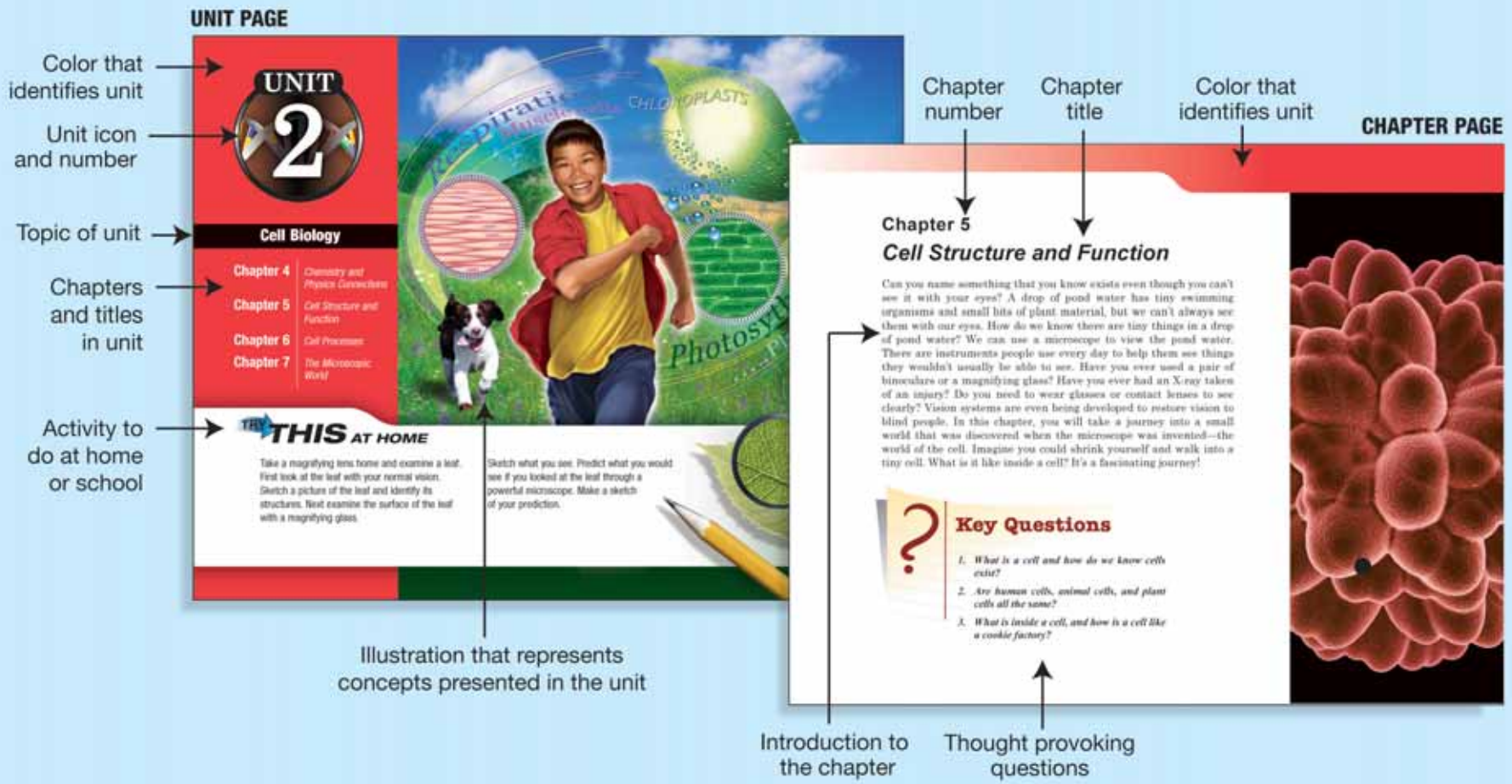
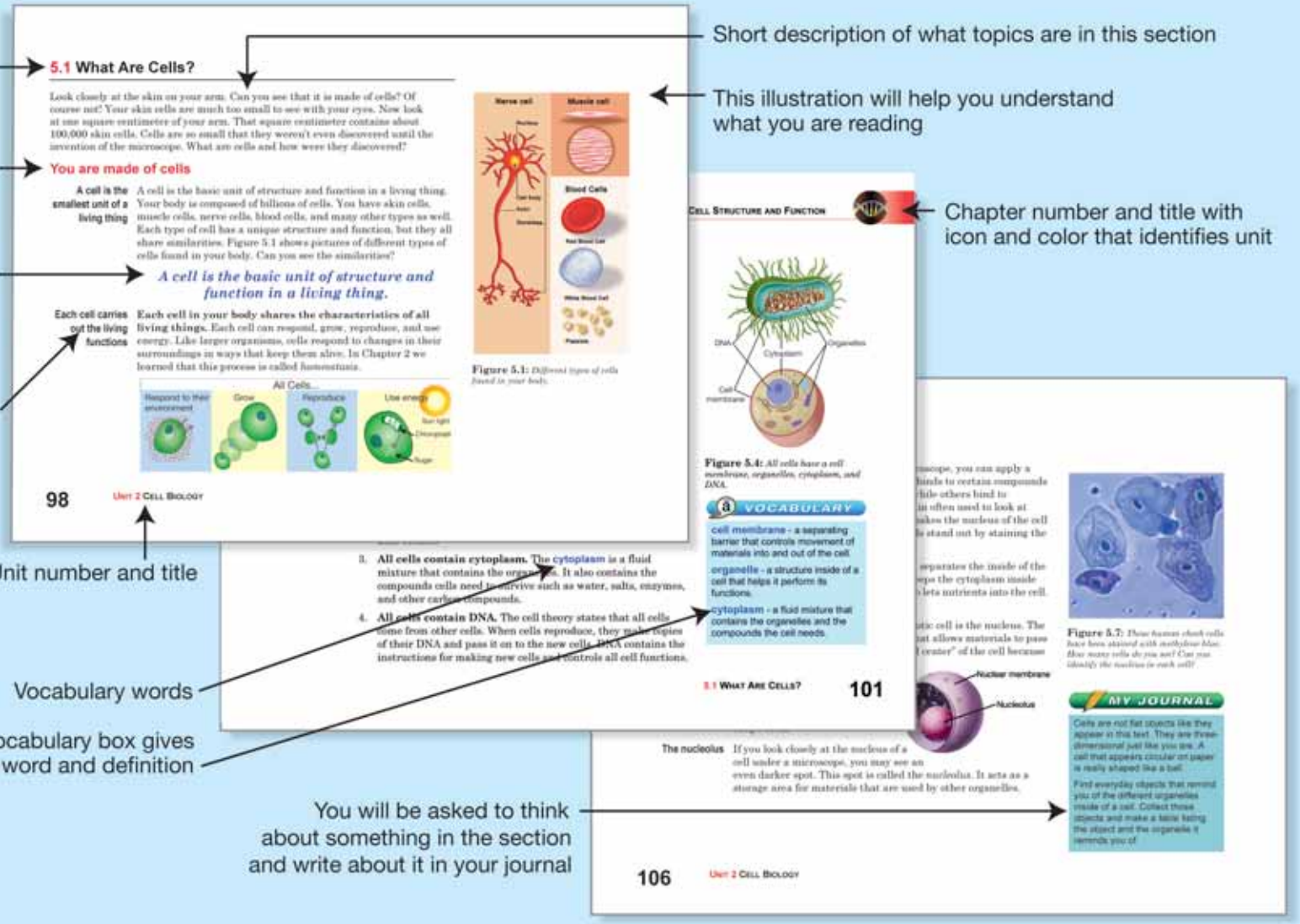
On each page of the student text you will find aids to help find information, understand concepts and answer questions. The following introduction includes sample pages with indicators that point out the page contents and reading aids.

