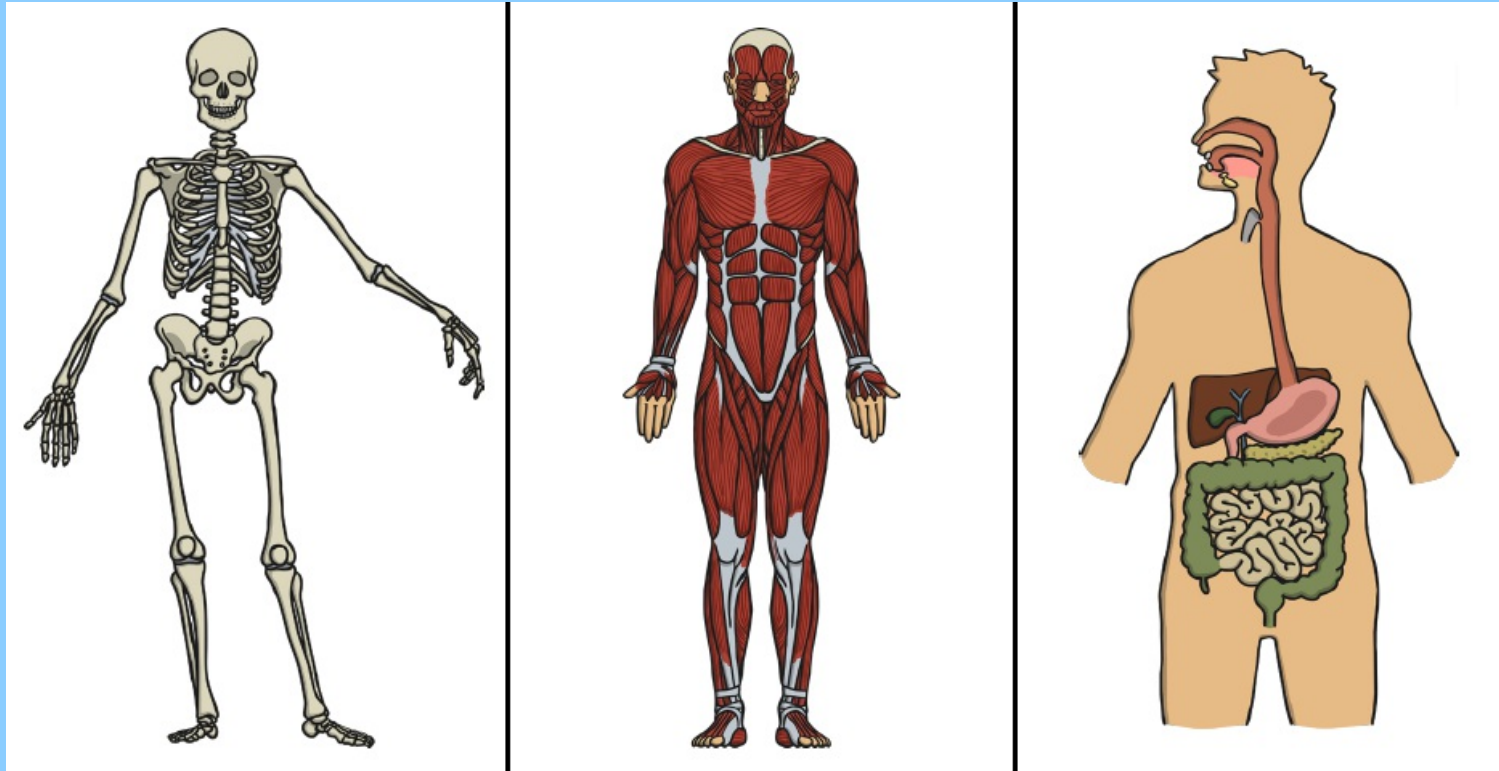


WALT: Identify and name the main parts of the human circulatory system

Success Criteria:

1. I can name the parts of the human circulatory system.
2. I can identify the components of blood and describe their functions
3. I can name the three types of blood vessel

