

TO GO TO ANY OF THE PAGES LISTED BELOW, CLICK ON ITS TITLE

CHAPTER 6 Simple Organisms	1
6-1 What is the Kingdom Monera? Lesson Review	2
6-2 Why do scientists study bacteria? Lesson Review	3
Bacteria and Food Poisoning Enrichment Activity for Lesson 6-2	4
6-3 What is the Kingdom Protista? Lesson Review	5
6-4 What are algae and slime molds? Lesson Review	6
Comparing Algae Enrichment Activity for Lesson 6-4	7
6-5 What is the Kingdom Fungi? Lesson Review	8
THE BIG IDEA Integrating Health: What simple organisms exist in our daily lives? Lesson Review	9
6-6 How do yeasts and molds reproduce? Lesson Review	10
Comparing Fungi Enrichment Activity for Lesson 6-6	11
Chapter 6 Key Term Review	12
Chapter 6 Test	13
Chapter 6 Answer Key	16

6-1 What is the Kingdom Monera?

Lesson Review

PART A In each box below, draw a picture of the type of bacteria noted. Write a brief description of each bacteria in the line below each picture.

Bacilli	Cocci	Spirilla
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PART B Complete the following.

1. All bacteria are classified in the Kingdom _____ .
2. Some bacteria have _____ that help them move.
3. Bacteria are simple, _____ organisms.
4. A bacterium with a protective wall is called an _____ .
5. _____ are thought to be the most primitive type of bacteria.

Skill Challenge

Skills: *classifying, comparing*

Complete the table below by placing a check mark in the correct column.

Trait	Characteristic of All Bacteria	Characteristic of Some Bacteria
1. contains cytoplasm		
2. does not have a nucleus		
3. has a cell wall		
4. contains chlorophyll		
5. lives off of chemicals from deep-sea vents		
6. has flagella		
7. can form a protective wall		
8. has a cell membrane		

6-2 Why do scientists study bacteria?

Lesson Review

Complete the following. Write your answers in the spaces provided.

1. Who was Louis Pasteur? _____
2. What are two ways in which bacteria are important to the digestive system? _____

3. What name is given to bacteria that change nitrogen into compounds that plants can use?

4. What is decomposition? _____

5. What are two ways to prevent or slow down the action of harmful bacteria in foods? _____

6. How are some types of bacteria harmful to plants? _____

Skill Challenge

Skills: *classifying, researching*

Complete the table below by listing the advantages and disadvantages of each method of food preservation. Use your text or other reference material for more information.

METHODS OF FOOD PRESERVATION		
Preservation Method	Advantages	Disadvantages
Canning		
Pickling		
Freezing		
Drying		

Bacteria and Food Poisoning

Enrichment Activity for Lesson 6-2

Skills: identifying, researching, inferring

Food poisoning is an illness caused by eating food that is contaminated by bacteria. The bacteria release poisons, or toxins, into the food. When eaten, the toxins cause a person to become ill.

PART A Use reference materials to identify the way each of the following kinds of bacteria cause food poisoning. List the symptoms associated with each type of food poisoning.

1. *Clostridium botulism*: _____

2. *Staphylococcus aureus*: _____

3. *Salmonella typhimurium*: _____

PART B Use reference materials to find answers to the questions below.

1. A person who has eaten food contaminated by staphylococci usually begins to feel ill within a few hours of eating. A person who has eaten food contaminated by salmonella may not feel ill until 12 hours after eating. Why does it take so long for the symptoms of salmonella food poisoning to appear? _____

2. Raw meat often contains bacteria that can cause food poisoning. The heat of normal cooking destroys these bacteria. Why is it important to thoroughly wash a knife that was used to cut raw meat? _____

3. Normal refrigerator temperature stops the growth of bacteria on food. Overstocking a refrigerator causes an increase in air temperature inside the refrigerator. How could overstocking a refrigerator lead to food poisoning? _____

6-3 What is the Kingdom Protista?

Lesson Review

PART A Complete the following. Write your answers in the spaces provided.

1. What three groups of organisms are classified as protists? _____

2. Why are protozoans sometimes called animal-like protists? _____

3. Name three examples of animal-like protists. _____

4. What are three structures that protists use for moving about on their own? _____

PART B Write *true* if the statement is true. If the statement is false, change the underlined term to make the statement true.

1. The cells of all protists contain chlorophyll.
2. Protists that can make their own food are often called animal-like protists.
3. Protists cells do not have a nucleus.

Skill Challenge

Skills: *organizing, comparing*

Write a description of each of the three types of animal-like protists listed in the table.

CHARACTERISTICS OF PROTISTS	
Organism	Description
Amoeba	
Paramecium	
Trypanosome	

6-4 What are algae and slime molds?