Unit Pages and Chapter Pages



Student Text Pages



Connection Pages and Activity Pages

CONNECTION

The **Connection** is like a magazine article about an interesting science fact. There is a Connection at the end of each chapter.

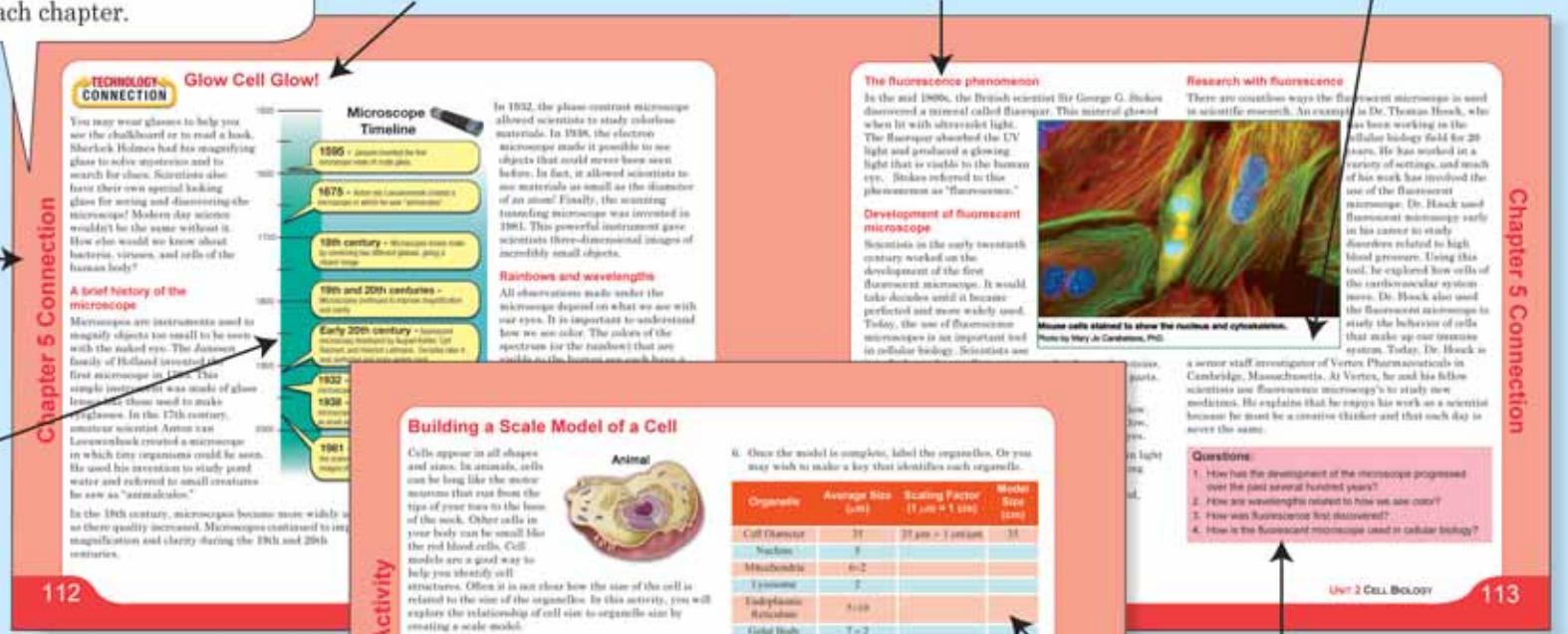
Title of the Connection

Main idea heading

Explanation of photo

Unit color and Chapter number

Timeline chart



Questions to help you understand the article's main idea

Data table for recording results

Questions to help you apply what you learned from this activity

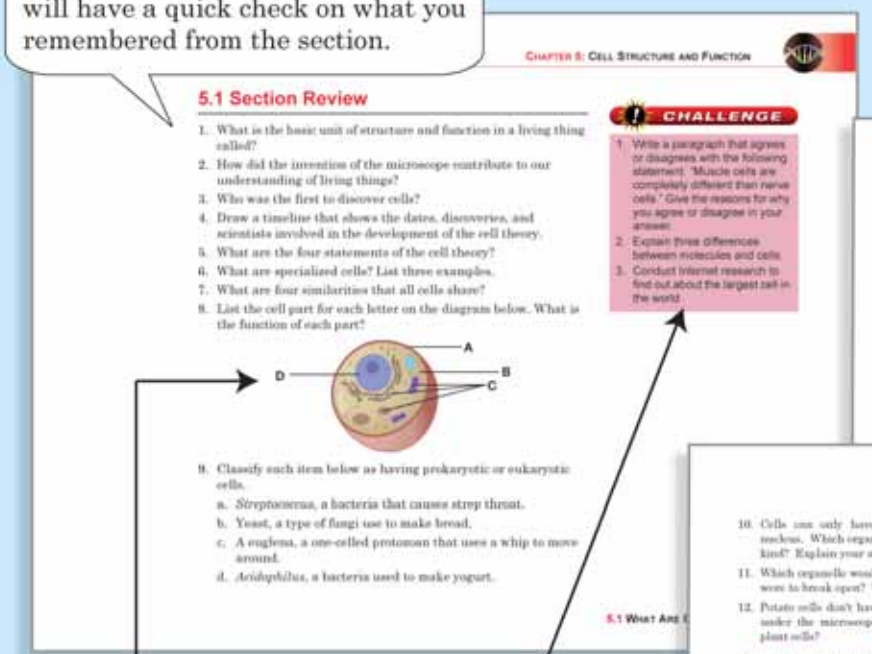
ACTIVITY

An Activity is another hands-on project that you can do in school or at home. This activity will help you learn more about the information in the chapter.

Assessment Pages

SECTION REVIEW

By answering these questions, you will have a quick check on what you remembered from the section.



CHAPTER 5: CELL STRUCTURE AND FUNCTION

5.1 Section Review

1. What is the basic unit of structure and function in a living thing called?
2. How did the invention of the microscope contribute to our understanding of living things?
3. Who was the first to discover cells?
4. Draw a timeline that shows the dates, discoveries, and scientists involved in the development of the cell theory.
5. What are the four statements of the cell theory?
6. What are specialized cells? List three examples.
7. What are four similarities that all cells share?
8. List the cell part for each letter on the diagram below. What is the function of each part?

