

**Blood Heart****What should I already know?**

- The circulatory system is made up of the heart, the lungs and the blood vessels large and small that transport blood.
- That the heart keeps us alive.
- Blood transports nutrients and waste around the body.
- Looking after our hearts is very important -keeping fit and eating healthily are the best ways to do this.

**Linked Science knowledge for the topic**

Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding.

Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe.

Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models).

**Vocabulary**

aorta	The main artery which carries blood from your heart to your body.
artery	A large blood vessel.
capillaries	Tiny blood vessels.
donor (medical)	A person who donates an organ/part of their body or blood.
dissection	Cutting something open or cutting it into pieces to examine it.
DNA	Deoxyribonucleic acid. Think of it as code for our body that decides everything about us!
organ rejection	When your body rejects a transplanted organ.
plasma	A yellowish fluid that carries everything our body needs.
red blood cells	Blood cells that carry oxygen to the cells in your body.
vein	A blood vessel, smaller than an artery.
white blood cells	Blood cells which fight disease in the body.

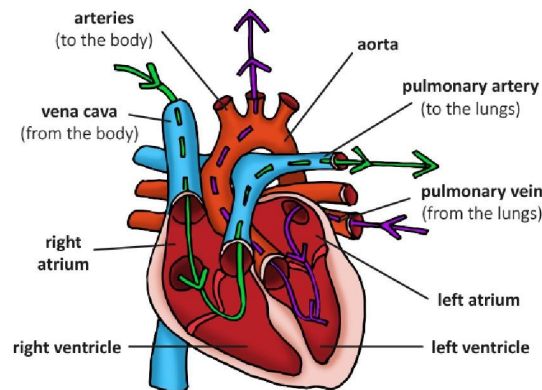
**By the end of the topic we will be able to...**

Confidently discuss the function of the heart and circulatory system, identifying key parts of both. Explain in detail how the circulatory system both supplies nutrients to the body and removes waste from it. Plan and carry out a range of investigations, making clear predictions linked to scientific knowledge then identifying how an investigation could be improved.

# Blood Heart

## The heart

The heart is a muscle that is found in the chest cavity between the lungs. It is responsible for pumping blood around the body, through the circulatory system. The heart is made up of four chambers known as the left atrium, right atrium, left ventricle and right ventricle.



## Healthy heart

The heart is a hardworking organ and it is important to keep it healthy. A balanced diet and regular exercise are vital for heart health. A balanced diet should include plenty of fruits and vegetables, whole grains, low-fat dairy products, lean meat and fish, nuts and pulses and good fats. Eating foods that are high in salt, sugar and fat can be bad for the heart and lead to blockages in the arteries. This means that the heart must work harder to pump blood around the body.

## Blood

Blood is made up of red blood cells, white blood cells, platelets and plasma. Each part is made in a different area of the body and has a special role.



### Plasma

Plasma is the main component of blood. It is the liquid that carries the red blood cells, white blood cells and platelets around the body. It also carries nutrients, hormones and proteins to where they are needed and takes away waste products.

### White blood cells

White blood cells protect against illness and disease. They produce antibodies that kill bacteria, viruses, fungi and parasites.

### Platelets

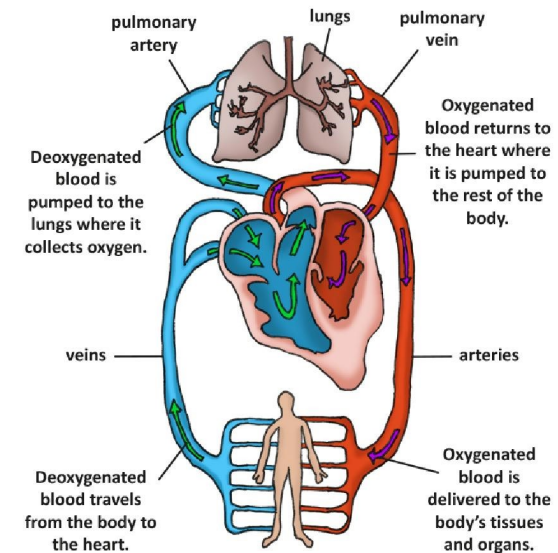
Platelets are small blood cells that help the body to stop bleeding after a cut or scrape.

### Red blood cells

Red blood cells contain a protein called haemoglobin that carries oxygen from the lungs to different parts of the body. They also take waste carbon dioxide to the lungs to be breathed out.

## The circulatory system

The circulatory system is made up of the heart, blood vessels and blood. It is responsible for transporting nutrients, oxygen, water and waste products around the body.



## Circulation

In the 1600s, an English doctor called William Harvey discovered how blood travels around the body. He was the first to establish that the body has a fixed amount of blood flowing through the arteries, which travels through the veins and back to the heart in a cycle. The heart pumps between four and six litres of blood around the body every day. The heart rate, also known as the pulse, is the number of times the heart beats in a minute. The heart pumps faster during exercise to deliver more oxygen around the body.