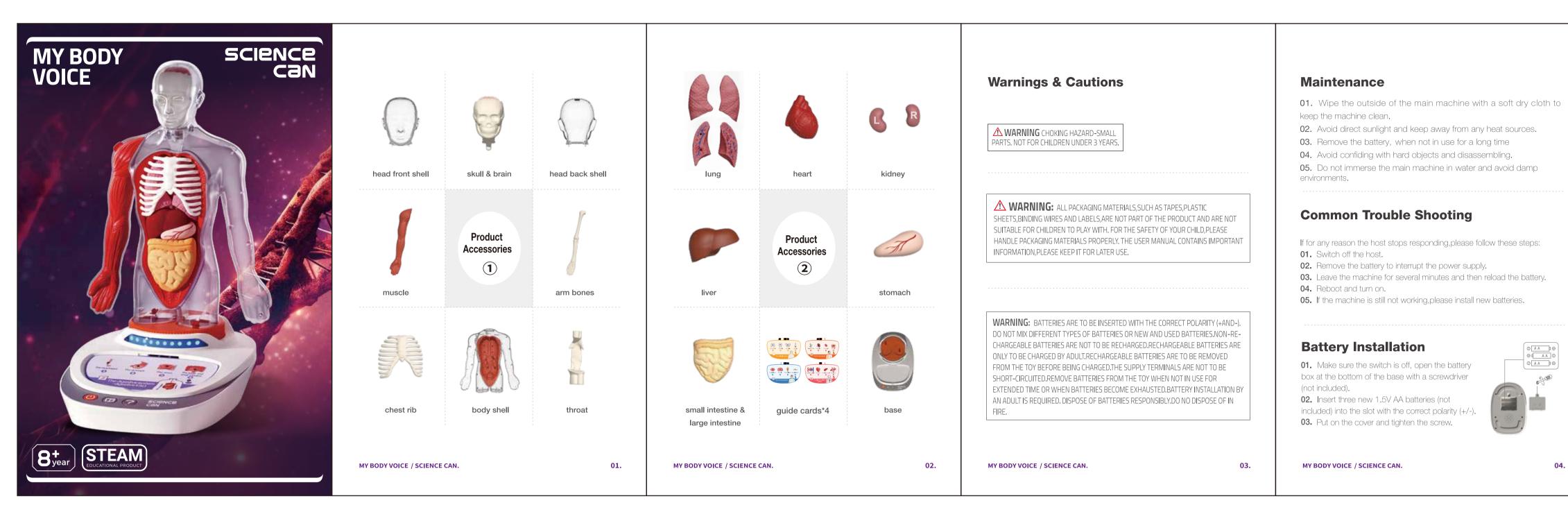


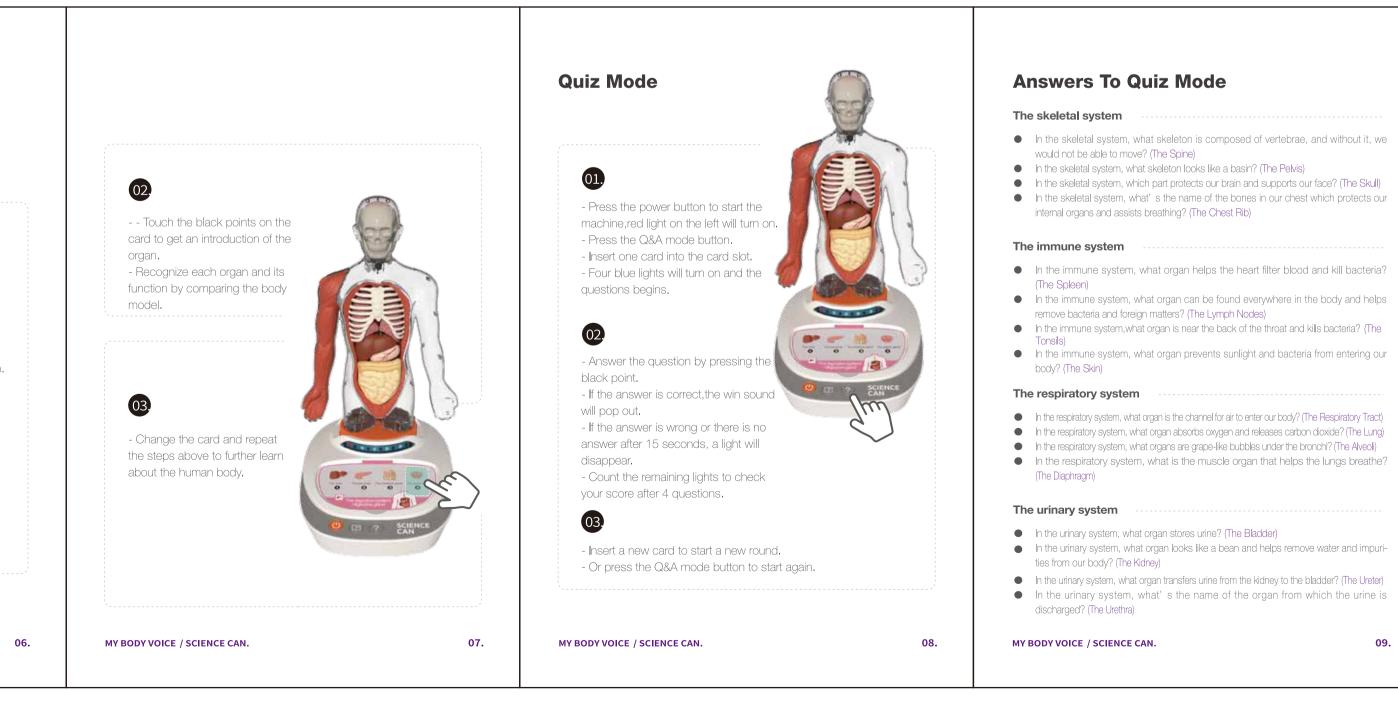
正面

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# **Exploration Mode Encyclopedia Mode** Take out the 15 realistic organs, bones and muscles from the 3D model and observe each part of human bodv. Press the power button to start the machine.red liaht on the left will turn on. - Press the encyclopedia mode button. - Insert one card into the (02 card slot. Install the human body model according to the distribution map to recognize the positions, shapes and names of different organs. MY BODY VOICE / SCIENCE CAN. MY BODY VOICE / SCIENCE CAN. 05.





04.



In the skeletal system, what skeleton is composed of vertebrae, and without it, we

In the immune system, what organ can be found everywhere in the body and helps

09.

#### The nervous system

- In the nervous system, what organ can give orders to all parts of our body as well as manage thinking, speaking, and remembering? (The Brain)
- In the nervo what's the name of the nervous organ that exists in the spine'? (The Spinal Cord)
- In the nervous system, what organ takes charge of information communication between the brain and other organs? (The Cranial Nerve) In the nervous system, what organ connects the brain, the spine and other organs in our
- body and sends messages for them? (The Spinal Nerve)

### The blood circulation system

- In the circulation system, what organ supplies fresh blood to our body? (The Heart) In the circulation system, what are the channels for our body to transport blood? (The Blood
- Vessel) In the circulation system, what is the name of the blood vessel that can only be seen under
- a microscope? (The Blood Capillary) In the circulation system, what organ contains oxygen and various nutrients which make our body strong? (The Blood)

#### The digestive system – digestive tract

- In the digestive system, what organ transports food to the stomach? (The Oesophagus)
- In the digestive system, what organ absorbs nutrients and water? (The Large intestine and the small intestine)
- In the digestive system, what organ digests food into paste? (The Stomach) In the digestive system, what organ carries the impurities out of the body? (The Anus)

#### The digestive system—digestive gland

- In the digestive system, what organ secretes digestive juice to help the intestines digest food better? (The Pancreas)
- In the digestive system, what organ eliminates harmful toxins and kills bacteria? (The Liver) In the digestive system, what organ helps us digest and absorb meat? (The Intestinal Gland)
- In the digestive system, what organ helps us digest and absorb vitamins and minerals? (The Gastric Gland)

