

# Human Body and Organs - Student Journal

## Think About This!!

Four students were sharing their prediction for the body's largest organ. These are their predictions:

**Olivia:** "I think the brain is the largest organ in our body."

**Donald:** "I think the stomach is the largest organ in our body."

**Violet:** "I think skin is the largest organ in our body."

**Herman:** "I think the large intestine is the largest organ in our body."

Which student do you think made the best prediction? \_\_\_\_\_.

Explain your thinking. \_\_\_\_\_

\_\_\_\_\_

An organ is a body part that performs a specific function, or job. Our bodies consist of many organs that work together to make sure we function properly and remain healthy.

## Video: What is an organ?

What is an organ? \_\_\_\_\_

\_\_\_\_\_

What do you think would happen if an organ did not function or work properly?

\_\_\_\_\_

\_\_\_\_\_

## Why are muscles important?

StudyJams Slideshow: The Muscular System

**Reading Passage:** Muscles in our bodies function to create movement and to help provide support and balance. There are three different types of muscles found in the human body. Skeletal muscles, smooth muscles and cardiac muscles.

Skeletal muscles connect to the ends of bones and help our bodies move. These muscles are called voluntary muscles, meaning that we can control their movement. Walking down the hall, lifting your backpack, and talking to your friends are under your control. These actions use skeletal muscles to cause movement.


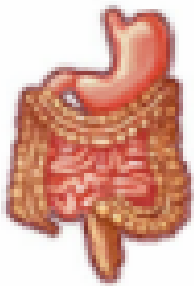

Smooth muscles, like the muscles found in the digestive system, the respiratory system, the muscles that focus your eyes, and the muscles found in the walls of blood vessels and organs are involuntary. The brain controls involuntary muscles. You do not have to think about digesting your food, breathing, focusing your eyesight or pumping blood throughout your body. Your brain controls these muscles for you!!

A very special set of involuntary muscles are found in the heart. Your heart beats to pump blood throughout your body. This happens without you having to think about it. Your brain sends the messages that keep your heart beating and keep you alive.

What is the main purpose of muscles? \_\_\_\_\_

Muscles \_\_\_\_\_.

There are three types of muscle:

Muscle Type	Main features	Location
	Usually attached to the skeleton  Voluntary muscles are controlled by you	
	Usually found lining the walls of internal organs  Involuntary muscles are controlled by the brain	
	Only found in the walls of the heart  Involuntary muscles are controlled by the brain	

**Reading:** The skeleton consists of all of the bones in our bodies. Our skeleton provides internal support for us, helping us to stand tall. Our skeleton also provides a place for muscles to attach, helping us with voluntary movement. Part of our skeleton, the rib cage, protects the organs found in our torso, like the heart, liver, stomach, and lungs. Another part of our skeleton, the skull, protects our brain. Red blood cells are also made inside of bones. Our bones also contain most of the calcium we need to live.

### **Video: Functions of the skeletal system**

What is the purpose of the skeleton? \_\_\_\_\_  
\_\_\_\_\_

Skeletons \_\_\_\_\_ and \_\_\_\_\_.

### **Video: How do our bodies move?**

How do muscles and your skeleton work together to help you move? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What other body organ is involved in helping us move? \_\_\_\_\_

### **What is the purpose of skin?**

**Reading passage:** Our skin is the outer covering of the human body. It is the largest organ in our bodies. Skin keeps water inside our bodies to protect us from dehydration. The skin is also important because it keeps germs and other foreign objects out. When our skin is injured by scrapes or cuts, it is important to keep those injuries clean to keep germs from causing infections.

Our skin also helps to regulate our body temperature. Our skin produces sweat to cool our bodies when we are hot and it produces goose bumps to warm our bodies when we are cold.



What makes the skin different from other organs? \_\_\_\_\_

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### **Video: Skin**

Describe the functions of skin. \_\_\_\_\_

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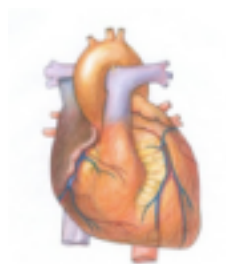
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### **What is the purpose of the heart?**

**Reading passage:** The heart is fist-sized organ located in our chests. It is a muscular organ made up of cardiac muscle. This type of muscle is only found in the walls of the heart. The heart pumps nutrients and oxygen to all parts of our bodies. The brain controls the function of the heart.

