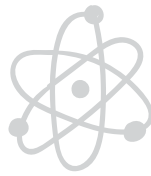


We shall learn :

- Construction of our body
- Sense organs
- Organ systems
- Exercise and yoga

1



Unit-I : Our Body and Its Needs

Our Body : A Wonderful Machine

WARM UP

Which are your sense organs? Tick (✓) them :

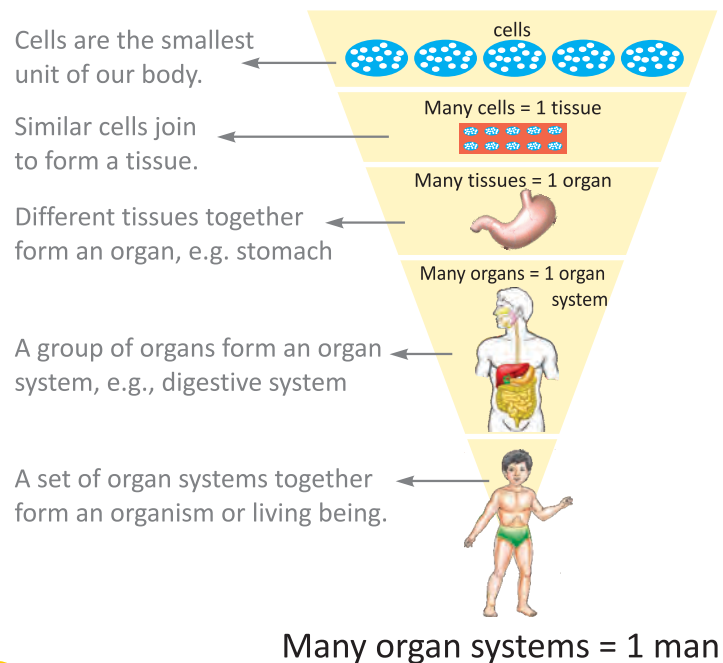
Man has made many wonderful machines. However, his own body is more wonderful than any other he has made. It is a living machine. It can do so many works at a time. Our body has different body parts. Each part does something special, something which only it can do. These parts are called **organs** and their special actions are called **functions**. The body needs all its organs to work properly.

Construction of Our Body

Human body is made up of many small cells.

A group of cells of the same type doing a particular job is called a **tissue**. For example, the blood is a tissue.

A group of tissues that perform a particular function is called an **organ**. The heart is an **organ**. It pumps blood to all parts of the body.



The stomach, lungs, kidneys, ears and eyes are also organs of the body.

Organs can be internal or external.

The **internal organs** are present inside the body and the **external organs** are on the outer side of the body.

Skin is an external organ and **stomach** is an internal organ.

A few organs together carry out one major function for the body.

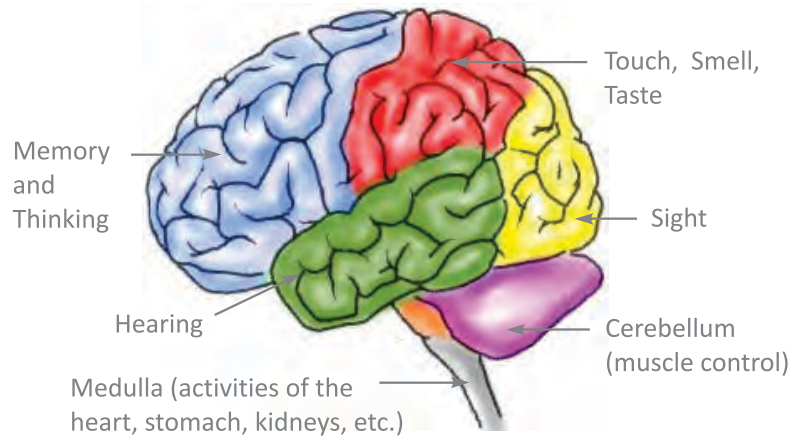
They form an **organ system**.

Different organ systems together make it possible for the body to work, play, learn, grow, etc.

All the organ systems of the body work under the control of brain.

Brain is the control centre of the body. It is connected with all parts

of the body through nerves. The brain receives messages through sense organs and orders for action.



The human brain

Sense Organs

We know about the outside world through our senses. The main sense organs are the eyes, the ears, the nose, the tongue and the skin.



eyes



ear



nose



tongue



skin

The eyes see all that is around us. They send messages to the brain. The brain tells us what we are seeing.