#### MY BODY VOICE / SCIENCE CAN.

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GEO-SCIENCES OO SPACE & TECHNOLOGY

Human body composition Learn about the parts of the human body













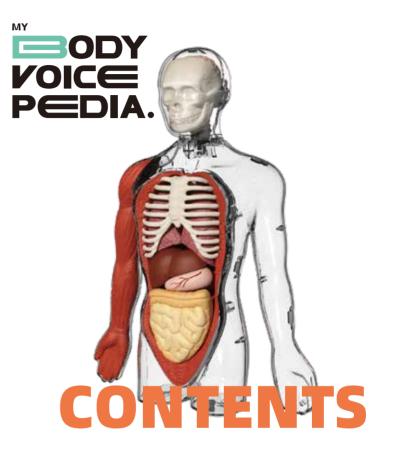








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|    | Building Blocks of Life              | 04-05 |
|    | Classification of Human Body Systems | 06-12 |

02 Investigating the Human Body 13-24

# Preface

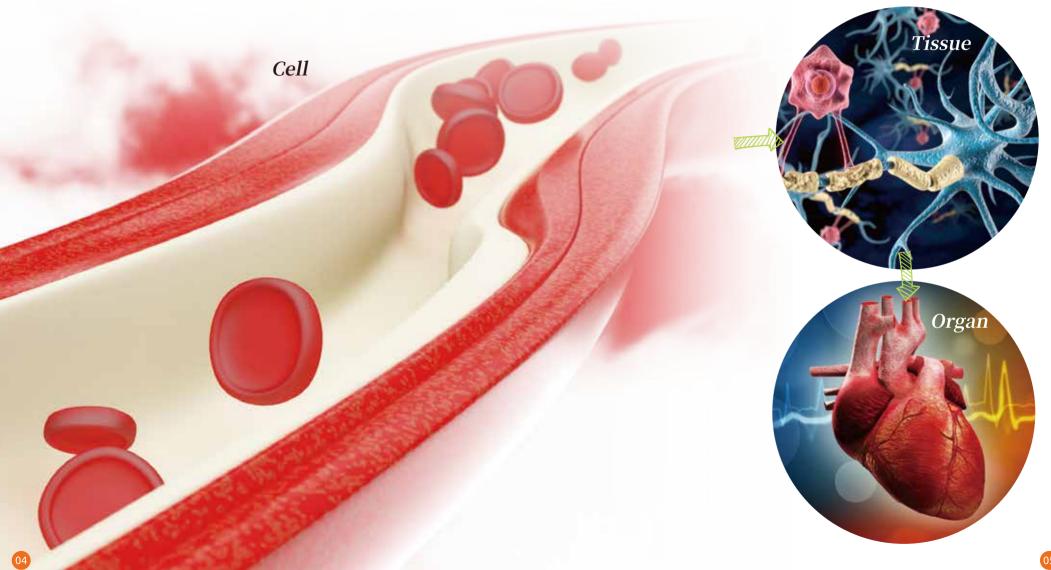
When we are walking down the road, playing on the playground, or sleeping in bed, many parts of our body are working at the same time. But how exactly do the different parts of our bodies divide up the work and how do they work together?

Let's embark on a fascinating journey through the body!

# Building **Blocks of Life**

Our body is made up of cells that are like building blocks. There are many types of building blocks, similar building blocks form various kinds of tissue when they work together.

Multiple tissues work together in forming various organs, each of which has its own ability. For example, the heart is made up of muscles, nerves, connective tissues, and epithelial tissues, that all work together to power the flow of blood through our bodies.



# The Skeletal System

Touch your arm or head with your hand. Can you feel something hard? That is one of your bones. We have 206 bones, all of which fit together like puzzle pieces to support our bodies. Without bones, we would be as soft as a slug.



