

# OUR BODY 2

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Name \_\_\_\_\_

Form \_\_\_\_\_



# The Seven Life Processes

There are seven processes that all living things can do and these include

**1. Movement** (Changing their position)

**2. Reproduction** (producing young)

**3. Growth** (getting bigger)

**4. Nutrition** (feeding)

	Description	Life process being described
1	<b>Going from one place to another.</b> Animals usually move their body from one place to another. Leaves turn towards the light. Roots grow down into the soil.	
2	<b>Producing new plants or animals.</b> Animals and plants have young to keep the population stable. Flowering plants grow from seeds. Animals grow from eggs	
3	<b>.Getting bigger.</b> Babies grow into children and then into adults . Seedlings grow into bigger plants.	
4	<b>Taking in food (Feeding)</b> Animals eat other animals or plants to give them energy. Plants make their own food using energy from sunlight.	

**Nutrition**

**Growth**

**Movement**

**Reproduction**

## LIFE PROCESSES

### Some questions:

1. The leaves of a plants sometimes turn towards the .....
2. Why might animals need to move:
  - i. To escape from .....
  - ii. To look for .....
3. A flowering plant reproduces by forming .....
4. An animal reproduces by forming .....
5. Why do we need food?  
*One reason we need food in order to get .....*

**Eggs, Seeds, Energy, Light, Danger, Food**

**Some of the main areas in the human body we will study**

Digestive system	Stomach, liver and intestines	Helps us digest food and absorb the nutrients into the body
Circulatory system	Heart and blood vessels	Carries blood around the body (The blood carries oxygen, food and other substances around the body)
Respiratory system	Lungs	Everything connected with breathing Allows oxygen to enter the body (and removes carbon dioxide)

**Link up the body systems with the best word to describe what it does**

**Digestive system**

**Air**

**Circulatory system**

**Food**

**Respiratory system**

**Blood**

An anatomical diagram of a human figure from the waist up, showing internal organs. The diagram is designed for a labeling exercise. There are 15 empty rectangular boxes with arrows pointing to specific organs or structures. The organs shown include the brain, eyes, ears, nose, mouth, trachea, lungs, heart, liver, stomach, intestines, kidneys, bladder, and reproductive organs. The boxes are distributed as follows:
 

- Top left: Brain
- Top right: Brain
- Top right: Eye
- Top right: Ear
- Middle left: Lungs
- Middle right: Lungs
- Middle left: Heart
- Middle right: Heart
- Middle left: Liver
- Middle right: Liver
- Middle left: Stomach
- Middle right: Stomach
- Middle left: Intestines
- Middle right: Intestines
- Bottom left: Bladder
- Bottom right: Reproductive organs

Copy the **bold** words into the correct box

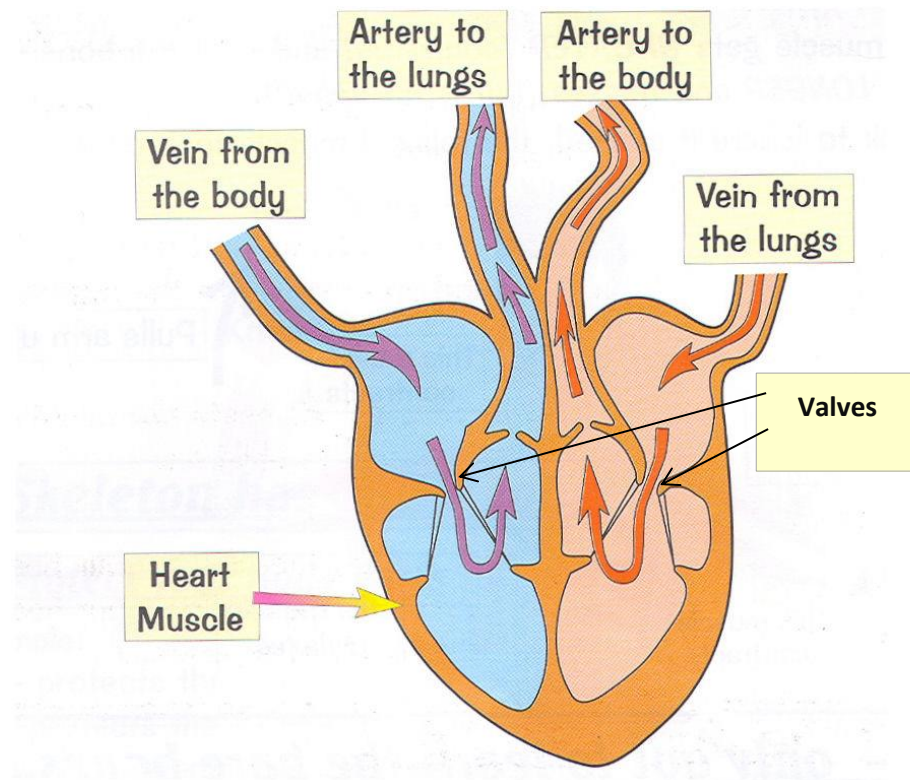
- **BRAIN:** Controls and coordinates all the major functions of the body.
- **EYE:** Contains light sensitive cells that allow us to see
- **LUNG** Puts oxygen into the blood. ii) Removes carbon dioxide from the blood.
- **STOMACH:** Holds the food and starts to break it down (digest it)
- **INTESTINES:** Where the food is digested and taken into the blood
- **BLADDER:** Where urine is stored before you go to the toilet
- **SKELETON:** Supports and protects the organs
- **MUSCLE:** Keeps the bones in the correct place. Allows movement to take place
- **KIDNEY:** Cleans poisonous waste chemicals out of the blood and turns them into urine
- **LIVER:** Helps keep the blood clean by removing poisons (the liver has many other functions)
- **HEART:** The heart pumps blood around the body
- **EAR:** Allows us to hear. The ear also helps us keep our balance
- **SKIN:** Protects us from germs