The ears receive sounds from outside. The sounds are carried to the brain. The brain tells us what is making the sound and where the sound is coming from.

Many things give off smells, scents or odours. These travel through the air.

The nose receives these smells. The brain tells us if the smells are pleasant or unpleasant.



The **tongue** helps us to taste things. The tongue is covered with tiny pores which taste different things. We can tell if something is sweet, sour, bitter, salty or hot.

The **skin** helps us to feel. Just under the surface of the skin, there are the ends of nerves. When we touch something, the nerve-endings send a message to the brain. We can feel heat, cold, pressure and pain. We can feel if something is hard or soft.

Organ Systems

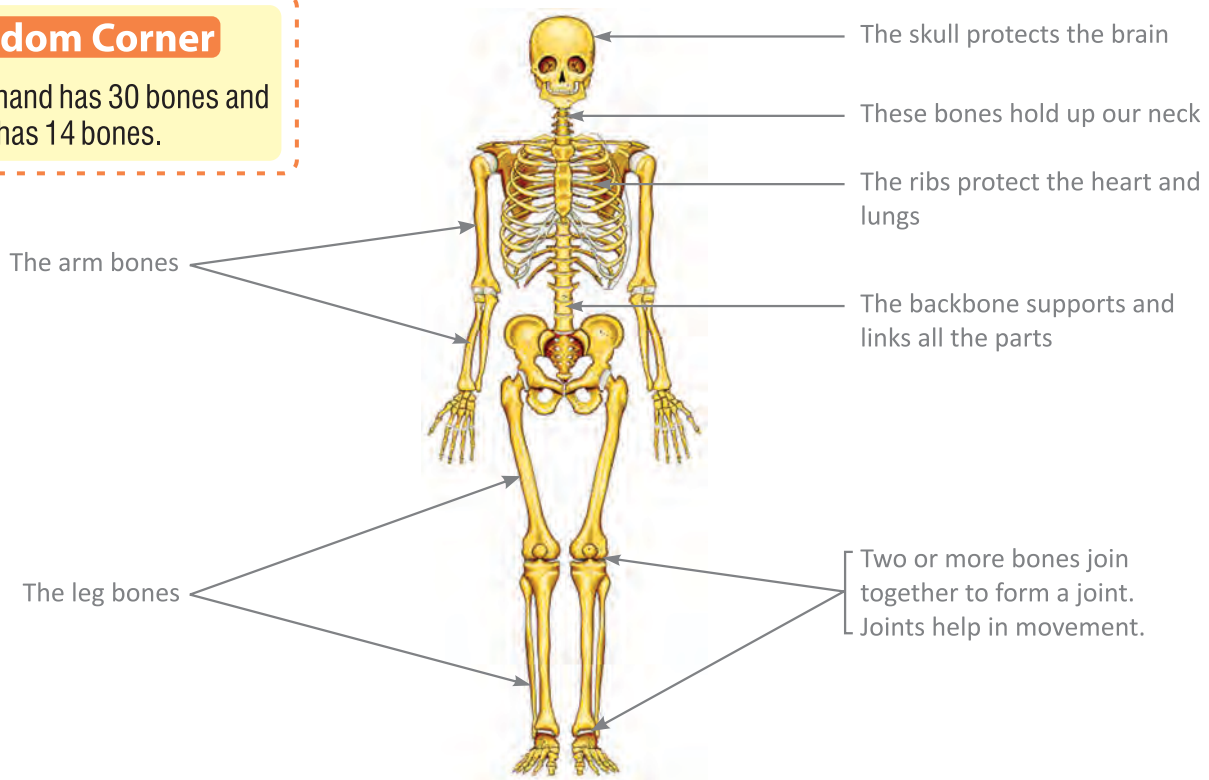
Skeletal System

The human body is made up of 206 bones. These bones together make up the **skeletal system**. The skeleton gives shape and form to our body. It also protects the inner body parts from getting injured.



Wisdom Corner

Our one hand has 30 bones and our face has 14 bones.



skeleton system

Muscular System

There are more than 500 muscles in the human body. All muscles make up the **muscular system**. Muscles are attached to the bones in our body. Muscles help us to move different parts of our body.



We can run, jump, talk, eat, hit, etc using our muscles.



run



jump



talk



eat



kick or hit



muscular system

Muscles of the face move to make us smile, frown, talk, etc.