#### Skull

The skull protects our brain and supports our faces

#### Sternal Rib

The sternal ribs, which are bones in the front of the chest, protect the heart, lungs, and other organs. They also help you breathe

#### Spine

The spine, which consists of vertebras, supports the body. Without it. our bodies could not move

The pelvis, which is shaped like a basin, supports the spine. and protects organs such as the bladder



# **The Respiratory System**

out and feel your chest as because when we breathe we breathe out, air leaves system that ensures that



Oxygen enters your body through your nose and mouth when vou breathe in

The oxygen then flows through the trachea and bronchi, becomes warm and then enters the pulmonary alveoli

Pulmonary Alveoli

The pulmonary alveoli absorb the oxygen from the air and expels carbon dioxide

4 The diaphragm helps us breathe. When we breathe in. it moves downward and the thorax expands; when we breathe out. it moves upward, and the thorax shrinks



# The Journey of Food - The Digestive System

We eat a lot of food every day. Have you ever wondered where the food goes? How is it turned into faeces and excreted from the body? Let's follow food on its journey!

After you chew and swallow food, the food enters the stomach via the oesophagus

Pancreas

2 The gastric muscles get into a peristatic state meaning they

peristaltic state, meaning they slowly squeeze the food through your oesophagus. Meanwhile, the digestive juice secreted by the liver and the gastric gland turn the food into a paste and feeds it into the small intestine

Large Intestine

Small Intestine

3 The pancreas and the intestinal gland secrete digestive juice, while the small intestine absorbs nutrients from the food. All impurities are transported to the large intestine

4 After absorbing the water from the impurities, the large intestine transports it to the rectum and then pushes it out of the body via the anus. That's an entire digestive process

Oxygen is transported via The carbon dioxide produced when the organs blood through the capillaries of work flows into the heart via the superior and the lungs into the pulmonary inferior vena cava. Then the heart pumps the veins and flows into the heart. blood containing carbon dioxide which pumps. Through this into the lungs for air exchange, pumping, oxygen is transported and carbon dioxide is excreted through the aorta to all parts from the body of the body The small intestine absorbs nutrients from food. Then, the nutrients enter blood vessels, and flow to all parts of the body

# **The Circulatory System**

Food is turned into nutrients after digestion, but have you ever wondered how nutrients flow through the whole body?

Put your hand on the left side of your chest and feel the pounding and hear the beating: that's the sound your heart makes when it's working. Heartbeats promote blood flow, thereby delivering nutrients via the blood to all parts of the body.

# **The Immune System**

Occasionally our bodies are attacked by viruses, and we get sick. Sometimes we can just rest and are able to recover on our own, but sometimes we need to take medication to recover. Have you ever wondered why our bodies react so differently? And who is protecting our bodies? It is the immune system in our body, which includes immune organs such as the skin, tonsils, spleen, and lymph nodes, as well as immune cells and immune active substances. These parts work together to keep us healthy.

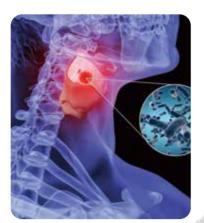
2 The tonsils produce

lymphocytes and anti-

bodies, which are able

to resist bacteria and

viruses



#### The Brain

The brain is responsible for our thinking and memory. It can also give commands to various parts of the body so that they work and move accordingly

1 The thymus is a central lymphoid organ, which produces hormones and lymphocytes



#### Spinal Nerves

Spinal nerves come from the spinal cord and are primarily responsible for the sensory movement of the neck, limbs and internal organs



#### Cranial Nerves

Cranial nerves are paired nerves stretching from the brain, mainly distributed in the head and face. They primarily dominate the sensation and motion of various parts of the head and neck