Lesson Review

PART A Decide if each characteristic listed below applies to all algae or only to some algae. Write *all algae* or *some algae* next to each characteristic.

- _____ 1. are unicellular protists
- _____ 2. contain chlorophyll and make their own food by photosynthesis
- _____ 3. are green
- _____ 4. are multicellular
- _____ 5. are not green, but still have chlorophyll
- _____ 6. are classified in the protist kingdom

PART B Complete the following. Write your answers in the spaces provided.

1. Name two examples of funguslike protists. _____

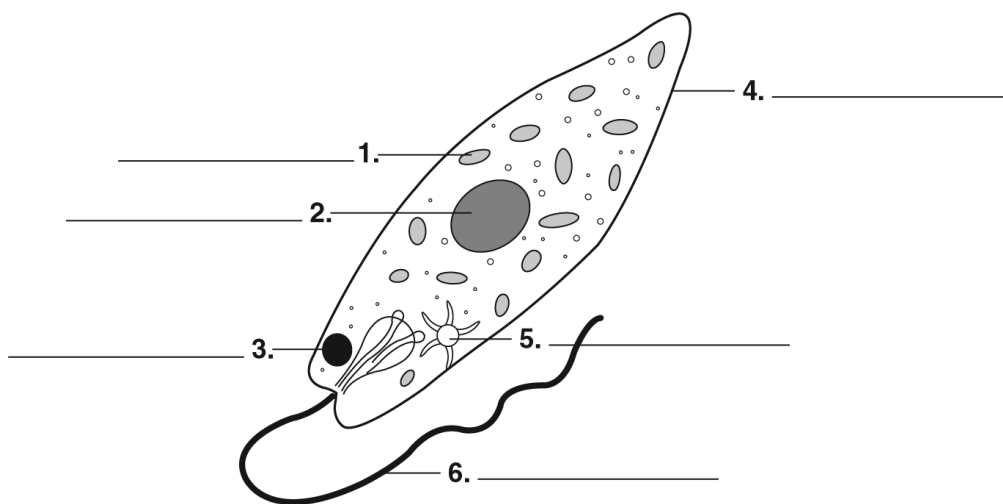
2. Where can slime molds be found? _____

3. Where can water molds be found? _____

Skill Challenge

Skills: modeling, identifying

In the diagram below, label the parts of the euglena.



Comparing Algae

Enrichment Activity for Lesson 6-4

Skills: *identifying, researching, comparing*

The Kingdom Protista is divided into many phyla. Members of this kingdom are classified based on the presence of chlorophyll, number of cells, type of movement, and type of reproduction.

PART A Use your text and other reference materials to identify the phylum in which the organisms listed below belong. Then, explain why the organism was classified in that phylum.

1. amoeba _____
2. paramecium _____
3. red algae _____
4. diatom _____
5. water mold _____
6. euglena _____
7. trypanosome _____
8. green algae _____
9. kelp _____
10. stentor _____

PART B Spirulina, or blue-green algae, is Earth’s oldest living plant. Spirulina is a nutritious, concentrated food containing many nutrients such as protein, B vitamins, minerals, chlorophyll, and enzymes. Use reference materials to determine some of the health benefits that spirulina is associated with and complete the table.

HEALTH BENEFITS OF SPIRULINA	
1.	
2.	
3.	
4.	
5.	

6-5 What is the Kingdom Fungi?

Lesson Review

Match each term in **Column B** with its description in **Column A**. Write the correct letter in the space provided.

Column A

- _____ 1. common fungi that grow on food
- _____ 2. type of respiration that does not require oxygen
- _____ 3. reproductive structures in fungi
- _____ 4. produce mushroom spores
- _____ 5. unicellular fungi
- _____ 6. stemlike part of a mushroom
- _____ 7. threadlike structures that make up the body of molds and mushrooms
- _____ 8. umbrella-shaped top of a mushroom