Muscles of the arm shorten and lengthen to move the arm up and down.

Muscles of the leg also behave like those of the arm.



Wisdom Corner

Our entire body is covered with muscles.

Digestive System

When we smell food, our mouth starts watering. This is the beginning of digestion. **Digestion** is the process of changing the food into a simple form so that it can be used by the body.

The food that we eat gets digested inside our body. The organs that help us do this is called our **digestive system**.

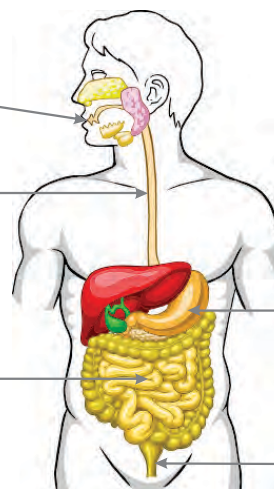
We take in food through our mouth

Food passes down our food pipe

The intestines take in (absorb) what is needed from the food

It gets mixed thoroughly in the stomach

What we don't need is thrown out through the anus

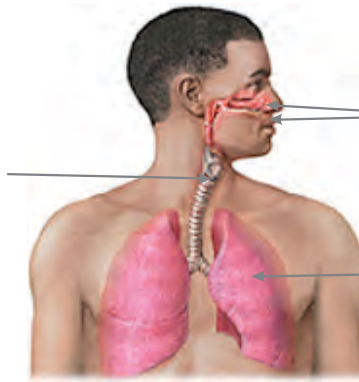


digestive system

Respiratory System

We need to breathe in order to live. Nose, windpipe and the lungs make the **respiratory system**. We have two lungs. We breathe in oxygen and breathe out carbon dioxide. This system supplies oxygen to all parts of the body.

Air goes down the windpipe.



We take in air through our nose and sometimes through our mouth.

It reaches the lungs which become big like balloons.

respiratory system



Wisdom Corner

The left side of the brain controls the right side of the body and right side of the brain controls the left side of the body.



Wisdom Corner

The air we breathe in is called inhaled air and the air we give out is called exhaled air.

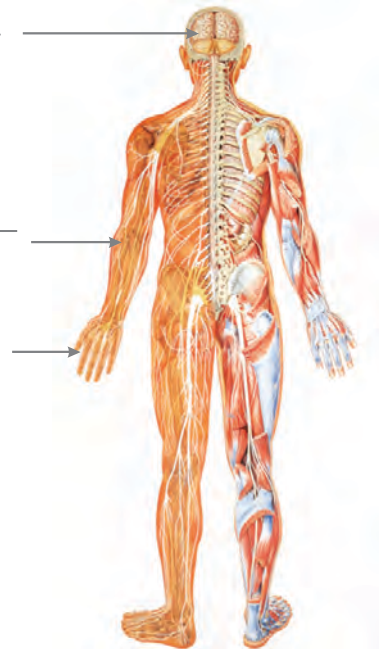
Nervous system

The **Nervous system** consists of the brain, the spinal cord and the nerves. It controls all our actions like seeing, hearing, walking, learning, etc.

The brain understands—
“it’s hot or cold.”

Nerves get the message—
“take hand away”.

Nerves tell the brain—
“we have touched something”.



nervous system

Some blood vessels take blood to the heart.

Heart pushes out blood to big blood vessels.

The big blood vessel branches and goes to all parts of the body.



circulatory system

Circulatory System

The heart, the blood and the blood vessels make up the **circulatory system**. The heart pumps the blood to different parts of our body through small and big blood vessels.



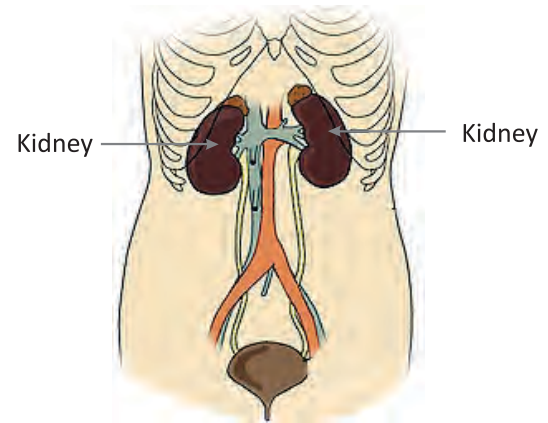
Wisdom Corner

An adult has 5-6 litres of blood in the body.



