Answer Key
Human Body Systems

Lesson 1

Before You Read
1. Agree
2. Agree

Read to Learn
1. the process by which food is broken down
2. salivary glands, tongue, esophagus, liver, stomach, gallbladder, pancreas, large intestine, small intestine, rectum
3. through the mouth
4. 144 C
5. proteins, fats, carbohydrates, vitamins, minerals
6. Students should circle the ureter.
7. Food enters through the mouth. The digestive system breaks down food into nutrients, which are then mostly absorbed by the body. Wastes, including unabsorbed nutrients, are removed by the excretory system.
8. the respiratory system
9. Students will trace the path of air flow in and out of the respiratory system.
10. the pharynx
11. They are tiny, hollow structures that exchange oxygen and carbon dioxide.
12. atrium, ventricle
13. Capillaries absorb and transport nutrients to other parts of the body.
14. A or AB
15. b. type O blood
16. in your throat
17. removing excess fluid around organs, producing white blood cells, and absorbing and transporting fats
18. It helps make lymphocytes, which protect the body from infection.
19. caused by viruses—colds, AIDS, chicken pox; caused by bacteria—strep throat
20. The lymphatic system generates immune cells, the skin protects against the environment, and mucus in the respiratory system prevents harmful substances from entering the body.

**After You Read**

1. Possible answer: Lymphocytes detect viruses, bacteria, and other foreign substances that are not normally made in the body, attack them, and destroy them.

2.

<table>
<thead>
<tr>
<th>Name of Organ</th>
<th>Type of Waste Material Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>lungs</td>
<td>removes carbon dioxide and excess water vapor when you exhale</td>
</tr>
<tr>
<td>kidneys</td>
<td>removes urea from the body</td>
</tr>
<tr>
<td>liver</td>
<td>removes wastes from the blood</td>
</tr>
<tr>
<td>rectum</td>
<td>removes feces from the body</td>
</tr>
</tbody>
</table>

3. Possible answer: People with AB blood have A proteins and B proteins on their red blood cells. They can receive a transfusion from people with any blood type (A, B, AB, or O).

**Lesson 2**

**Before You Read**

3. Disagree
4. Agree

**Read to Learn**

1. calcium
2. Compact bone is the hard outer layer of bone; spongy bone is inside compact bone and contains many tiny holes.
3. the skeletal and muscular systems
4. skeletal muscle
5. The nervous and endocrine systems respond to information in the internal and external environment and work to maintain homeostasis.
6. brain and spinal cord
7. It signals the peripheral nervous system to respond.
8. It is voluntary because you have to think about how to fry the egg.
9. receptors
10. nose
11. Possible answers could include any of the five senses.
12. c. ovaries
13. nerve messages
14. by signaling organ systems to do something

After You Read
1. Possible answer: Neurons send signals to your spinal cord, triggering a reflex response.
2. storage, support, protection, movement
3. Students write a question about information they marked with sticky notes earlier in the lesson.

Lesson 3

Before You Read
5. Agree
6. Disagree

Read to Learn
1. Male and female gametes combine in the process of fertilization.
2. produces sperm and delivers it to the female reproductive system
3. Students should circle testis and ovary.
4. the fallopian tube
5. The female reproductive system produces eggs and provides a place for a new human to grow and develop before birth.
6. Students should circle 8 weeks on the table.
7. between 5 and 13 months of age
8. bones get weaker, hair turns gray, skin wrinkles

After You Read
1. Possible answer: A male gamete and a female gamete join together to form a zygote.
2. Possible answers are shown.

- Infancy: muscular and nervous systems develop
- Childhood: bones in the skeletal system grow longer and stronger
- Adolescence: reproductive systems mature
- Adulthood: hair turns gray

3. Pregnancy is the developmental period that occurs from fertilization to birth, during which an embryo develops into a fetus.