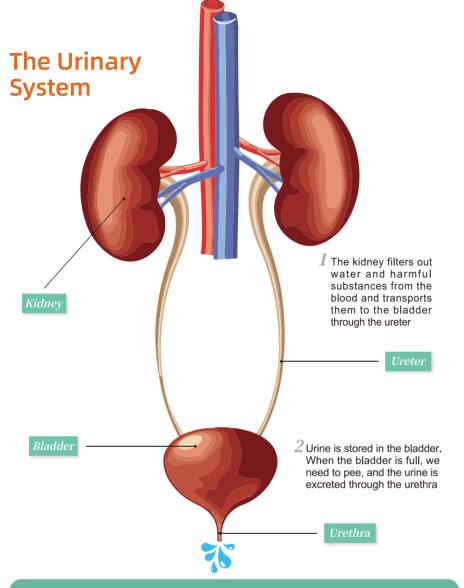
# The Nervous System

While we are running. our muscles help our bones move. Meanwhile, our respiratory systems and circulatory systems provide us with energy. How do these systems cooperate with each other? The nervous system is the mediator between them. The nervous system is divided into two parts, including the central nervous system and the peripheral nervous system. The central nervous system comprises the brain and the spinal cord, while the peripheral nervous system comprises cranial nerves and spinal nerves.

*Lymphatic Vessel* 3 The lymph nodes, composed of lymphatic tissues, are distributed in the neck, internal organs, and inner thighs. They are able to produce lymphocytes and antibodies to kill bacteria invading the body

\_\_\_ | Splee

The spleen produces immune substances and is also responsible for removing impurities, germs and dead cells from the blood



Investigating the Human Body

Every part of our body is very important. Think about what are the main parts that make up our body?

Learn About the Organs in Your Body

## Experimental Materials

3D Human Body Model



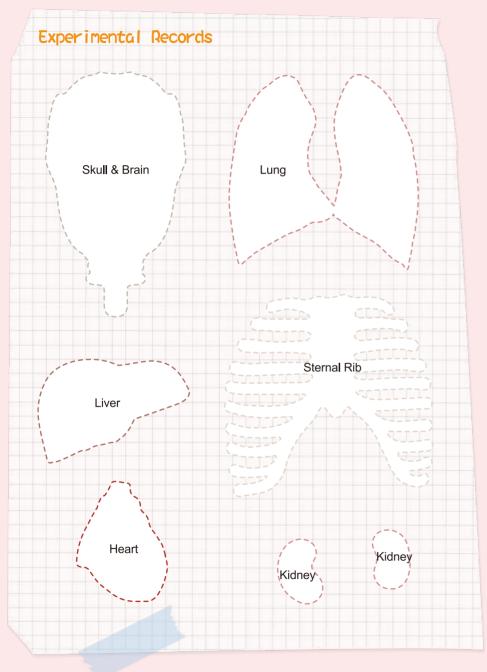
## Experimental Procedures

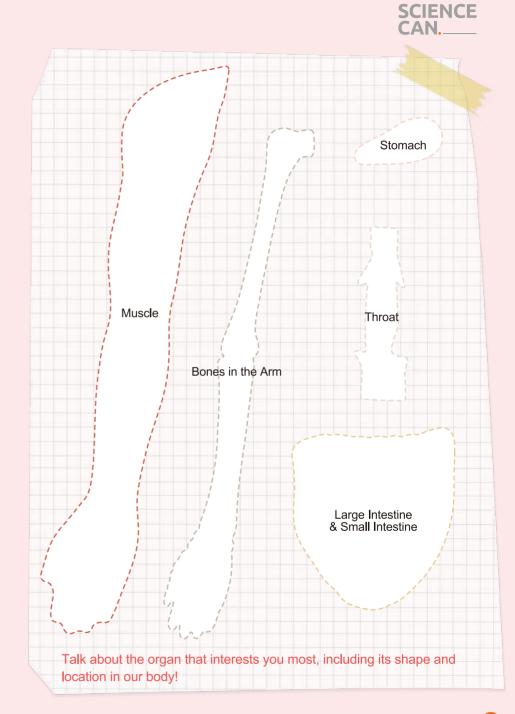
- Step 1: Remove the 3D human body model carefully and observe each part of the human body by referring to the body parts map
- Step 2: Remove each organ according to the instructions, observe each one to learn about its shape and location, and put it on the dotted lines below



Our body produces a lot of toxins and harmful substances every day. How does our body get rid of these toxins and harmful substances? Parts of the toxins and harmful substances are excreted through the urinary system! The urinary system is compromised of the kidney, the ureter, the bladder, and the urethra. It plays a primary role in excreting toxins and harmful substances.