Excretory System

The waste in the body has to be removed regularly so that body may work smoothly. This is done by the organs of the excretory system. The kidneys remove urine. The skin removes sweat. The lungs throw out carbon dioxide.



excretory system

Reproductive System

The reproductive system helps in producing young ones. Because of this system, life on this earth goes on. Male and female have different reproductive organs.

Exercise And Yoga

Our body becomes stiff and uneasy if we don't exercise. Exercise helps us to keep our body healthy.

Yogasans are a form of exercise. By doing them our body remains healthy and in good condition. They also help us to have a peaceful mind.



Wisdom Corner

Always do exercises only under the supervision of a yoga teacher.



exercise



yogasan



Glossary

Cells	Building blocks of the body
Skeleton	The structure of bones
Blood	Red liquid that flows inside our body
Blood vessels	Tubes that carry blood to different parts of the body
Skeleton system	A system of bones that gives shape to our body
Digestion	Breaking down of food into simpler form

Question Hour-I



A Tick (✓) the correct answer :

- Human body is made up of many small :
(a) flesh (b) cells (c) blood
- Our body gets shape and form due to :
(a) skeleton (b) tissues (c) cells
- The process of changing the food into a simple form is called :
(a) circulation (b) excretion (c) digestion
- The kidneys remove :
(a) sweat (b) urine (c) carbon dioxide

B Fill in the blanks with the correct words from the box:

movement, veins, sense, smallest, brain

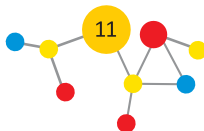
- Cell is the _____ unit of the body.
- All systems of the body are controlled by the _____.
- Man has five _____ organs.
- Main function of the muscles is to help in _____.
- _____ carry impure blood.

C Tick (✓) the correct and cross (X) the incorrect statements :

- Our body is made up of cells, tissues, organs and organ systems.
- The sense organs send messages to the heart.
- Breathing purifies our blood.
- Our skeletal system is made up of 602 bones.
- The kidneys remove carbon dioxide.
- The reproductive system helps to produce young ones.

D Match the following :

- | | |
|-------------|------------------------|
| 1. Muscles | (a) nervous system |
| 2. Bones | (b) digestive system |
| 3. Arteries | (c) skeletal system |
| 4. Nerves | (d) muscular system |
| 5. Stomach | (e) circulatory system |



E Answer the following questions :

1. What are cells?
2. What do you understand by the term 'skeleton' ?
3. How does the framework of bones and muscles help us?
4. Name the organs of the respiratory system?
5. What is the function of the circulatory system?
6. Which organ system helps the body in getting rid of waste materials?
7. What is the role of the reproductive system?

Think Beyond HOTS 

1. What is the human body's biggest organ?
2. What will happen if any of our body organ stops functioning?

Question Hour-II 

A Circle the odd one in each group. Give reasons for your answer :

- | | | | |
|--------------|-------------|---------|-----------------|
| 1. Food-pipe | Lungs | Stomach | Large Intestine |
| 2. Kidney | Skin | Lungs | Heart |
| 3. Brain | Spinal cord | Kidney | Nerves |

B Who am I?

1. I take food from the mouth to the stomach. _____
2. I join the nose to the lungs. _____
3. I work like filters and clean the blood. _____
4. I become big when you breathe in. _____
5. I take blood from the heart to every part of the body. _____

C Write names of the following organs. Also write to which system they belong :



Fun to Drill



How many parts of your body can you find in the word-search? Encircle them :



I	L	Y	S	V	Q	E	M
K	I	D	N	E	Y	S	P
W	V	H	E	A	R	T	T
A	E	X	Y	N	O	S	E
R	R	C	B	R	M	I	N
P	C	T	B	R	A	I	N
F	M	U	S	C	L	E	S
U	S	L	V	E	H	E	K

Fun to Act



1. Count the number of times your heart beats.

Get three plastic or metal funnels, 2 pieces of hollow plastic tubes of the same length, a longer piece of plastic tube and a y-shaped tube. Fit these pieces tightly together. With the help of a friend place two of the funnels of the stethoscope on your ears and place the third on your chest. You will hear your heartbeat which is magnified by the funnels. Count the number of times your heart beats in a minute.



2. Collect pictures of different systems of human body from old magazines and newspapers and paste them in your scrapbook. Write their functions also.