If you have ever been startled, the brain sends a message to your heart to beat faster so you can run away. When it is time to go to sleep, your brain sends a message to your heart to slow down to let you fall asleep.



Describe the purpose of the heart. \_\_\_\_\_

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The heart is like a pump that keeps the blood flowing throughout the body.

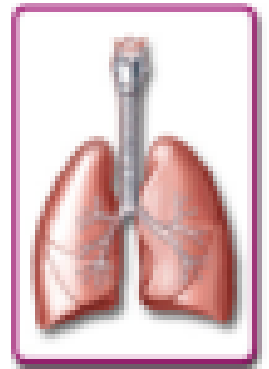
Make a fist with your hand. Your fist is about the size of your heart. Place your fist just to the left of the center of your chest. This is where your heart is located. The heart is

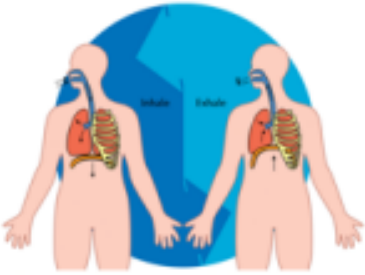
the hardest working muscle in your body. It is always working to pump blood around the body and into your lungs. You can monitor your heart beats by counting your pulse.

The heart and the lungs work together to ensure that the body has the oxygen it needs to survive. Oxygen-rich blood flows out of your lungs, pumps through your heart, and then it goes out into the body. Oxygen-poor blood flows from your body, back into the heart, and then returns to the lungs to exchange carbon dioxide for oxygen.

## Why are the lungs important?

**Reading Passage:** We have a pair of lungs inside of our rib cage. Our lungs are part of the respiratory system and have a sponge-like consistency. These air pockets allow for more efficient gas exchange. The main function of the lungs is to bring oxygen into the blood and remove carbon dioxide from the blood. We use our lungs to breathe. When we breathe in, our lungs expand and fill with oxygen-filled air. When we breathe out, our lungs contract and force the carbon dioxide out of our lungs and into the surrounding air.



<p>Inhale</p> <p>=</p> <p>_____</p>		<p>Exhale</p> <p>=</p> <p>_____</p>
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How many lungs do most humans have? \_\_\_\_\_

## Video: Model: Lung Function

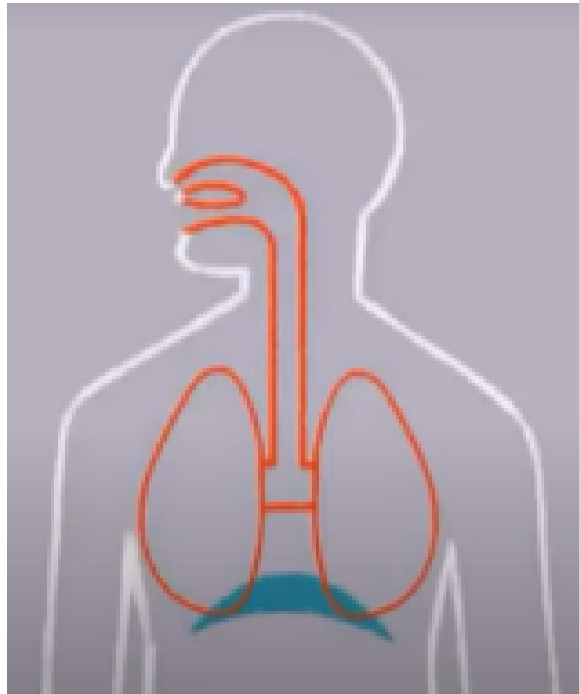
Inhale = expand

exhale = contract



### **Video: Respiratory System**

Label the parts of the respiratory system. (mouth, nose, throat, windpipe, lungs, diaphragm)



**What is the brain's function?** The brain is the organ inside the skull (bones that make up your head). The brain serves as the control center for your body. It processes information by sensing your surroundings and then communicating that information throughout your body. The brain sends messages very quickly throughout your body using nerves. The brain controls and manages the other organs in your body. The brain works very much like a computer because it is able to process millions of pieces of data very quickly and it controls what is happening inside your body.