# The Heart and Blood Circulation

The heart is a pump made of muscle

It contains 4 chambers.

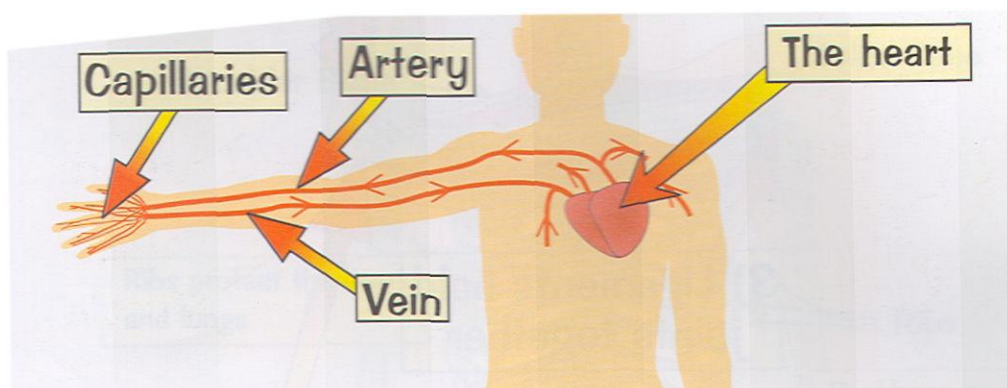
The direction of blood flow is controlled by VALVES



