

Science 1

I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.

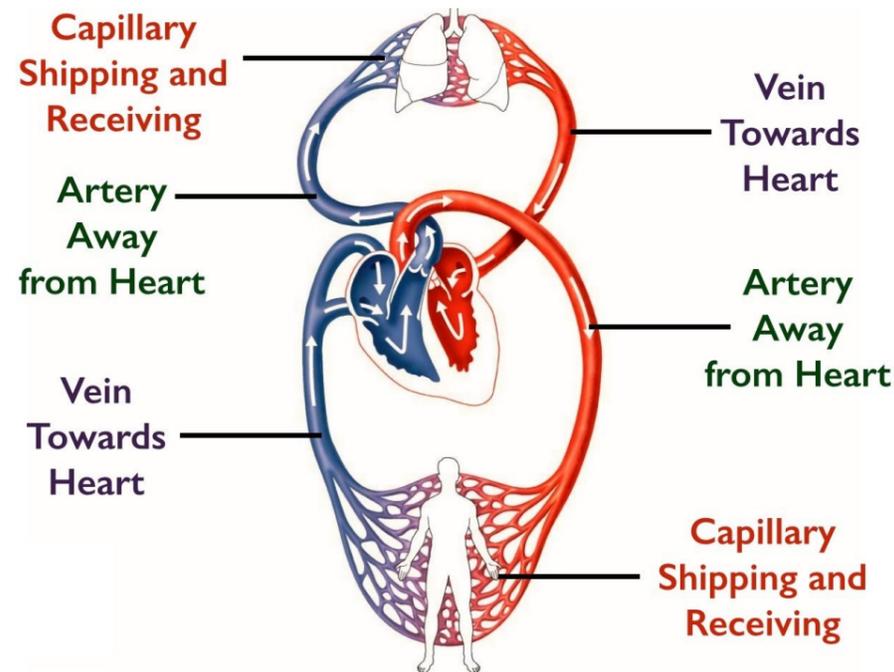
At home, have a go at making a visual representation of how blood travels around the body. You might colour some pieces of paper blue and some red and demonstrate how the blood becomes oxygenated as it travels from the heart to the lungs and to your muscles. You might create a scientific diagram which shows the journey of blood around our bodies. Email photos of these to your teachers if you can!

Have a think about some of these questions:

- ⇒ What is the job of the heart in this process?
- ⇒ How are blood vessels different in areas of the body?
- ⇒ Why is it important for our heart to continue beating?

Use some of the links below to help you understand. There are some example diagrams on the next page to help you if you can't access videos.

- <https://www.youtube.com/watch?v=pjOxpLEynIE>
- <https://www.youtube.com/watch?v=DB5HxSPGVp0>
- <https://www.youtube.com/watch?v=ZjT3qjxYTro>



P.E.

Study the warm-up techniques of different successful sportsmen and women and carefully notice the differences you see in them.

What is the importance of warming up and raising your heart rate before exercise?

Design a warm-up specifically for a sport of your choice.

For example: dance, football, rugby, trampolining, gymnastics, table tennis, netball, hockey, rounders, sprinting, long-distance running, golf, cricket.

<https://www.youtube.com/watch?v=oEPFbkDrYuM>

Science 2- *I can describe the effects of diet, exercise, drugs and lifestyle on how the body functions.*

Choose 3 elements of lifestyle that you could argue would be positive or negative for our bodies.

Poor sleep pattern	Bottling up emotions or worries	Excessive sugar in diet
Alcohol	Regular exercise	A fruit and vegetable enriched diet

<https://www.youtube.com/watch?v=wWGuLLAa00O>

https://www.youtube.com/watch?v=sWEuvQijt_4

<https://www.youtube.com/watch?v=kmSinPMVU2U>

<https://www.youtube.com/watch?v=yF7Ou43Vj6c>

D.T– Cookery

Design 3 potential meals for a sports person of your choice. Considering their active lifestyle, ensure that they have balance and foods that will give them slow releasing energy throughout their training programs.

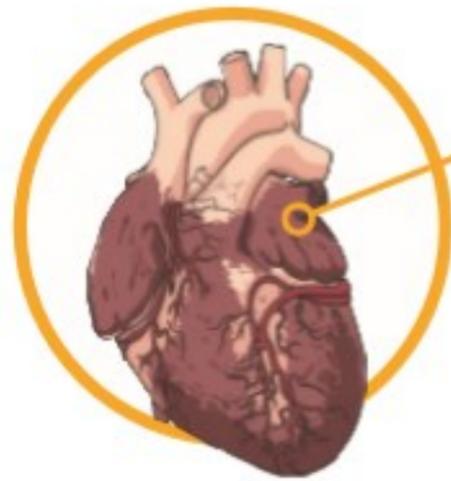
What do the different parts of our body need, through our diet, to be able to function at their best?

