

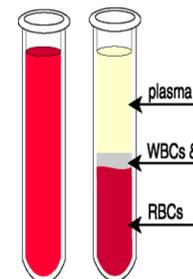


Subject: Science Topic: Circulatory System — Oak Class-Year 5 and 6

Key Vocabulary

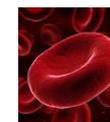
component	part
oxygenated	Supplied with oxygen.
blood vessel	How blood is transported around the body.
artery	The blood vessel that carries blood away from the heart.
vein	The blood vessel that carries blood to the heart.
capillary	The blood vessel that connects veins and arteries.
aorta	The artery leaving the left ventricle.
atrium	The smaller top chambers of the heart.
ventricle	The larger bottom chambers in the heart.
pulmonary artery	The blood vessel leaving the right ventricle, carrying blood to the lungs.
pulmonary vein	The vein leading from the lungs back to the heart (to the left atrium)
valves	They prevent the back flow of blood. Allows blood to only flow the correct way.
vena cava	The major vein transporting blood from the whole body back to the heart (to the right atrium).
gas exchange	Is the process of oxygen entering the bloodstream from the lungs and the lungs receiving carbon dioxide from the blood to breathe out.
alveoli	Tiny air sacs in the lungs where gas exchange takes place.
nutrients	Substances that animals need to stay alive and healthy.
absorb	To soak up a substance.
transport	To carry something.
villi	Structures in the small intestine which absorb nutrients.

The Blood



- Blood consists of four main components
- Red blood cells (44%)** - transport oxygen
- White Blood cells (0.05%)** - fight infection
- Platelets (0.05%)** - clot your blood
- Plasma (55%)** - gloopy part of blood

Red blood cells are pushed around your body by your heart, which acts like a pump, beating about 100,000 times a day!



As the blood cells reach your heart, they pass through valves, which are like doors and only open one way, keeping blood pumping in the same direction.



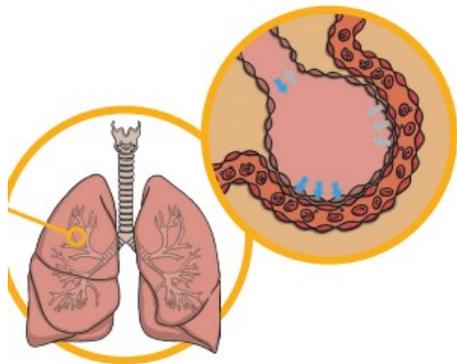
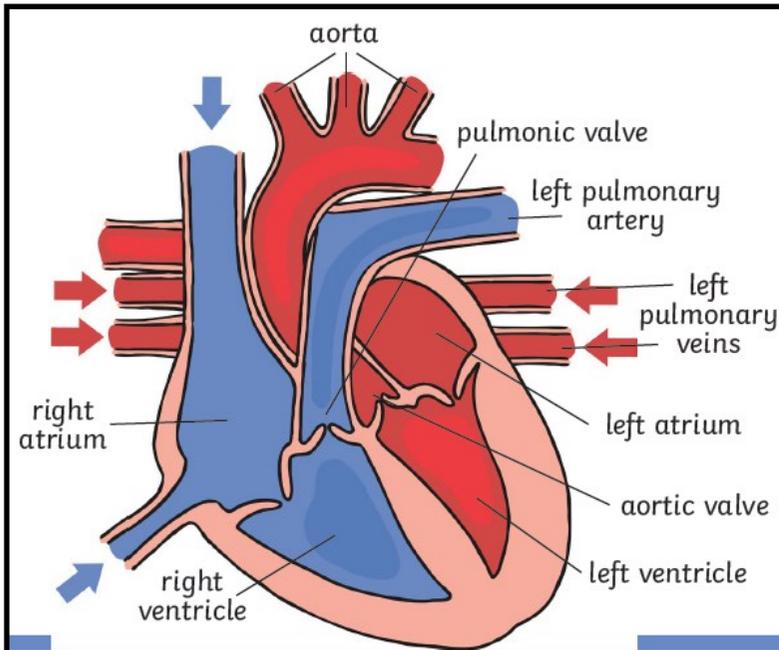
Blood is pumped to the lungs to pick up oxygen (O₂) which has been inhaled (breathing in). It then goes back to the heart to get pumped to every other part of the body



As it drops off oxygen around the body, it picks up carbon dioxide (CO₂) to take back to the lungs for the lungs to exhale (breathing out).