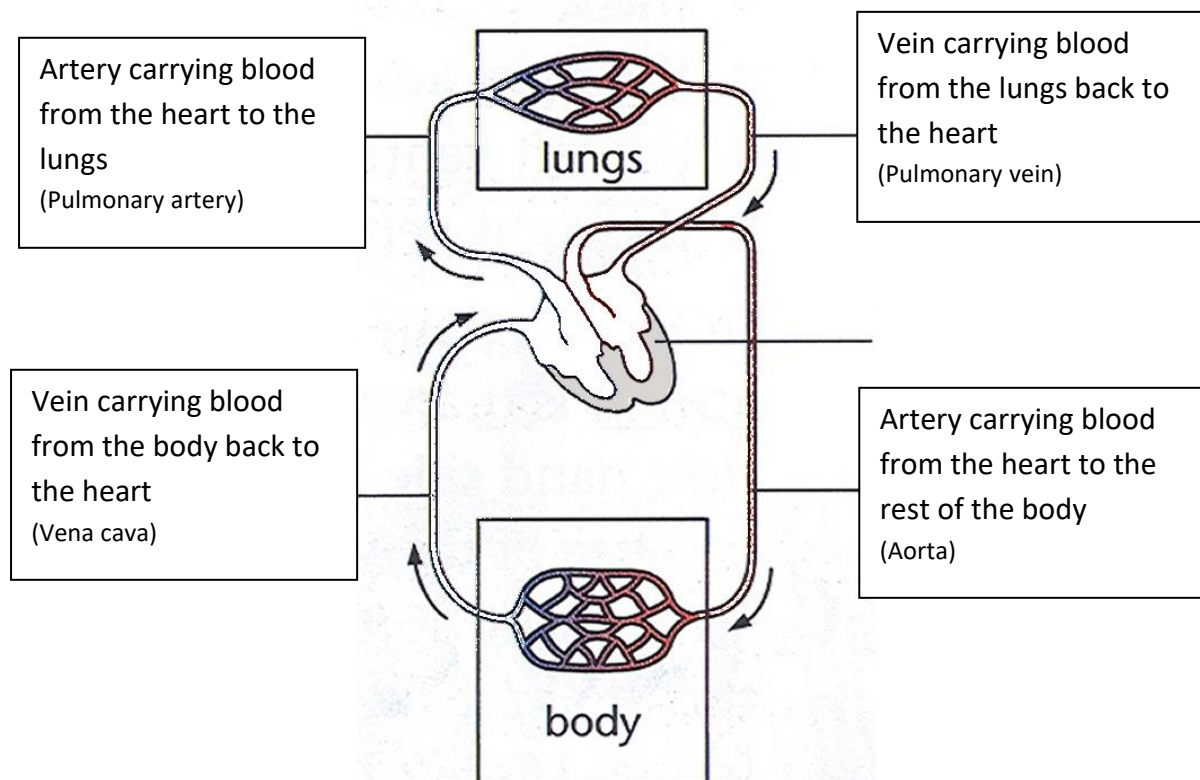
Blood leaves the heart in blood vessels called arteries

Blood returns to the heart in the Veins

Capillaries carry the blood to every cell in our body



## Simplified diagram showing blood circulation around the body



**The lungs put oxygen into the blood and remove carbon dioxide from the blood**

## Measuring a pulse



Your pulse is the number of heart beats in 1 minute  
(beats per minute or b.p.m.)

Your pulse can either be taken on your wrist, at the side of your neck  
or by sometimes by placing your hand over your chest.

Use a stop watch to measure the number of your heart beats in 30  
seconds and double the answer

My pulse while sitting still = ..... bpm

My pulse after taking running around = ..... bpm

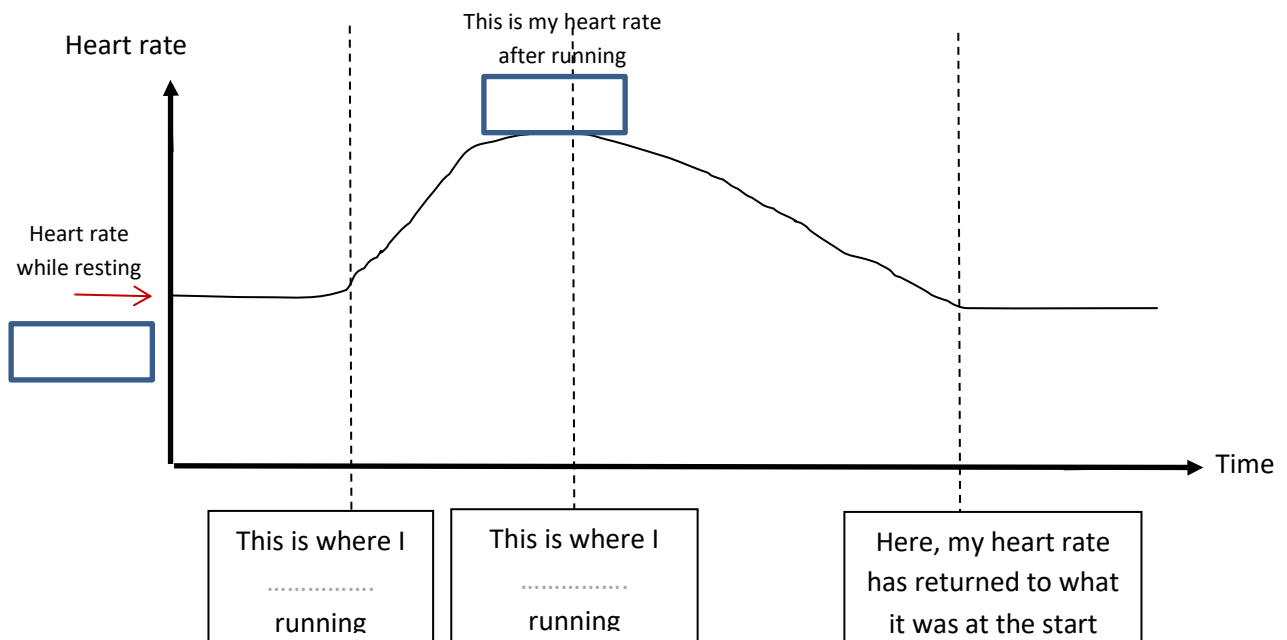
I found that when I ran around my heart rate .....

