30 Assessment

30.1 Organization of the Human Body

Understand Key Concepts

1. The type of tissue that covers the body, lines internal surfaces, and forms glands is
   a. muscle tissue.
   b. connective tissue.
   c. epithelial tissue.
   d. nervous tissue.

2. The process of maintaining a relatively constant internal environment despite changes in the external environment is called
   a. regulation.
   b. homeostasis.
   c. synapse.
   d. stimulation.

3. What do all types of tissue have in common?
   a. They are all made of connective tissue.
   b. They are all made of cells.
   c. They are all found in every organ.
   d. They are all made of organs.

4. Why is it important for an organism to maintain homeostasis?

5. Name the four types of tissues and describe one characteristic of each.

Think Critically

6. **Craft and Structure** Would you classify blood as a cell, a tissue, or an organ? Explain.

7. **Key Ideas and Details** Infections may lead to an immune response that results in a high fever. Citing evidence from the text about the action of enzymes, predict what may happen if a person's body temperature remains abnormally high.

30.2 Food and Nutrition

Understand Key Concepts

8. Energy in food is measured in
   a. ATP.
   b. fats.
   c. Calories.
   d. disaccharides.

9. Inorganic nutrients that your body needs, usually in small amounts, are called
   a. vitamins.
   b. minerals.
   c. proteins.
   d. amino acids.

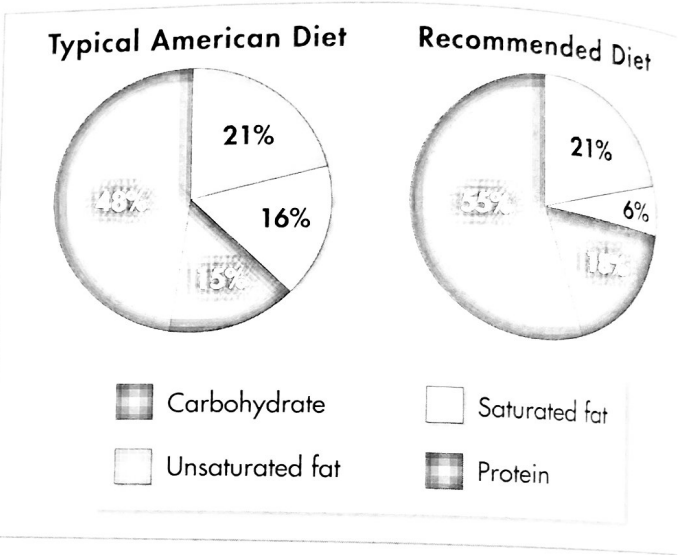
10. Which nutrients provide the body with energy?

11. In what three ways are proteins important to the body?

Think Critically

12. **Text Types and Purposes** Many food manufacturers have replaced trans fats with othe fats that may not have the same level of heart disease risk. Some nutritionists fear that people will think foods such as French fries, doughnuts, and cookies are healthful if they are not made with trans fats. Write a short essay explaining wh these foods are still not healthful choices.

13. **Calculate** If a person consumed 2000 Calories whil following the typical diet, how many more of those Calories would be from saturated fat than if they were following the recommended diet? MATH



   a. 320
   b. 200
   c. 120
   d. 100

30.3 The Digestive System

Understand Key Concepts

14. Where does mechanical digestion begin?
   a. the esophagus
   b. the large intestine
   c. the mouth
   d. the small intestine

15. An enzyme in saliva that can break the chemical bonds in starch is
   a. pepsin.
   b. bile.
   c. amylase.
   d. chyme.

16. Explain why swallowed food does not normally enter the airway leading to the lungs.
17. What is the importance of enzymes during digestion?
18. Describe the functions of the pancreas.
19. **Key Ideas and Details** Summarize how the structure of the villi is adapted to their function?

Think Critically

20. **Infer** Individuals who have had part, or even all, of their stomachs removed can survive if fed predigested food. Could these individuals also survive without a small intestine? Explain.
21. **Predict** Suppose that your doctor prescribed an antibiotic that killed all the bacteria in your body. What effect would this have on your digestive system?

30.4 The Excretory System

Understand Key Concepts

22. Which of the following is the basic functional unit in a kidney?
    a. nephron.
    b. glomerulus.
    c. Bowman's capsule.
    d. loop of Henle.
23. Urine is excreted from the body through the
    a. ureter.
    b. urinary bladder.
    c. urethra.
    d. renal vein.
24. What is the role of the skin in excretion?
25. What materials are filtered from blood in the kidney? What materials do not leave the bloodstream?
26. How is the water-regulating activity of the kidney controlled?