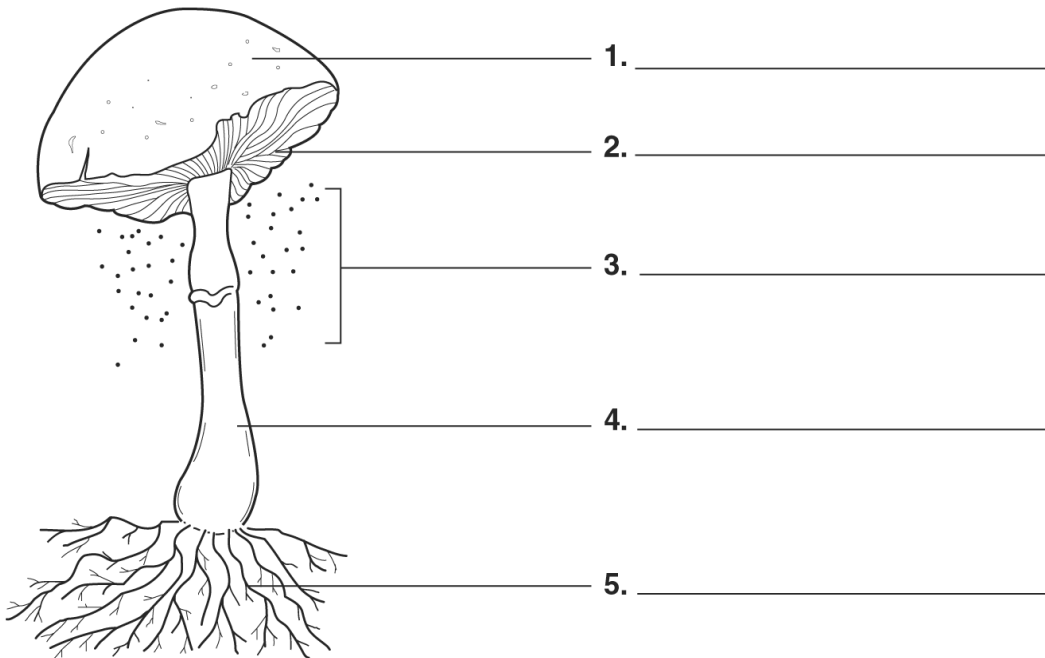
Column B

- a. yeasts
- b. cap
- c. hyphae
- d. spores
- e. gills
- f. stalk
- g. molds
- h. fermentation

Skill Challenge

Skills: identifying, modeling

Label the diagram of the mushroom shown below. Use the following labels: *spores*, *stalk*, *hyphae*, *cap*, and *gills*.



THE **Big** IDEA

Integrating Health

Chapter 6 What simple organisms exist in our daily lives?

Lesson Review

Refer to the article, call outs, and pictures on pages 146 and 147 of your text to answer the following questions.

1. Name three foods in which bacteria play a beneficial role. _____

2. How can parasitic protozoans spread to humans? _____

3. What ingredient gives ice cream its creamy texture? _____

Skill Challenge

Skills: *predicting, analyzing*

Complete the following.

1. What evidence can you find in cheese that bacteria are living organisms? _____

2. Predict what might happen to a slice of bread left out for several weeks. _____

3. Why do you think it is important to keep hot foods hot and cold foods cold? _____

Science Log Writing Activity

Complete the Science Log on a separate sheet of paper. To complete the Big Idea Online, go to www.conceptsandchallenges.com. Follow the online instructions.

6-6 How do yeasts and molds reproduce?

Lesson Review

Match each term in **Column B** with its description in **Column A**. Write the correct letter in the space provided.

Column A

- _____ 1. kind of asexual reproduction in which a new organism forms from a bud on a parent
- _____ 2. type of mold that produces the antibiotic penicillin
- _____ 3. structures that contain spores
- _____ 4. structures that can grow into a new mold offspring
- _____ 5. kind of asexual reproduction in which an organism forms from spores released from a parent
- _____ 6. reproduction in which the hyphae of two different molds come into contact with each other

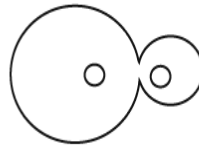
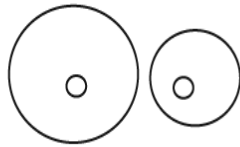
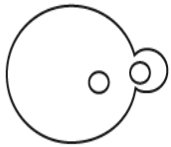
Column B

- a. sexual reproduction
- b. penicillium
- c. spores
- d. spore cases
- e. budding
- f. sporulation

Skill Challenge

Skills: sequencing, applying concepts

Place the stages of the budding of a yeast cell in the correct order. Use the letters *A* (first stage) through *D* (last stage).



Comparing Fungi

Enrichment Activity for Lesson 6-6

Skills: comparing, classifying, relating

PART A Molds, yeasts, and mushrooms all belong to the Kingdom Fungi. The table below lists various traits of these organisms. Identify the kind of fungi that shows each trait by placing a check mark in the correct column. *Note:* Some traits may be shared by more than one type of fungi.

IDENTIFYING FUNGAL TRAITS			
Trait	Mold	Yeast	Mushroom
1. Made up of threads			
2. Reproduce by budding			
3. Its cells have cell walls.			
4. Unicellular fungi			
5. Multicellular fungi			
6. Reproduce by sporulation			
7. Cannot make its own food			
8. Have hyphae			
9. Reproduce asexually			

PART B Fungi can cause disease in both plants and animals. Use reference materials to describe each disease and its symptoms.

- Dutch elm disease:** _____

- Brown rot:** _____

- Ringworm:** _____

- Athlete's foot:** _____