We got to know the location and shape of the main organs. What are their functions? What is the connection between them? Let's explore together!



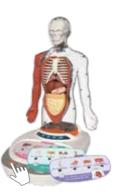
# Experimental Materials

3D Human Body Model



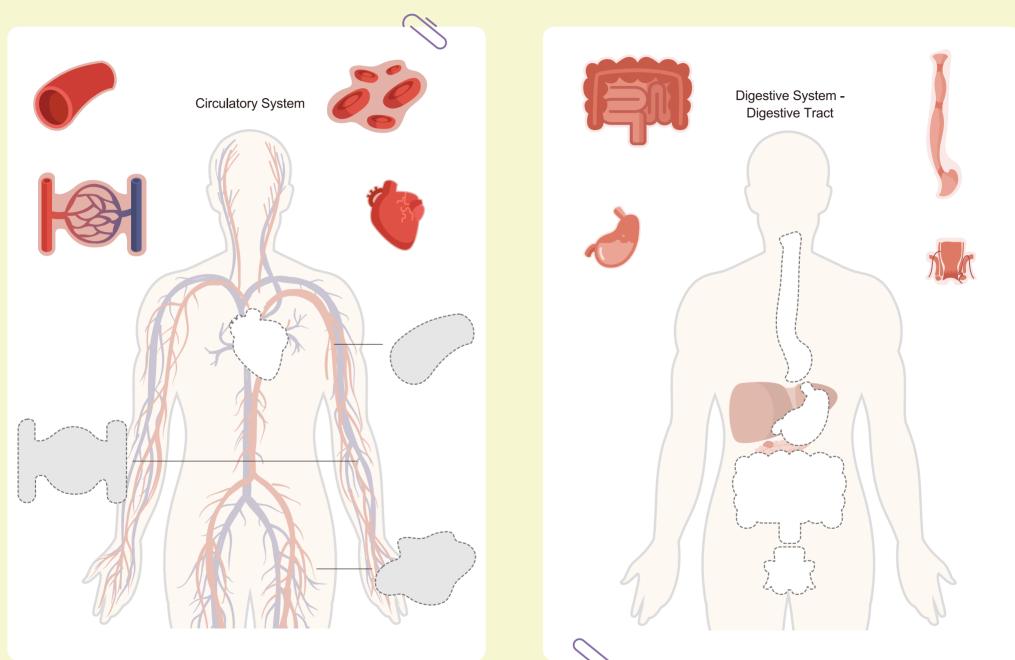
# Experimental Procedures

- Step 1: Put the card in the card slot according to the instructions to learn about each system and organ
- Step 2: Peel off each organ sticker on the back of the booklet and then stick it on the corresponding location



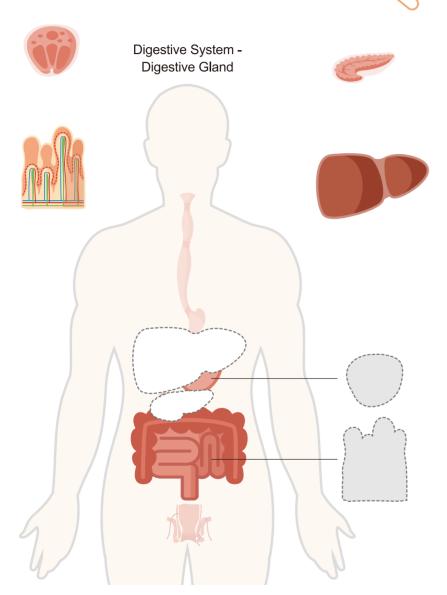
# SCIENCE CAN. Experimental Records **Skeletal System**