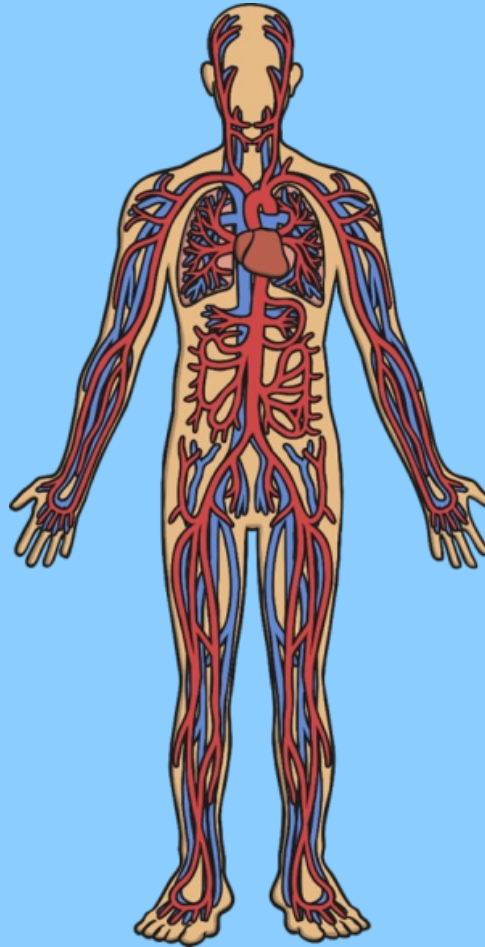
Recap TTYP: Name the different systems in the body below that you learnt about in Year 3 and 4. What is the purpose of each system?



This term, we will be exploring the circulatory system

TTYP: What do you already know about the circulatory system? Use the following vocabulary to help you:

blood
blood vessels
heart
veins
arteries
capillaries
lungs



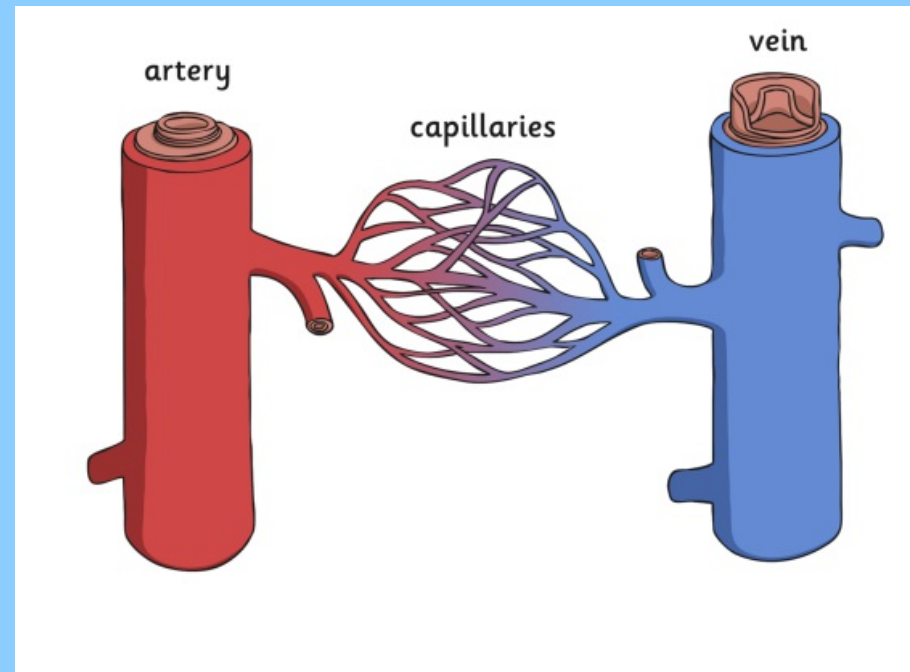
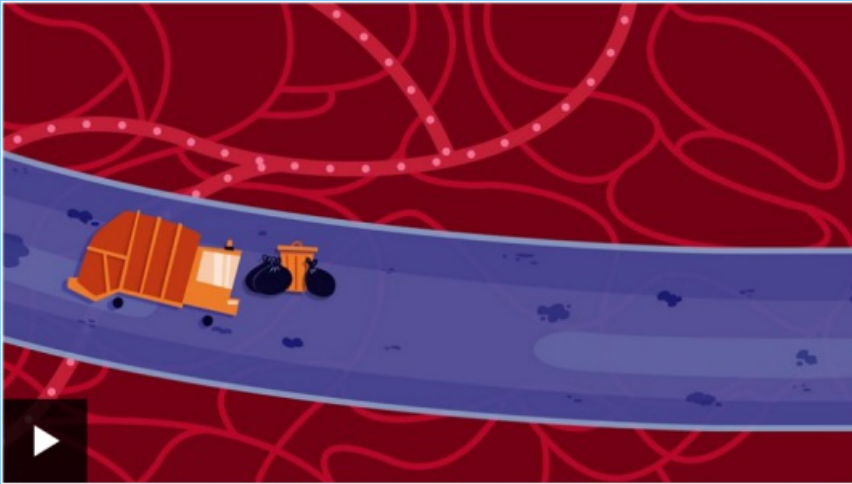
There are three main parts of the circulatory system

