Name _____ Class _____ Date _____

SECTION 1 Body Organization

BEFORE YOU READ

After you read this section, you should be able to answer these questions:

- What is homeostasis?
- How is the human body organized?
- What are the 11 different human organ systems?

National Science Education Standards
LS 1a, 1d, 3a

How Is the Body Organized?

The different parts of your body all work together to maintain, or keep, the conditions in your body stable. Your body works to keep itself stable even when things outside your body change. This is called **homeostasis**. For example, your body temperature needs to stay the same even when temperatures outside are very cold or very hot. If your body could not keep its inside conditions the same, many processes in your body would not work.

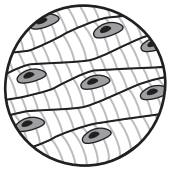
Conditions inside and outside your body are always changing. Your body can maintain homeostasis because each cell does not have to do everything your body needs. Instead, your body is organized into different levels. The parts at each level work together to help your body maintain homeostasis.

There are four levels of organization in the body: cells, tissues, organs, and organ systems. Cells are the smallest level of organization. A group of similar cells working together forms a **tissue**. Your body has four main kinds of tissue: epithelial, nervous, muscle, and connective.

Four Kinds of Tissue

Epithelial tissue covers and protects other tissues.

Nervous tissue sends electrical signals through the body.



Muscle tissue is made of cells that contract and relax to produce movement.

Connective tissue joins, supports, protects, insulates, nourishes, and cushions organs. It also keeps organs from falling apart.

STUDY TIP

Discuss Read this section silently. When you finish reading, work with a partner to answer any questions you may have about the section.

STANDARDS CHECK

LS 3a All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.

Word Help: resource
anything that can be used to take care of a need

Word Help: environment
the surrounding natural conditions that affect an organism

1. Define What is homeostasis?

_____

_____

ORGANS

When different kinds of tissues work together, they can do more than any one tissue can do alone. A group of two or more tissues working together to do a job is an **organ**. For example, your stomach is an organ that helps you digest your food. None of the stomach's tissues could digest food alone. ☑

READING CHECK

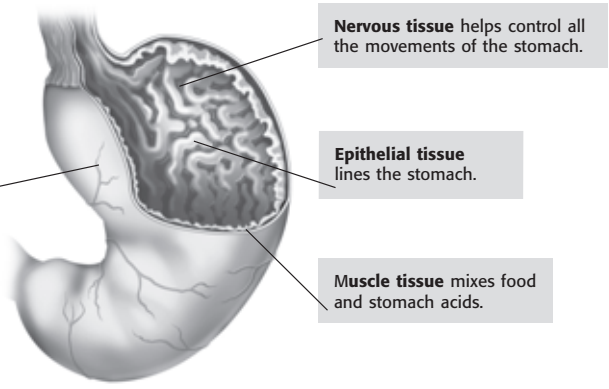
2. Define What is an organ?

_____

_____

_____

Four Kinds of Tissue in the Stomach



ORGAN SYSTEMS

Organs that work together to do a job make up an *organ system*. For example, your stomach works with other organs in the digestive system, such as the intestines, to digest food. Organ systems can do jobs that one organ alone cannot do. Each organ system has a special function.

There are 11 different organ systems that make up the human body. No organ system works alone. For example, the respiratory system and cardiovascular system work together to move oxygen through your body.

Critical Thinking

3. Apply Concepts How does the stomach work as part of an organ system?

_____

_____

_____

_____

_____

Integumentary System Your skin, hair, and nails protect the tissue that lies beneath them.

Muscular System Your muscular system works with the skeletal system to help you move.

Skeletal System Your bones provide a frame to support and protect your body parts.

Cardiovascular System Your heart pumps blood through all of your blood vessels.

Respiratory System Your lungs absorb oxygen and release carbon dioxide.

Urinary System Your urinary system removes wastes from the blood and regulates your body's fluids.

Male Reproductive System The male reproductive system produces and delivers sperm.

Female Reproductive System The female reproductive system produces eggs and nourishes and protects the fetus.

Nervous System Your nervous system receives and sends electrical messages throughout your body.

Digestive System Your digestive system breaks down the food you eat into nutrients that your body can absorb.

Lymphatic System The lymphatic system returns leaked fluids to blood vessels and helps get rid of bacteria and viruses.

Endocrine System Your glands send out chemical messages. Ovaries and testes are part of this system.

TAKE A LOOK

4. Identify Which organ system includes your lungs?

_____

5. Identify Which organ system is different in males and females?

_____

Say It

Discuss With a partner, see how many organs you can name from each organ system.

Name _____ Class _____ Date _____

Section 1 Review

NSES LS 1a, 1d, 3a

SECTION VOCABULARY

homeostasis the maintenance of a constant internal state in a changing environment **organ** a collection of tissues that carry out a specialized function of the body	**tissue** a group of similar cells that perform a common function

1. Compare How is an organ different from a tissue?

2. List Name five organ systems in the human body.

3. Explain Why is it important for your body to maintain homeostasis?

4. Infer What organ systems must work together to help a person eat and digest a piece of pizza? Give at least three systems.

5. Infer What organ systems must work together to help a person play a soccer game? Give at least four systems.

6. Apply Concepts Can an organ do the same job as an organ system? Explain your answer.

7. Identify Relationships How is the lymphatic system related to the cardiovascular system?