According to the text, what is the brain similar to and why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**What are the sensory organs?** In order for the brain to process the world around us, it uses special sensory organs to gather information and make observations. Our eyes are used to see the world around us. Our ears allow us to hear. Our nose allows us to detect smells. Our tongue gives us the ability to taste. Our skin provides us with the ability to touch or feel the world around us. The brain must receive and process information about the world around us to react, communicate and keep the body safe and healthy. Much of this information comes through the sensory organs. Each of these sensory organs has specialized tissues that

collect observations and translate those observations into signals that are then relayed to the brain. The brain interprets the information as sight (eyes), sound (ears), smell (nose), taste (tongue), and touch (skin).



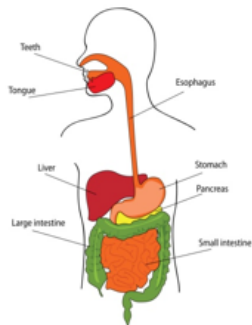
What organ works with the sensory organs? \_\_\_\_\_

How do the sensory organs help? \_\_\_\_\_

### **Video: Use Your Brain!**

Describe how your brain helps you when your nose itches. \_\_\_\_\_

## **Digestive organs**



The digestive organs work together to help the body prepare, absorb and use nutrients in the food we eat. The main purpose of the stomach is to turn the food into liquid. After leaving the stomach, this liquid passes through the small intestine. The nutrients in the food are absorbed across the small intestine. The remaining food materials pass into the large intestine, where water and minerals are absorbed by the body. The large intestine then concentrates the remaining food materials into solid waste before it leaves the body.



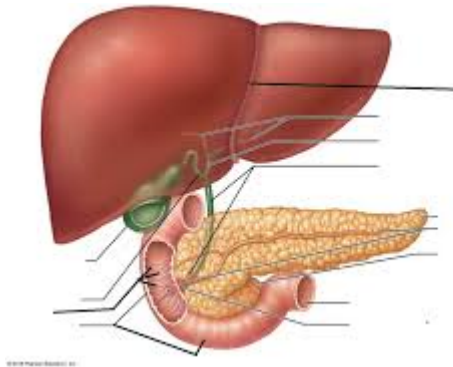
What is the difference between the small and large intestines? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### How are the liver and pancreas related?



The pancreas and liver are also digestive organs found in the human body. They produce digestive chemicals that break down fats and proteins in the food we eat so that our bodies are able to use them to stay healthy.

The liver produces bile which helps with digestion of the food we eat. The pancreas also produces chemicals and enzymes that help break down the liquified food material and release the nutrients. The nutrients are absorbed across the small intestine into the bloodstream. The pancreas also helps to control blood sugar levels by producing insulin. The liver then filters the nutrient-rich blood and removes toxins and waste products from the blood. It will send the toxins and waste back to the large intestine to be added to the other waste material to leave the body.

Why is the pancreas important? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

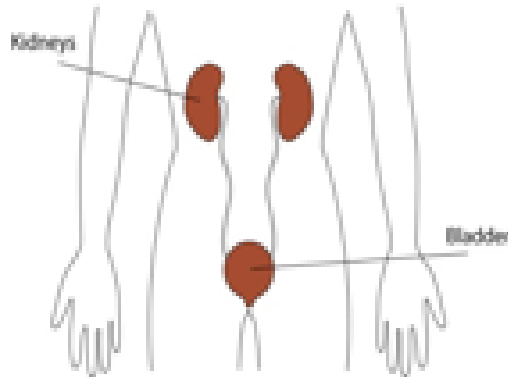
### Video: Digestive System

What organs are part of the digestive system?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_

### How are the kidneys and bladder related?



The kidneys and the bladder are organs that are responsible for producing urine for the body. Like the liver, the kidneys remove wastes from the blood. The waste from the kidneys; however, is in liquid form. As the kidneys filter the blood, they also help to maintain the balance of water, salt and minerals in the blood. After the wastes have been filtered by the kidneys, the liquid material is stored in the bladder as urine until it is released from the body. The bladder can stretch to hold up to a pint of urine.