blood
blood vessels
heart

This week, we'll be learning about blood and blood vessels.

Watch the video: What are blood vessels?

<http://www.bbc.co.uk/guides/zqv4cwx#z2g8k7h>



Blood is pumped round the body through blood vessels:

- arteries - carry blood away from the heart
- veins - carry blood back towards the heart
- capillaries - tiny blood vessels that carry blood to the individual cells - they join the arteries to the veins

Look at the blood vessels on your arm. They are gathered around your body and allow blood to travel to and from the heart and lungs (to gain oxygen).



TTYP: Why do you think organs and muscles in your body require oxygen?

TTYP: Why do some of the blood vessels appear blue beneath the surface of our skin?

The bluish color of **veins** is only an optical illusion. **Blue** light **does** not penetrate as far into tissue as red light. If the blood vessel **is** sufficiently deep, your eyes see more **blue** than red reflected light due to the blood's partial absorption of red wavelengths.

TTYP: What is blood?

We are going to demonstrate a blood smoothie. Look at the ingredients your teacher shows you. Read the blood component description and functions cards. Which component of blood do you think the ingredients represent?

1.

- I am red in colour – I am the reason blood is red
- I transport oxygen around the body and remove carbon dioxide
- I am also called an erythrocyte
- I am the most common type of cell found in blood
- I am doughnut shaped (without an actual hole) and very flexible
- I don't have a nucleus
- 2-3 million of me are made every second in bone marrow
- I work for about 120 days then head to the spleen or liver for recycling

2.

- I fight off infection and foreign bodies – sometimes causing inflammation
- I am white in colour
- I only make up 0.5% of blood, but am very important
- I clear debris and help healing when you cut yourself
- I am also called a leukocyte
- I have a rough texture and am very flexible
- I have a nucleus inside me

3.

- I make your blood clot when you cut yourself
- I make up about 0.5% of your blood
- If I am not called on to make a clot within 9 days, the spleen removes me!
- I am about 20% of the diameter of red blood cells.
- I am colourless and don't have a nucleus
- I am a fragment of a cell

4.


- I am the gloopy liquid part of blood
- I make up about 55% of blood
- I am mainly made up of water, but also contain nutrients, hormones, antibodies, clotting factors, and large proteins
- My large proteins can carry things that don't dissolve in water, like fat, hormones and some vitamins
- I move nutrients across the body
- I can transport some carbon dioxide for removal from the body
- I also scoop up other waste products to get rid of

red blood cell
white blood cell
platelets
plasma



marshmallows
sprinkles
pineapple juice
strawberries

Recap:



Quiz

What is in your blood? Quiz

Test your knowledge of what's in your blood with this quiz.