This happens because.....

.....



## How our heart rate changes when we take exercise



(The time taken for the heart rate to return to how it was before running is known as the 'recovery rate')

- **Conclusion**

Our results showed us that the heart rate increased rapidly after exercise and then gradually dropped back to normal. Our heart pumps quicker to get the blood to the muscles quicker.

- We breathe faster to transfer more oxygen to the blood (and remove the waste carbon dioxide).
- We sweat more to cool us down. As the sweat evaporates it helps cool the body and remove excess heat.

When we take any form of exercise, eg running a X-Country, our muscles use more energy.

This makes several things happen:

1. Our ..... beats faster to move the blood quicker.  
This carries more food and oxygen to the muscle cells.
2. We breathe faster to get more .....
3. We sweat more to .....

### Extra Note:

The process going on in our body which releases energy from sugar is called **RESPIRATION**.

Respiration is a vital process carried out by all living cells all the time to give us energy.

Respiration uses up sugar and oxygen and releases carbon dioxide gas which we breathe out.

The oxygen and carbon dioxide enter and leave the body through the lungs when we breathe.

## Heart disease

Heart disease can be caused by too much fat which clogs the arteries reducing the flow of blood to the heart.

Exercise helps reduce the risk by speeding the flow up blood up which helps clear the arteries.

### How to help reduce the risk of heart disease:

- Take regular exercise
- Eat a balanced diet that is low in fatty foods and salt
- Don't smoke (smoking can damage the arteries)
- Avoid a lot of alcohol

### Mini test

The heart is made of .....

Blood leaves the heart in vessels called .....

Blood returns to the heart in vessels called .....

Blood is pumped by the ..... to the lungs where it picks up ..... ..

After leaving the lungs the blood returns to the heart where it is pumped around the body taking food and oxygen to every single cell.

The tiny blood vessels that carry blood to the cells are called..... ..

When we feel a heartbeat we call it a .....

What value is the normal heart-rate of a boy or girl? .....

When we run our heart rate ..... .. This is because our muscle cells needs more ..... ..

To help keep our heart healthy we should avoid a lot of ..... in our diet and take

lots of .....

**CAPILLARIES    VEINS    INCREASES    PULSE    80 b.p.m.**

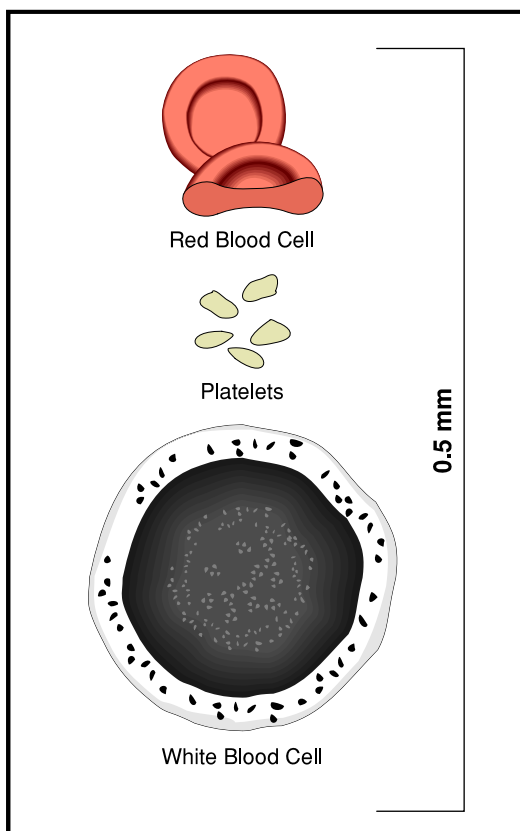
**HEART    OXYGEN    FAT    MUSCLE    EXERCISE    ENERGY    ARTERIES**

## Extra Information

### Why do we need blood? What does blood do?

Blood has many uses: these are some of them:

- Carries oxygen from the lungs to the cells (carried out by the red blood cells)
- Carries Carbon dioxide from the cells to the lungs (dissolved in the blood)
- Carries dissolved nutrients (food) from the intestines to the cells (dissolved in the blood)
- Transports waste away from the cells to the kidneys
- Helps protect the body from infection (carried out by the white blood cells)



**Red blood cells:** Carry oxygen.  
**White blood cells** Fight disease.  
**Platelets** Help blood clot

#### Mini-test

1. Give two uses for our blood: .....

.....

