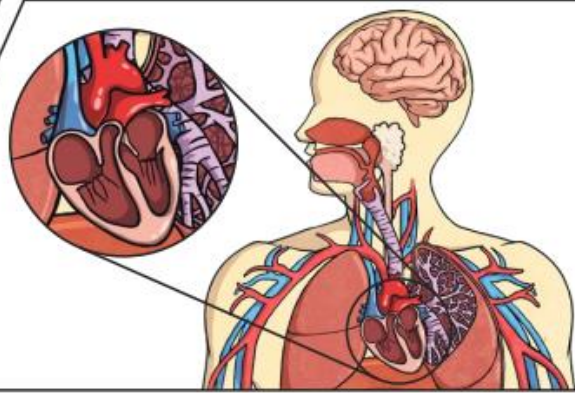


**Key Vocabulary**

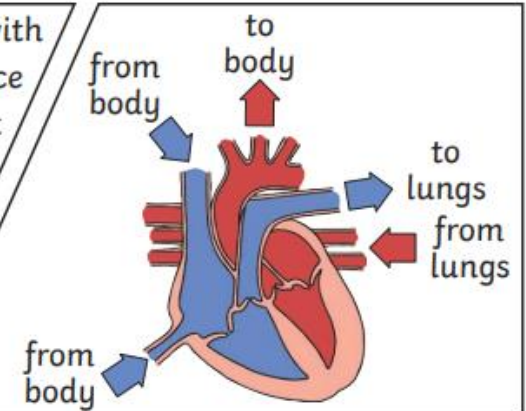
circulatory system	A system which includes the heart, veins, arteries and blood transporting substances around the body.
heart	An organ which constantly pumps blood around the circulatory system .
blood vessels	The tube-like structures that carry blood through the tissues and organs. Veins, arteries and capillaries are the three types of blood vessels.
oxygenated blood	Oxygenated blood has more oxygen. It is pumped from the heart to the rest of the body.
deoxygenated blood	Deoxygenated blood is blood where most of the oxygen has already been transferred to the rest of the body.

The **heart** pumps blood to the lungs to get oxygen.

It then pumps this **oxygenated blood** around the body.



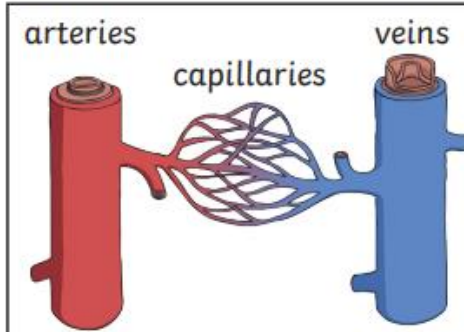
Mammals have **hearts** with four chambers. Notice how the blood that has come from the body is **deoxygenated**, and the blood that has come from the lungs is **oxygenated** again. The blood isn't actually red and blue: we just show it like that on a diagram.



deoxygenated blood → **oxygenated blood**

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**.

If you linked up all of the body's blood vessels, including arteries, capillaries, and veins, they would measure over 60,000 miles.

Key Vocabulary

drug	A substance containing natural or man-made chemicals that has an effect on your body when it enters your system.
alcohol	A drug produced from grains, fruits or vegetables when they are put through a process called fermentation.
nutrients	Substances that animals need to stay alive and healthy.

Plasma is liquid. The other parts of your blood are solid.



Platelets help you stop bleeding when you get hurt.



Red blood cells carry oxygen through your body.

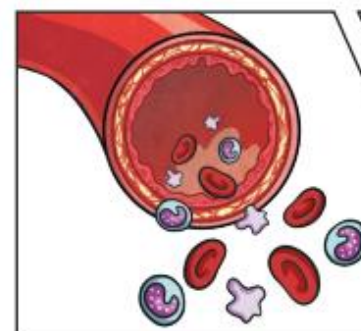


White blood cells fight infection when you're sick.

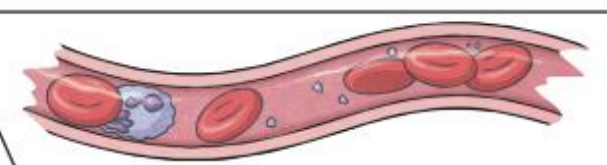
Drugs, **alcohol** and smoking have negative effects on the body.



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



The liquid part of blood contains water and protein. This is called plasma.



Blood transports:

- gases (mostly oxygen and carbon dioxide);
- nutrients** (including water);
- waste products.

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;
- strengthens bones.

It can even help to stop us from getting ill.



Top Takeaways (Science Knowledge)

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans

Working scientifically (Science Skills)

- i) planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- ii) taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- iii) reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations