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Vocabulary Word

enzyme (en' zīm'): a special protein that helps the body digest food

△ **Pronounce this word to someone.**

Digestion begins in the mouth. You may have known that the salivary glands are part of your digestive system, but did you know your tongue and teeth are part of your digestive system too? Your tongue helps mix saliva with your food and helps you swallow your food. Your body can digest thoroughly chewed food more easily than big chunks of half-chewed food.

Teeth

God gave you a mouth full of teeth to help you chew food. Your teeth are not all shaped alike because they do not all have the same job. Some of them cut, some tear, and some grind.

The upper part of a tooth is called the *crown*, and the lower part down in the gum is called the *root*. Between the crown and root is the *neck* of the tooth.

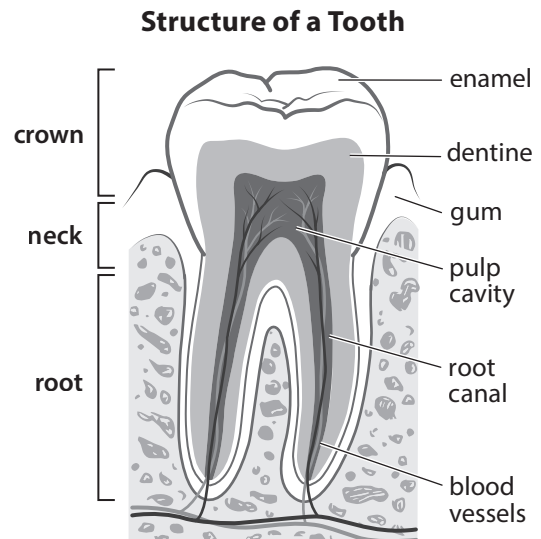
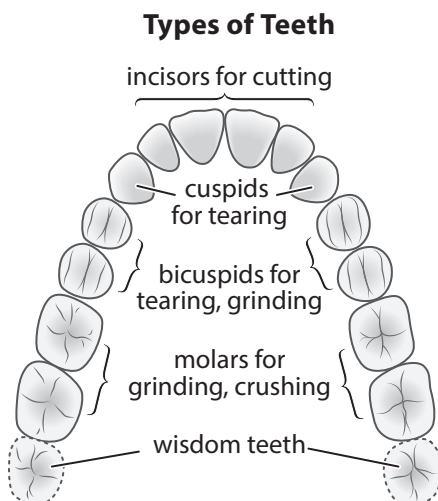
A tooth has three layers—enamel, dentin, and pulp. The enamel is the thin, white, outside covering of a tooth. It is the hardest substance in the human body. Even though enamel is dead, it has

the important job of protecting the inside parts of the tooth. Enamel cannot repair itself as many parts of your body can. Therefore it is very important to take good care of the enamel of your teeth.

A layer of dentin is under the enamel. Dentin is similar to bone tissue. This layer is alive and is sensitive to hot and cold if the enamel is damaged. Beneath the dentin in the center of the tooth is the pulp. This is made of nerves and blood vessels that keep the tooth alive and give it feeling.

Your first set of teeth, or baby teeth, are completely replaced by about 32 permanent teeth by the time you are 14 to 16 years old. Take good care of these permanent teeth because they must last the rest of your life.

Bacteria in your mouth make acids that eat away the enamel and cause your teeth to decay. It is very important to brush and floss your teeth every day to remove the bacteria. Eating a balanced diet and drinking plenty of milk will also help you to have good teeth.



Lesson 5

Salivary Glands

Did you ever notice how your mouth begins to water when you smell or see delicious food? This is the wonderful way God made you so that when you sit down to eat, there will be plenty of saliva in your mouth to help digest your food. Your salivary glands produce about a quart of saliva every day.

While your teeth chew food, your salivary glands are busy making saliva. Saliva mixes with your food and makes it easier to chew and swallow. An **enzyme** in the saliva produces a chemical reaction that changes starches to sugar. The finer you chew your food, the more thoroughly the enzymes will react with the food and the easier it will be for your body to digest the food.

The Esophagus

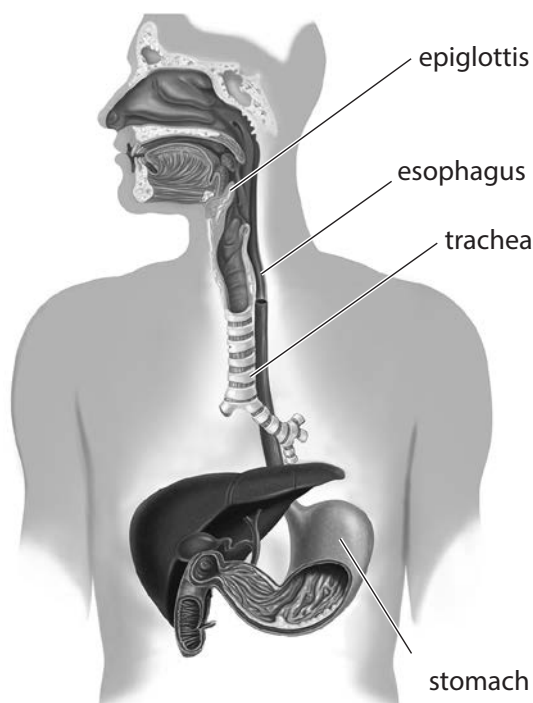
A tube carries food from your mouth to your stomach. This tube—the esophagus—is about 25 cm (10 in) long. It extends down the center of your neck behind the trachea.

In LightUnit 608, you learned about the trachea (windpipe) with its trapdoor, the epiglottis. The trachea carries air from your throat to your lungs. When you swallow, the epiglottis automatically closes to keep food and water out of your windpipe.

After swallowing a bite of food it slides down your esophagus, aided by saliva. The layers of

muscles in the esophagus wall squeeze together in a wavelike motion, forcing the food down to your stomach. Even if you try to drink upside-down, the wavelike motion of your esophagus will still carry the liquid “up” to your stomach. At the entrance of the stomach, there is a thicker ring of muscle. This muscle lets food enter your stomach, then it squeezes shut and usually will not let the food back up. Solid food takes about four to eight seconds to travel from your throat to your stomach. It takes less than a second for liquids to reach your stomach.

The Esophagus



Study Exercises

 **Match the terms and their descriptions.** One term will not be used.

1. ____ hardest substance in human body
2. ____ full of blood vessels and nerves
3. ____ bone-like tissue
4. ____ top part of tooth
5. ____ cause tooth decay
6. ____ part of tooth below gum

- a. bacteria
- b. crown
- c. dentin
- d. enamel
- e. neck
- f. pulp
- g. root

**Complete the statements.**

7. Digestion begins in the _____.
8. Teeth are shaped differently so they can perform the jobs of _____, _____, and _____.
9. After baby teeth fall out, the _____ teeth come in.
10. The salivary glands produce about a(n) _____ of saliva each day.
11. A(n) _____ in saliva changes starches to a _____.

**Write *true* if the statement is *true* or *false* if it is *false*. Correct any false statements.**

12. _____ Adults have about 32 teeth.
13. _____ Baby teeth will be replaced by the time a person is 20-25 years old.
14. _____ The esophagus is about 25 *cm* long.
15. _____ *Muscles* in the esophagus force the food toward the stomach.
16. _____ It takes about *thirty* seconds for solid food to reach the stomach.

**Circle the letter of the answer.**

17. Why is it good to chew food thoroughly?
 - a. to keep food out of the trachea
 - b. to help the body digest the food better
 - c. to make sure the body has enough saliva
 - d. so the body can have plenty of nourishment
18. Why is it important for a person to brush and floss his teeth every day?
 - a. so his teeth never fall out
 - b. so his teeth never get dirty
 - c. to help his teeth make new enamel
 - d. to keep bacteria from decaying his teeth
19. Why does a person's mouth water when he smells or sees food?
 - a. to tell him he is hungry
 - b. to keep food out of his esophagus
 - c. to help him know if the food will be good or not
 - d. so there will be plenty of saliva to digest the food

Lesson 5



Answer the questions.

20. Besides brushing and flossing, what are two other ways a person can have healthy teeth?
- a. _____
- b. _____
21. Why doesn't food usually go down the windpipe? _____
- _____

Looking Back



Complete the statements.

22. Someone whose blood does not clot properly is a _____.
23. _____ makes red blood cells.
24. The red color of blood is caused by _____.
25. When germs enter the body, _____ fight them.
26. Red blood cells carry _____ to cells and remove carbon dioxide.
27. Special proteins that fight germs are _____.



Circle the letter of the answer.

28. Why is it important for a person's body to have plenty of iron?
- a. to help the blood flow better c. to help the body stay healthy
- b. to help the body build red blood cells d. to help the blood clot properly
29. What is pus?
- a. the liquid part of blood c. the smallest type of blood cell
- b. the red coloring in blood d. dead white cells around an infected area



Match the terms and their descriptions. The terms may be used more than once.

30. _____ fight germs
31. _____ carry oxygen
32. _____ stops bleeding
33. _____ pale yellow liquid
34. _____ produce antibodies
35. _____ contain hemoglobin

- a. plasma
- b. platelets
- c. red blood cells
- d. white blood cells