2. What do our red blood cells do? .....

Extra research: What chemical makes blood look red and carries the oxygen? .....

What foods do we need to eat to help our blood make more red blood cells and what do they contain?

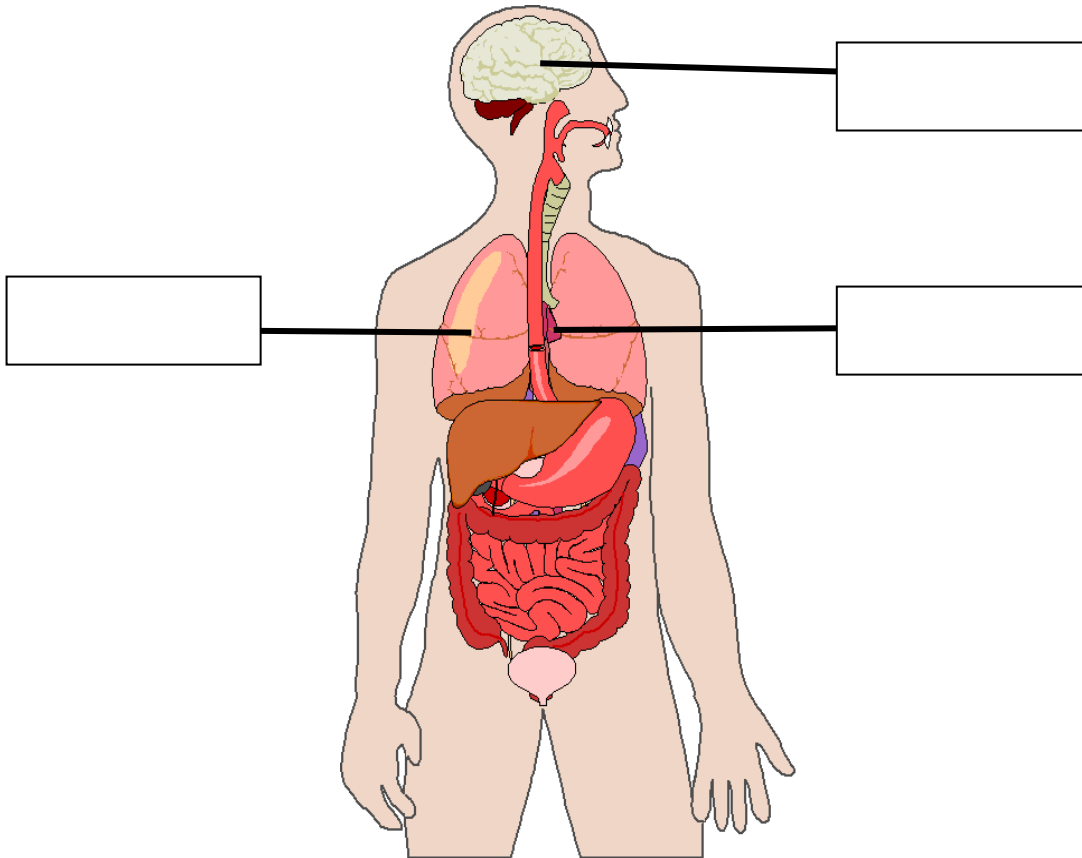
Food to eat:..... This food is rich in .....

Where are red blood cells made in our body? .....

# Body Assessment Test1

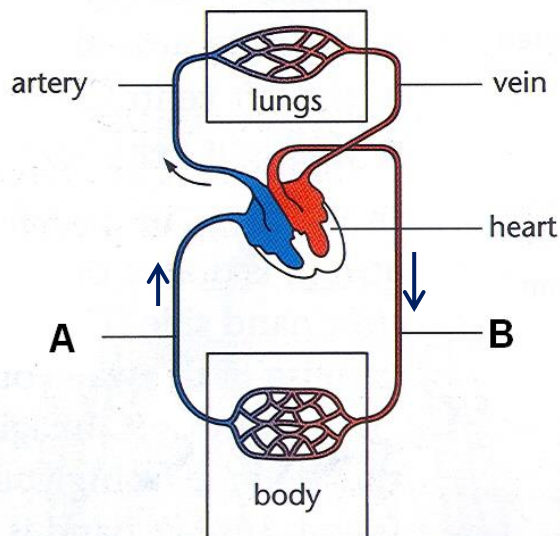
Name .....