How do the kidneys and the bladder work together? \_\_\_\_\_

\_\_\_\_\_

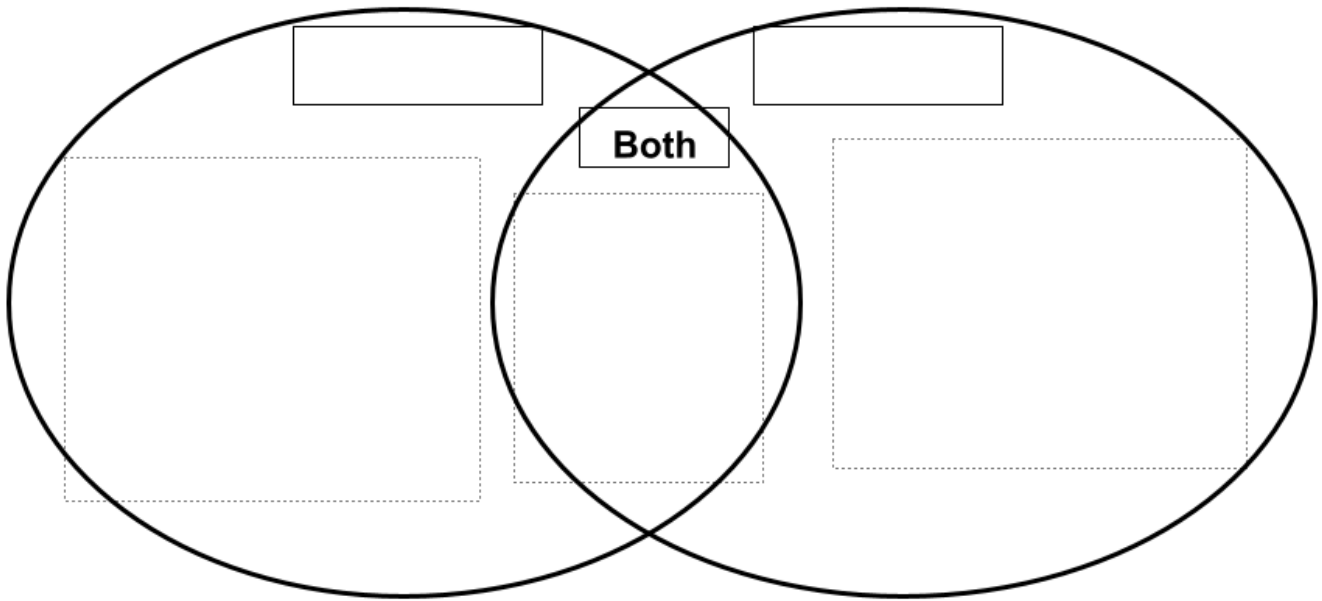
\_\_\_\_\_

\_\_\_\_\_

### Video: Urinary System

The kidneys filter out \_\_\_\_\_, salts, and extra \_\_\_\_\_. The urine is stored in the \_\_\_\_\_.

## Venn Diagram



### Compare and Contrast: The liver and the kidneys

Writing: Describe how the liver and kidneys are alike and how they are different.

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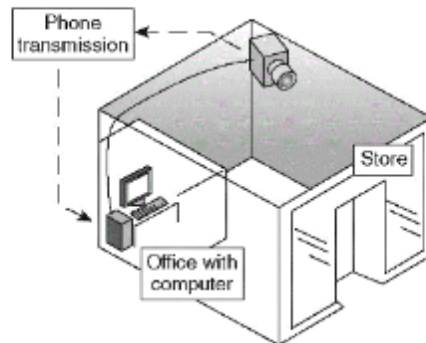
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### Check What You Know

1. If toxins build up in the blood, a living organism can develop a variety of diseases. Which human organ removes toxins from the blood?
  - A. Bladder
  - B. Intestines
  - C. Liver
  - D. Stomach

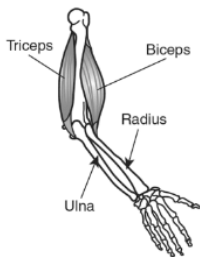
2. The security camera shown in the figure records what goes on in the store. Information from the camera is sent to a computer in the office. There, the information is translated into an image.



Which part of the human body serves the same purpose as the camera sending video to the computer?

- A. Brain
- B. Eyes
- C. Nose
- D. Nerves

3. What is the main function of the two human body organs shown in this illustration?



- A. Producing red blood cells
- B. Protecting the internal organs
- C. Ensuring that air exchange happens
- D. Allowing for movement

4. After playing soccer for one hour, Ana is hot. Luckily her skin produces sweat, which contains water and salt. How does Ana's skin keep her body cool?

- A. Salt traps heat near the skin.
- B. Water keeps the skin from getting too dry.
- C. Waste salt is removed from the body in sweat.
- D. Evaporation of water removes heat from the body.