Play

red blood cell
white blood cell
platelets
plasma

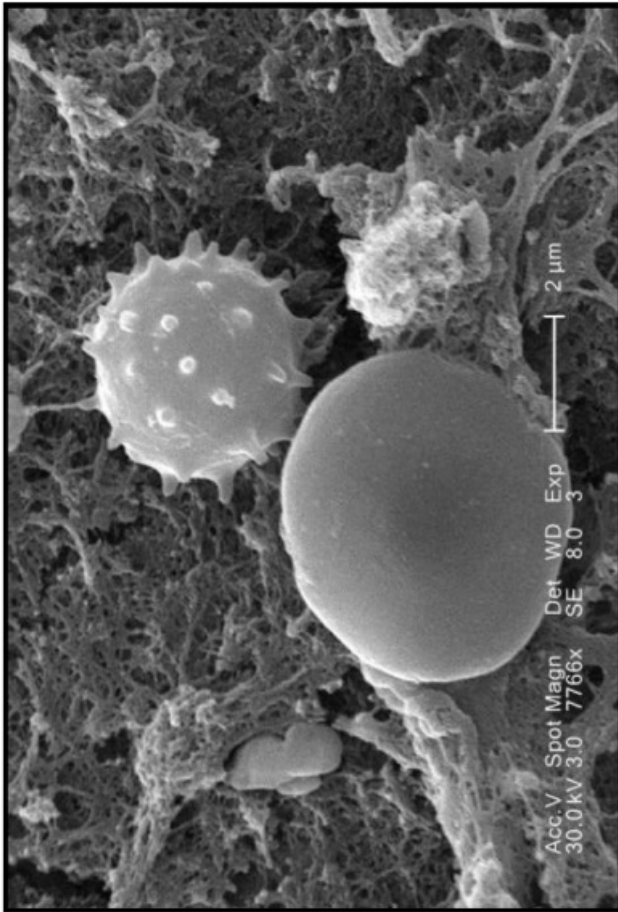
Why is blood is important?

- transports oxygen (RBC),
- hormones (chemical messengers),
- nutrients and water to the cells;
- transports waste away from the cells;
- helps protect the body from infection (WBC)
- helps keep the body at $\sim 37^{\circ}\text{C}$

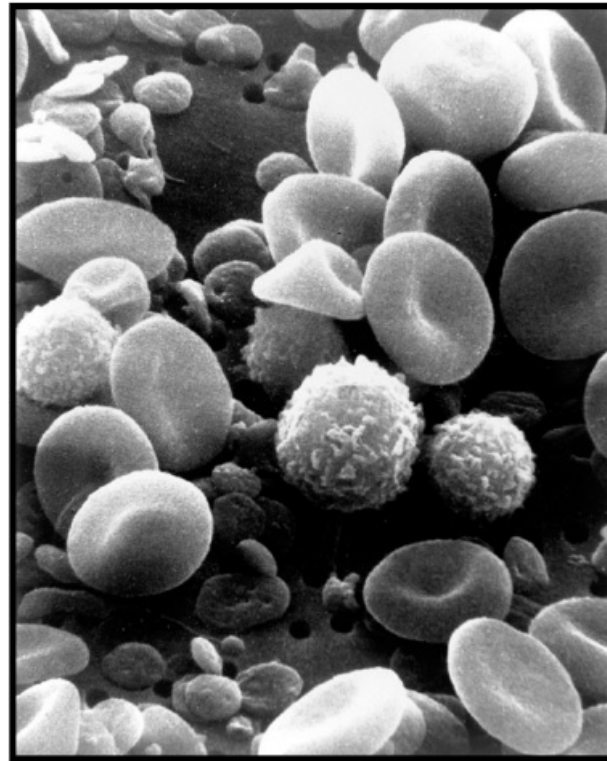


Look at the images of the different components of blood taken under a microscope. Can you guess what they are?