1. Complete the labels showing organs in the human body using the list after the question to help you.



Lung, Heart, Stomach, Brain

2. Name the organ which does each of the following:
- a. Controls our actions.....
  - b. Adds oxygen to the blood.....
  - c. Pumps blood.....



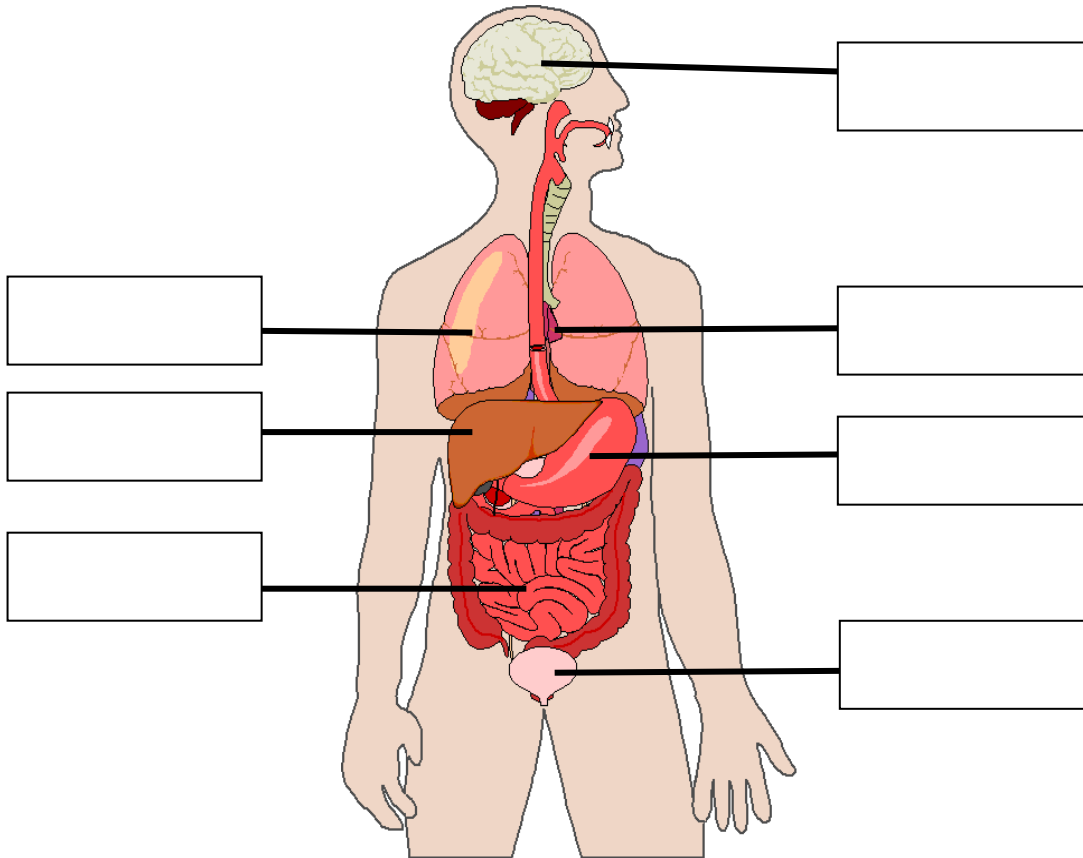
- Is the part marked **A** on the diagram (taking blood **towards the heart**) and artery or vein?  
ARTERY or VEIN ?.....
- Is the part marked **B** on the diagram (taking blood **away from the heart**) and artery or vein?  
ARTERY or VEIN ?.....
- What is the normal heart rate of a boy or girl?..... beats per minute
- What will happen to your heart-rate when you start to run?  
Increase, Decrease, or Stay the same ?.....

3. Explain briefly why your heart rate changes when you start running

.....