The Heart

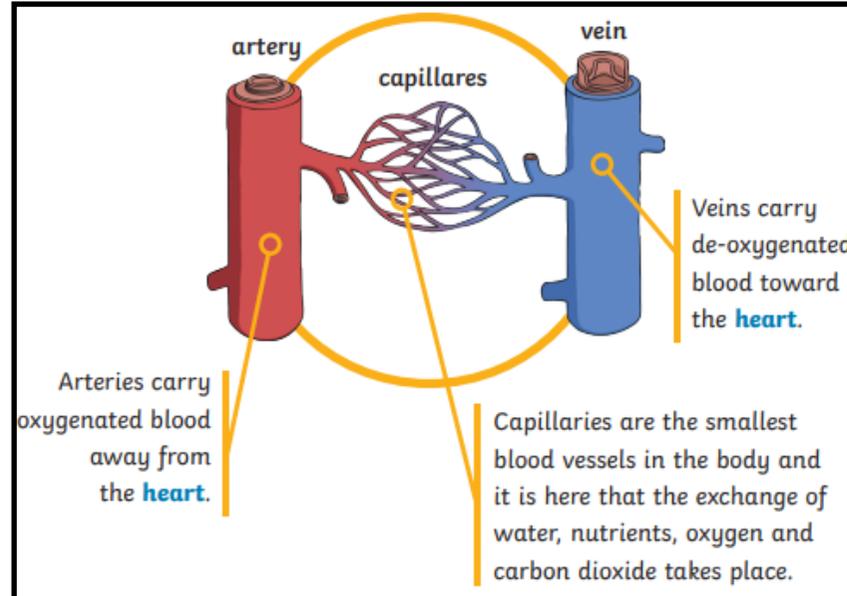
The heart is an organ whose role is to pump blood around the body. In humans the heart is part of a double circulatory system. This means the blood passes through the heart twice on its journey around the body. The right side pumps deoxygenated blood to the lungs to get oxygen. The heart then pumps the oxygenated blood to the rest of the body.



Gas exchange takes place in the alveoli in the lungs. This means the red blood cells receive oxygen from the lungs and carbon dioxide is taken away.

The blood is now oxygenated.

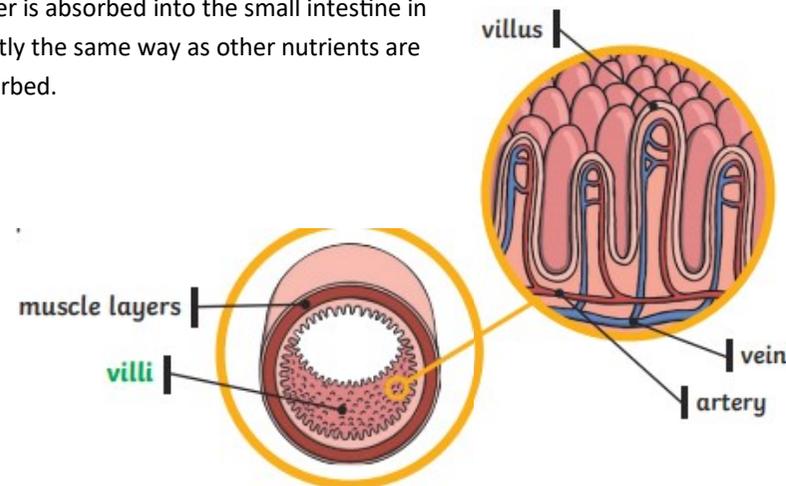
Blood Vessels



Inside the small intestine

The nutrients from your food pass through 'villi' in the wall of your intestine and are absorbed into the blood vessels.

Water is absorbed into the small intestine in exactly the same way as other nutrients are absorbed.



Regular exercise

- Strengthens muscles including the heart muscle
- Improves circulation
- Increases the amount of oxygen around the body
- Releases brain chemicals which help you feel calm and relaxed
- Helps you sleep more easily

Blood transports:

- Gases (oxygen & carbon dioxide)
- Nutrients (including water)
- Waste products

A healthy diet involves eating the right types of nutrients in the right amounts

Drugs, alcohol and smoking have negative effects on the body.