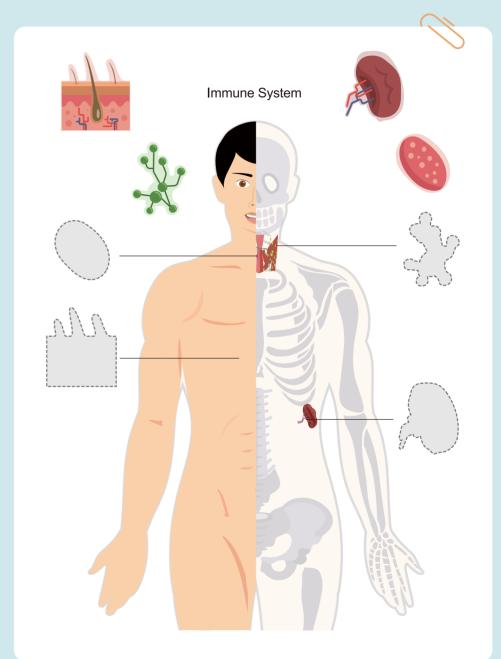




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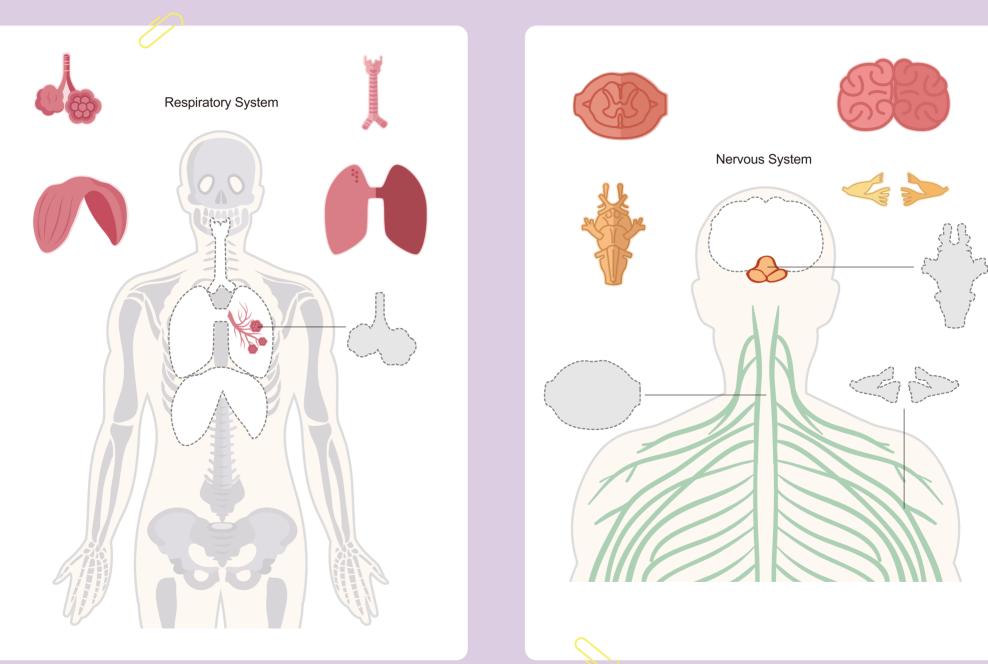


What body systems work while we eat?

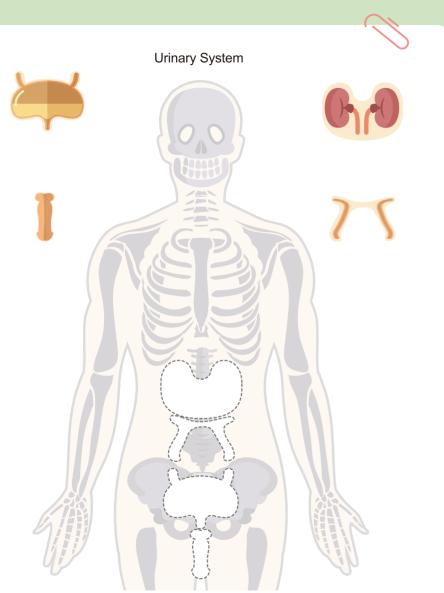


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# Sticker Display







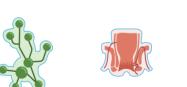






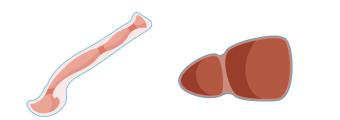














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