## Body Assessment Test 2      Name .....

1. Complete the labels showing organs in the human body using the list after the question to help you.



Bladder, Lung, Heart, Intestine, Liver, Stomach, Brain

4. Name an organ which does each of the following:

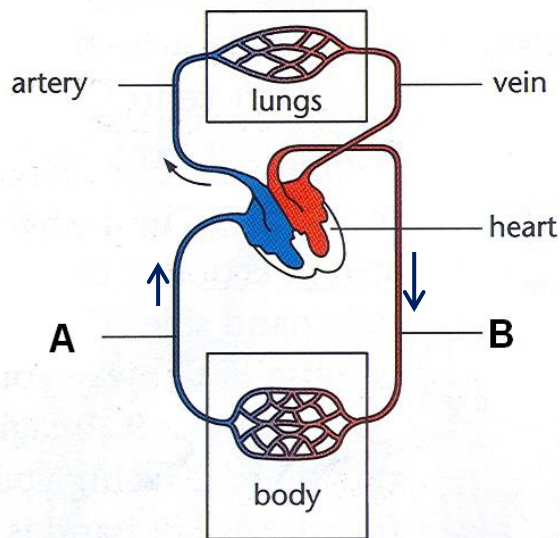
- d. Digests food:.....
- e. Coordinates (controls) our actions.....
- f. Adds oxygen to the blood.....
- g. Stores urine.....
- h. Pumps blood.....

5. a. What job is carried out by our kidneys?

.....

- b. We have TWO kidneys.  
Mark an X on the diagram above to show the position of each kidney

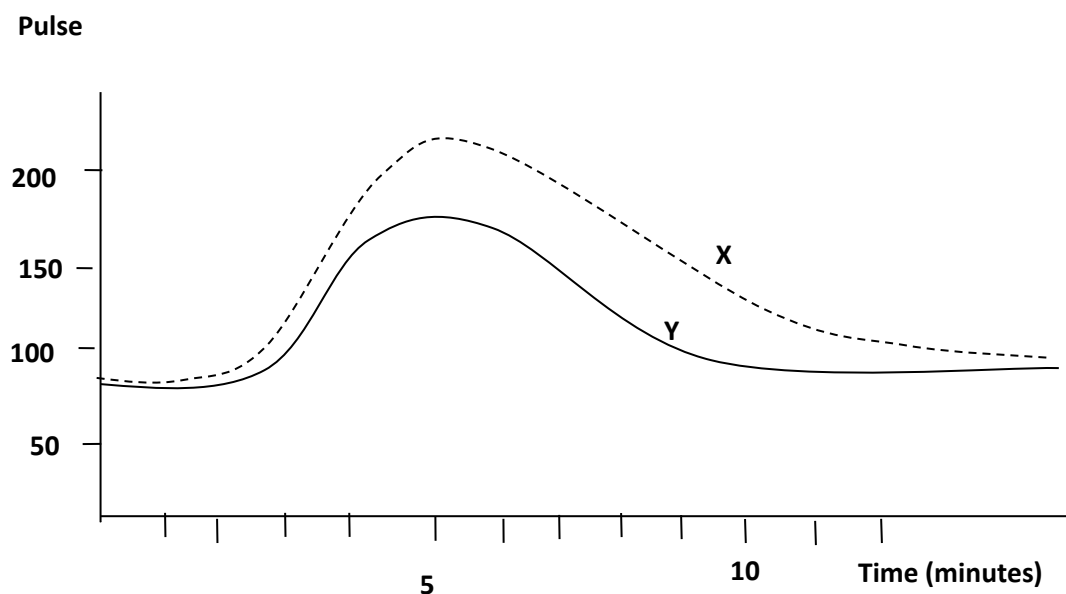
4. Look at the diagram below which shows a simplified drawing of human blood circulation and then answer the questions below the drawing. The arrows show the direction of blood flow.



- What kind of vessel is the tube marked A (artery, capillary or vein?).....
- What kind of vessel is the tube marked B (artery, capillary or vein?).....
- What do we call the tiny blood vessels that carry blood to the individual cells?.....
- Arteries carry blood AWAY FROM or TOWARDS the heart? .....
- What will happen to your heart-rate when you start to run? Increase/Decrease/Stay the same
- Where does your blood go when it leaves the heart?  
The cells in your body/Your lungs/ Your body AND your lungs
- Name the waste gas produced by our body when we run.....
- What is the normal heart rate of a boy or girl?..... beats per minute
- Name two substances your blood carries around the body: ..... ..
- What is a pulse? .....

5. The graph below shows the heart rate of two adults, Peter (line X) and Mary (line Y). One of them smokes and one of them does not.

They both had their pulse measured and were then each asked to run on a running machine for 2 minutes. Their pulse was then measured again.



