

Additional Resources – Guided Reading

Circulatory System

Read the text on the next page and answer the questions.

1. What is the job of the pulmonary circuit?

2. Find and copy the word from the text that is similar in meaning to 'carries'.

3. Find and copy two adjectives that the writer used to describe the walls of the arteries.

4. Why do veins have thinner walls than arteries?

5. Give three features of a non-fiction text that the author has used.

6. What percentage of the blood is plasma?

7. Give the two important jobs of the white blood cells.

8. Give the name of the section which tells you about blood clotting.

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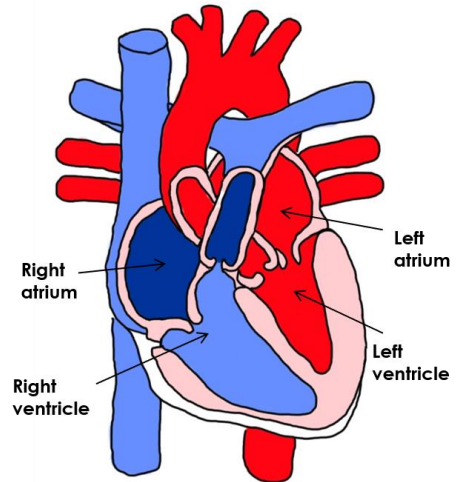
The Circulatory System

The circulatory system is a group of organs which transports blood and **nutrients** around the body. It consists of two circuits: the pulmonary circuit and the systemic circuit. The pulmonary circuit carries blood to the lungs to get oxygen and then back to the heart. The systemic circuit then carries the blood around the body to deliver the oxygen and return **deoxygenated** blood back to the heart.

The Heart

The heart is the **organ** responsible for pumping blood around the body. It is about the size of a **clenched** fist and is made up of four chambers. The human heart beats on average, sixty to ninety times per minute. Blood enters the right atrium of the heart and is emptied into the right ventricle. The right ventricle then pumps the blood to the lungs to collect oxygen and then travels to the left atrium. Next it is pushed into the left ventricle where it is pumped to the rest of the body via the aorta.

A diagram of the human heart



Blood Vessels

Arteries

Arteries are the blood vessels which carry oxygenated blood away from the heart. They have thick, muscular walls as they have to **withstand** high pressure.

Veins

Veins are the blood vessels which transport deoxygenated blood back to the heart. Veins have thinner walls as the blood travelling back to the heart is under low pressure. There are also valves in veins to prevent the blood from flowing backwards.

Capillaries

Capillaries are very small blood vessels which are only one cell thick. They are found in muscles and the lungs. They are responsible for delivering oxygen and nutrients to cells around the body therefore they need to be thin to allow these to pass through easily.

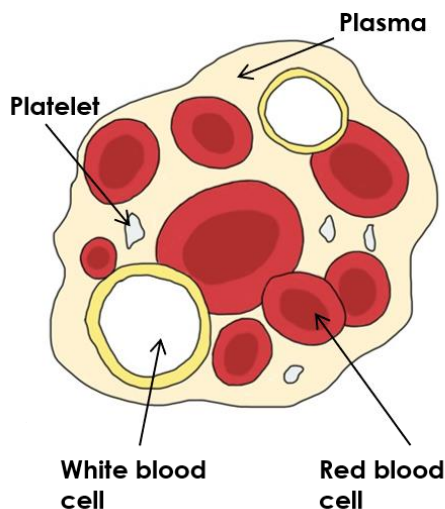
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Blood

Blood is the red coloured liquid that is pumped around the body. The average human adult has around five litres of blood in their body. Blood is made up of four different **components** which each perform a different **function** in the body.

A diagram of the components of blood



Plasma

Plasma is the **fluid** part of blood. It makes up about 55% of the total blood volume. It is mostly made up of water as well as lots of other substances such as hormones, proteins and salts.

Red Blood Cells

Red blood cells carry the oxygen around the body. They contain a protein called haemoglobin which carries the oxygen. It is the **interaction** between the haemoglobin and oxygen that gives blood its bright red colour. Red blood cells are made in the bone marrow and usually last for around 120 days. Arteries have bright red blood in them because there's lots of oxygen present, whereas the blood in the veins is deoxygenated so it appears dark red (or blue when covered by skin).

White Blood Cells

White blood cells play a big part in the body's immune system and help to fight off **infection**. They protect the body from germs, such as **bacteria** and viruses. Pus (the yellowish fluid often found at the site of an infection) is a collection of dead white blood cells.

Platelets

The purpose of the platelets is to help wounds heal. They clump together to form blood clots (known as a scab) which prevents further bleeding.