Think Critically

27. **Apply Concepts** Explain why kidney failure can be a fatal condition.
28. **Infer** When there is too much fluid in the blood, the heart must pump harder. Diuretics are substances that stimulate the kidneys to remove more fluid from the body. Why do you think diuretics are used to treat high blood pressure?

solve the CHAPTER MYSTERY

THE TELLTALE SAMPLE

For centuries, people have used urine for clues to health and disease. The Greeks, for example, knew that diabetics had excessive sugar in their urine and called the disease *diabetes mellitus*. Mellitus is the Greek word for honey.

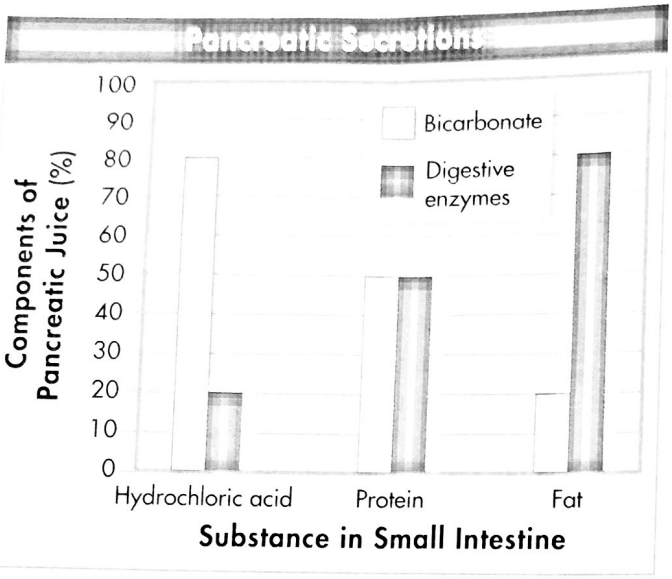
- **Physical Examination** During this step, the color and clarity are examined. The shade of yellow indicates the amount of water being released by the kidneys. Urine of a color other than yellow could indicate the presence of blood. Or, it could simply indicate someone has eaten a lot of beets. Urine should be clear, rather than cloudy.
- **Microscopic Examination** The presence of mucus, white blood cells, or microorganisms in urine indicates a probable infection. Cloudy urine may also be caused by crystals, which could indicate kidney stones or a metabolic problem.
- **Chemical Examination** Hundreds of chemical tests can be performed on urine. Chemical dipsticks are used that change color in the presence of other chemicals. These tests can reveal a lot about kidney function, liver function, and overall homeostasis in the body.

1. **Infer** How does urine reveal so much about the health of the human body?
2. **Production and Distribution of Writing** Most drug urine tests performed for schools do not test for alcohol or tobacco. Write a clear and coherent argument for why you agree or disagree with this policy.
3. **Connect to the Big Idea** Ketones are a product of the breakdown of fat for energy. Ketones in the urine can be an indication of diabetes. Why do you think this is?

Connecting Concepts

Use Science Graphics

Pancreatic secretions contain sodium bicarbonate and enzymes. The graph shows the secretions of the pancreas in response to three different substances in chyme. Use the graph to answer questions 29 and 30.



29. **Integration of Knowledge and Ideas** Each pair of bars represents the response of the pancreas to a different variable. What are the three variables?

30. **Integration of Knowledge and Ideas** Compare the composition of pancreatic secretions in the presence of hydrochloric acid and fat.

Write About Science

31. **Production and Distribution of Writing** A children's television workshop wants to explain the process of digestion to young viewers. Work with a team to create a computer presentation that describes the travels of a hamburger and bun through the digestive system. As you work, refine your presentation to include graphics and links to reliable, informative web sites.

32. **Assess the Big Idea** Using Figure 30–2, choose five body systems that are involved in maintaining homeostasis in your body as you answer these assessment questions. Explain how these five body systems work together.

Analyzing Data

Integration of Knowledge and Ideas

MyPlate classifies food into five categories: fruits, vegetables, grains, protein, and dairy, plus oils. Personalized eating plans can be found at choosemyplate.gov. The plan shown here contains daily recommendations for Ryan, a 15-year-old male who weighs 140 pounds, is 5 feet 7 inches tall, and is physically active about 30 to 60 minutes a day.

Total Calories: 2800
Exercise: 60 minutes most days

FRUITS	GRAINS	DAIRY
2.5 cups	10 ounces (at least 5 ounces whole grain)	3 cups
VEGETABLES	**PROTEIN**	
3.5 cups	7 ounces	8 teaspoons

33. **Predict** If Ryan were to join the swim team and have practice for two hours after school every day, what would happen to the number of Calories he could consume? Explain.

34. **Infer** For Ryan to meet his grain requirements, which group of foods would be his BEST choice in a single day?
   a. sweetened cereal, pasta, white bread
   b. whole-grain bagel, a doughnut, and pasta
   c. whole-grain cereal, potato chips, and whole-grain bread
   d. oatmeal, whole-grain bread, and a sweet potato