- a) Where might you measure the pulse on your body?.....
- b) Peter (line X) stopped running after ..... minutes
- c) Which person was the smoker, X or Y? .....
- e) give a reason to explain why you gave your answer above:

.....

6. a Why does a person's heart rate increase when they run?

.....

.....

b Give one OTHER change you might notice in a person's body that might show that they had just been running fast?

.....



# Food and digestion

The **digestive system** – food is chewed into small pieces and then swallowed.

In the stomach and intestines it is broken down (digested) into even smaller pieces that will pass through into the blood stream. It is used by the body for energy, growth and repair. What is not used is passed out of the body as waste.

## Diet

A diet is the type of food we eat. There are many diets: low carbohydrate (to help us lose weight), high protein (to build up our muscles) and so on.

The best diet is usually a BALNCED DIET which is just the right amount of all the nutrients.

The table below shows the nutrients that need to be present in a balanced diet

Nutrient	Why the nutrient is needed	Example foods
Carbohydrate	The main source of ENERGY for movement, warmth and growth	Sugar and starch eg potato, bread
Fat	Gives us Energy. Helps insulate the body from cold.	Dairy food (milk, cheese), oils
Protein	Body building and growth	Meat, soya, cheese, eggs, fish
Vitamins	Needed in small amounts to keep our body healthy Vitamin. C helps stop a disease called scurvy	Fresh fruit and vegetables. Lemon and orange provide vitamin C
Minerals	Needed to keep us healthy eg <u>calcium</u> makes our bones strong.  <u>iron</u> is needed to for our body to make blood	Milk and cheese (calcium); vegetables (eg spinach is rich in iron)
Fibre	Helps digestion. Helps reduce the risk of heart disease	Brown bread, vegetables, cereal
Water	Water is the main part of all living cells. Our body is 75% water.	drinks , fruit

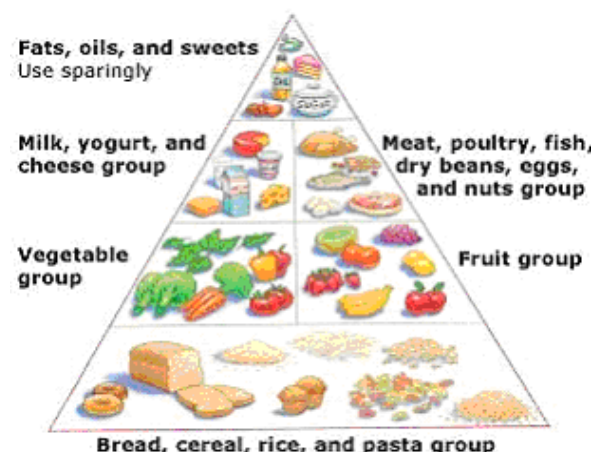
## We don't need to eat the same amount of everything

Only small amounts of food high in fat, oil or sugar

Medium amounts of foods high in protein like cheese, poultry, meat, eggs and fish.

Plenty of fruit and vegetables

Plenty of fibre rich carbohydrates like bread, cereals and pasta



# Keeping Healthy

## 1. Eat a healthy diet

Eat a diet low in fat, sugar and salt:

This helps keep your heart healthy

Eat lots of fruit and vegetables.

Fruit and vegetables are high in fibre and vitamins and are also low in fat

## 2. Take lots of exercise

Exercise helps you in many ways:

- Helps keep your heart healthy
- Makes you stronger
- Improves your stamina
- Burns up energy
- Makes you feel better

## 3. Don't smoke

There are many poisonous substances in cigarette smoke.

These damage your lungs as well as other parts of your body

## 4. Don't take drugs or drink large amounts of alcohol

Drugs and too much alcohol can damage your liver

They also can affect your mood and make you feel depressed or sad.

### Mini-test

1. Write down three things in food that you should eat only small quantities of:

i..... ii..... iii.....

2. Write down two substances that are in fruit and vegetables that are good for you.

i..... ii.....

3. **Which part of your body may be harmed by** ( join up with lines)

Smoking

Heart

Eating too much fatty food

Lungs

Drinking too much alcohol

Liver

4. Give two reasons why exercise is good for you

.....

.....

# Human life Cycle

- **Adult**

## ***Reproduction***

- **Unborn baby** (sometimes called an embryo or foetus)
- **Baby**
- **Childhood**

***Puberty*** (a child will go through puberty usually between about 10 years old and 14 years old)

- **Adolescent (teenager)**
- **Adult**
- **Old age**