



Knowledge - The Circulatory System

Mammals have hearts with four chambers. Blood that comes into the body is **deoxygenated**. The heart pumps blood to the lungs to get oxygen, and the blood that has come from the lungs is **oxygenated** again.

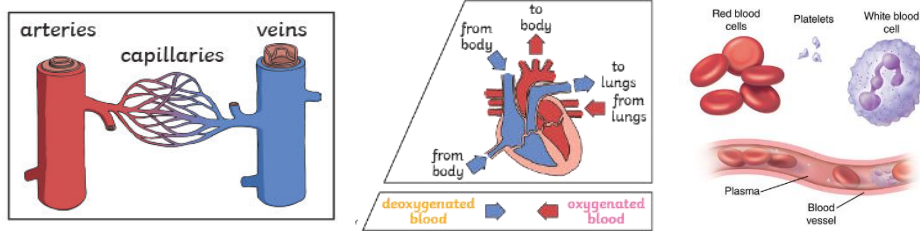
Capillaries are the smallest **blood vessels** in the body and it is here that the exchange of water, **nutrients**, oxygen and carbon dioxide takes place. **Arteries** carry **oxygenated** blood away from the heart. Veins carry deoxygenated blood toward the heart.

Blood transports gases (mostly oxygen and carbon dioxide), nutrients (including water) and waste products.

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

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

Plasma is liquid. The other parts of blood are solid. Red blood cells carry oxygen through the body. White blood cells fight infection when you're sick. Platelets help you stop bleeding when you get hurt. Regular exercise strengthens muscles, improves circulation, increases the amount of oxygen around the body and much more!



Working Scientifically Knowledge - Pattern Seeking

We will plan an enquiry into how different forms of exercise affect the heart. We will take measurements of our pulse rate, record data and results, use these to make predictions, present findings, identify patterns and draw conclusions.

Key Vocabulary

Circulatory system = A system which includes the heart, veins, arteries and blood transporting substances around the body.

Heart = An organ which constantly pumps blood around the circulatory system.

Blood vessels = Tube-like structures that carry blood through tissue and organs. Veins, arteries and capillaries are the three types of blood vessels.

Oxygenated blood = Blood that has oxygen. It is pumped from the heart to the rest of the body.

Deoxygenated blood = Blood where most of the oxygen has been transferred to the rest of the body.

Drugs = Substance containing natural or man-made chemicals that have an effect on your body.

Alcohol = A drug produced from grains, fruits or vegetables when they are put through the fermentation process.

Nutrients = Substances that animals need to stay alive and healthy.

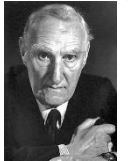
Questions for Experts

How does the **circulatory system** link to the digestive system?
What impact does being overweight or underweight have on our health?
Consider the pulse rate of different sized mammals.

Additional Information

John Boyd Orr (1880-1971)

Scottish Nutritionist - Director general of the UN Food and Agriculture



Organisation. He worked to improve global production and distribution of food. He tried to eliminate world hunger.

William Harvey (1578-1657)

English Physician - Through dissecting creatures including humans, he discovered the nature of blood circulation and the function of the heart as a pump.



Where can this take you?

- Doctor
- Surgeon
- Nurse
- Pharmacist
- Consultant
- Nutritionist
- Cardiologist
- Dentist