9. Classify each item below as having prokaryotic or eukaryotic cells.
   a. *Streptococcus*, a bacteria that causes strep throat.
   b. Yeast, a type of fungi use to make bread.
   c. A euglena, a one-celled protozoan that uses a whip to move around.
   d. *Acidophilus*, a bacteria used to make yogurt.

CHALLENGE

1. Write a paragraph that agrees or disagrees with the following statement: "Muscle cells are completely different than nerve cells." Give the reasons for why you agree or disagree in your answer.
2. Explain three differences between molecules and cells.
3. Conduct Internet research to find out about the largest cell in the world.

5.1 WHAT ARE

Graphs,diagrams, or charts will help you in answering questions

This gives you an interesting way to learn more about information in the section

These questions ask you to answer questions in writing or solve a problem

CHAPTER TEST

These questions are answered after reading the chapter.

This tells you where to find the information

Chapter 5 Test

Vocabulary

Select the correct term to complete the sentences.

cell membrane	cytoskeleton	mitochondria
cell wall	endoplasmic reticulum	organelle
nucleus	golgi body	prokaryotic
cytoplasm	lysosome	ribosome

Section 5.1

1. Bacteria are _____ cells.
2. The _____ controls what enters and exits the cell.
3. A structure inside a cell that does a certain job is called an _____.
4. The fluid mixture with organelles and other vital compounds in cells is the _____.
5. Eukaryotic cells all have a _____ that contains DNA.

Concepts

Section 5.1

1. Which of the following is not part of the cell theory?
   a. Cells only come from existing cells.
   b. All of an organism's life functions occur within cells.
   c. The two major types of cells are prokaryotic cells and eukaryotic cells.
   d. All living things are made of one or more cells.
2. Identify each characteristic as either a feature of prokaryotic cells (P) or as a feature of eukaryotic cells (E).
   a. _____ name means "before nucleus" in Greek
   b. _____ believed to have originated 2 billion years ago
   c. _____ DNA is contained in nucleus
   d. _____ larger of the two types - 10 times the size of the other

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10. Cells can only have one of certain organelles like the nucleus. Which organelles can a cell have many of the same kind? Explain your answer.
11. Which organelle would cause a lot of damage to the cell if it were to break open? Why?
12. Potato cells don't have chloroplasts. If you saw these cells under the microscope, how could you tell that they were plant cells?

Math and Writing Skills

Section 5.1

1. Imagine that you are Anton van Leeuwenhoek and you have just observed the first blood cells, bacteria, and single-celled protists. Write a letter to a friend describing your amazing discoveries.
2. Write an imaginary dialogue that could have taken place between Matthias Schleiden and Theodore Schwann after they observed plant and animal tissue under a microscope.
3. Many of the cells in your body are 0.01 mm long. Use that measurement to complete these calculations.
   a. An amoeba – a unicellular protist – is 1 mm long. How many body cells would you have to stack end to end to equal the size of an amoeba?
   b. Figure out what your height is in millimeters by multiplying your height in meters by 1000. How many body cells would you have to stack end to end to equal your height?
   c. The length of a swimming pool is 25,000 mm. How many body cells would you have to stack end to end to equal the length of the pool?
   d. Prokaryotic cells are approximately 1/10 the size of eukaryotic cells. How big are prokaryotic cells?
4. If you were trying to classify an unknown organism by looking at its cells, what could its cells tell you?

Section 5.2

5. Describe what goes on in a typical animal cell. Be sure to mention all the organelles listed in the text.
6. Which organelles does a spinach cell have that a rabbit cell does not? Explain your answer.
7. Explain the connection between a wilted plant and cell parts like the vacuole and the cell wall.

Chapter Project

Cells have organelles with weird names like golgi body and endoplasmic reticulum. It is often helpful to invent a way to help you remember the names of the structures and their functions. Create a song or poem about cell structure, using the guidelines below. Record the song or poem and play it back for the class or perform it live. If you don't like solo work, join some classmates and do this as a group project. Make sure everyone contributes verses to the song or poem!

1. Choose one type of cell, either a plant cell or an animal cell.
2. Choose a popular song for the melody or rap. If you create a poem, make the verses rhyme.
3. The song or poem must include each structure listed on the animal or plant cell diagram in your book. In addition to naming the structures, you must use the song or poem to help you remember the function of each structure.
4. Submit your creation for approval, memorize it, and then share the song or poem with your classmates. When it comes time for a written test on cell structure, you might be humming a tune to help you remember the answers!

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This gives you a different way of practicing or learning information from the chapter

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