Red and white blood cells under an electron microscope

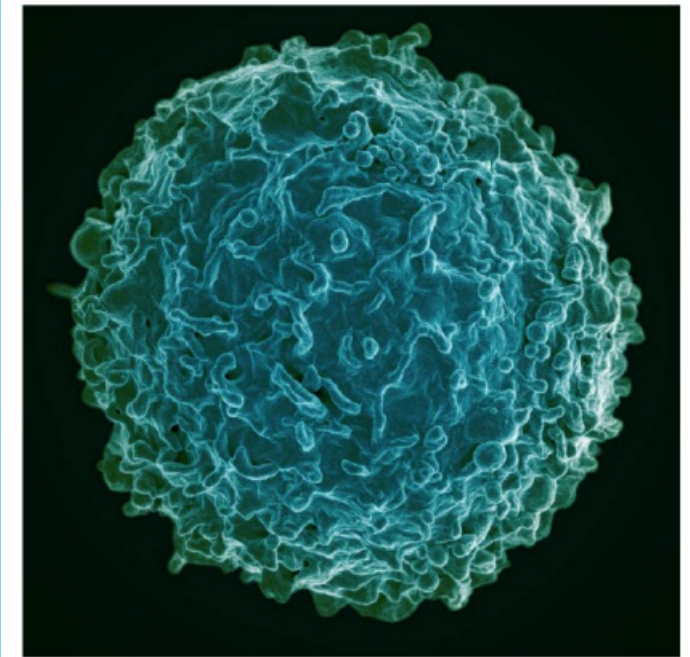


Blood as seen under an electron microscope (all components)



red blood cell
white blood cell
platelets
plasma

White blood cell under an electron microscope
(stained blue - colourless in true form)



WALT: Identify and name the main parts of the human circulatory system

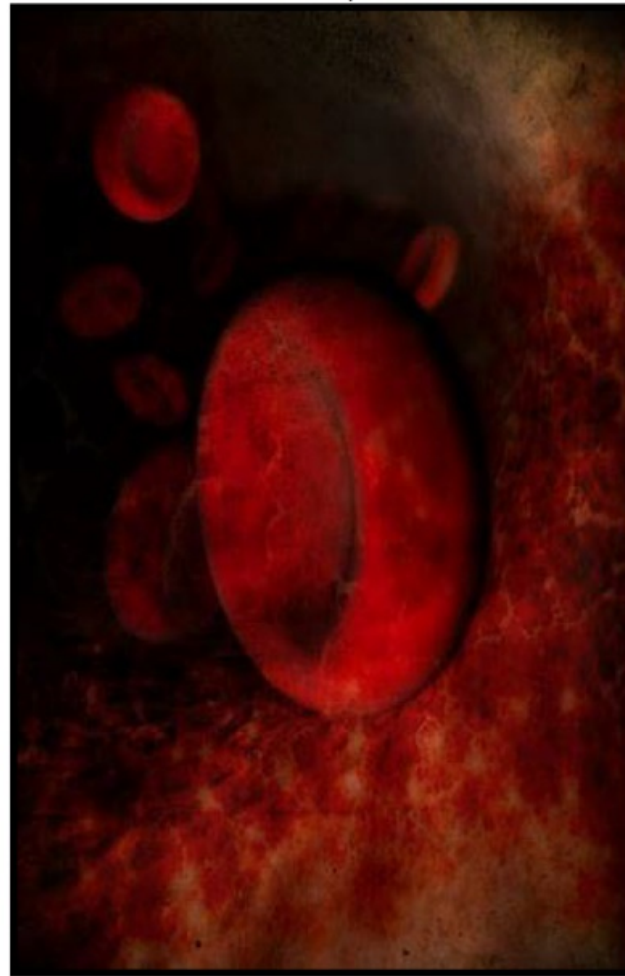
This is a painting of red blood cells by Andrew Mason. Notice the fine details of the cells he painted.

Activity:

Use the images taken under a microscope to create sketches of red blood cells, white blood cells and platelets.

Write a paragraph about the different components of blood and their function.

Red blood cell by Andrew Mason



Vocabulary

- red blood cell
- white blood cell
- platelets
- plasma

- oxygen
- waste
- defense
- clotting

- blood vessels
- arteries
- veins
- capillaries