There are a variety of clips on the following link to support your research:

<https://www.bbc.co.uk/bitesize/topics/z4d82hv/resources/1>

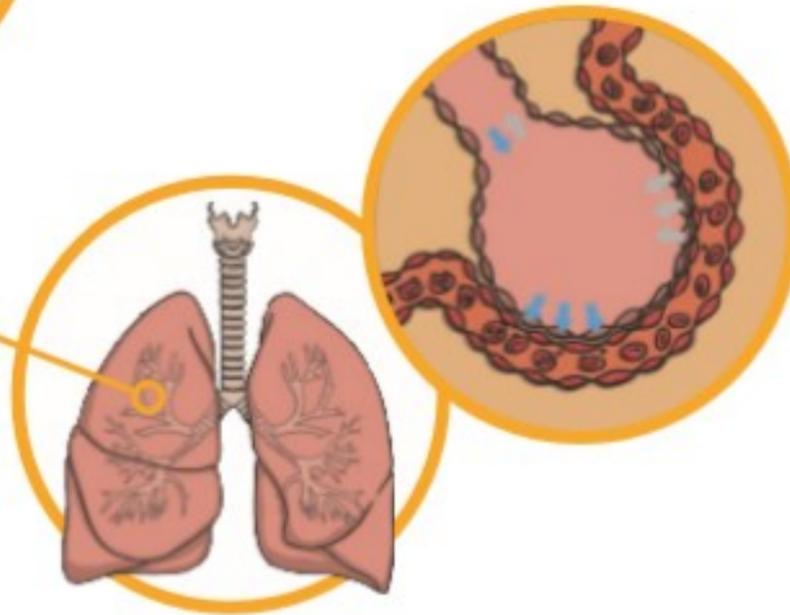
If it's possible, have a go at creating some of your meal plan!

Key Knowledge

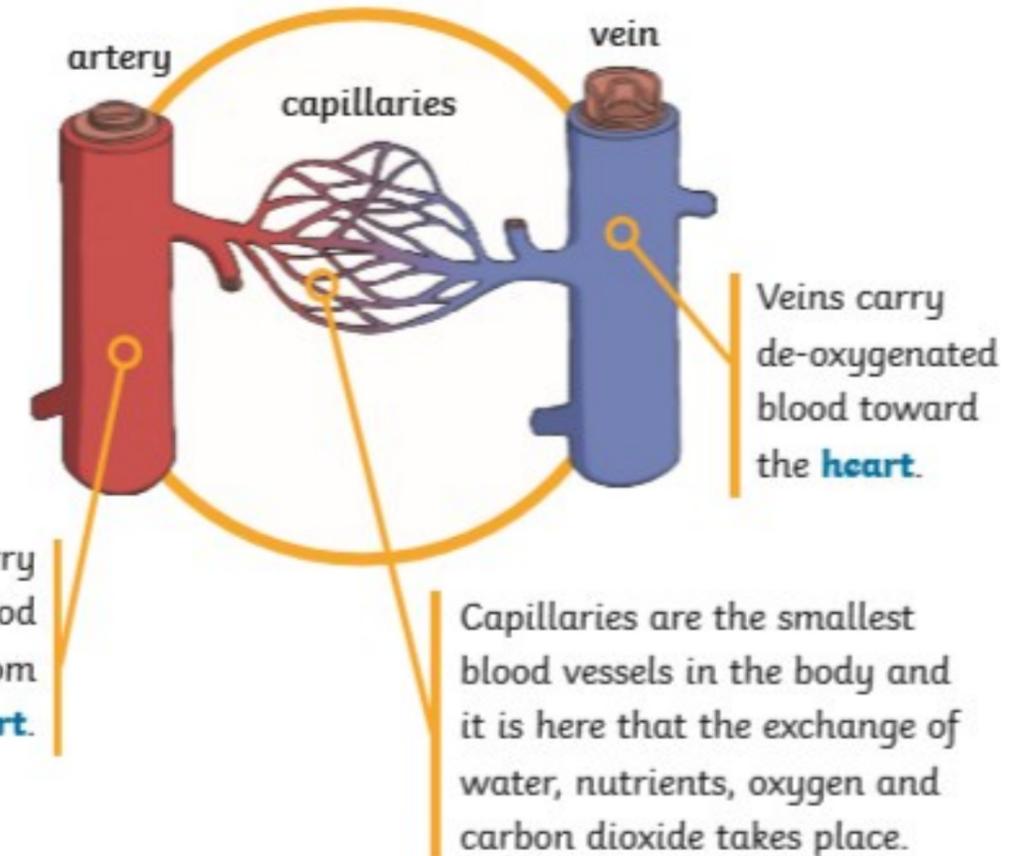


The **heart** pumps blood to the lungs to get oxygen.
It then pumps this oxygenated blood around the body.

Gas exchange takes place in the **alveoli** in the lungs.



Blood Vessels



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 .
pulmonary	Relating to the lungs.
alveoli	Tiny air sacs in the lungs where gas exchange takes place.
gas exchange	The process by which oxygen enters the bloodstream from the lungs and the lungs receive carbon dioxide from the blood to breathe out. This process happens in the alveoli and the capillaries around the alveoli .

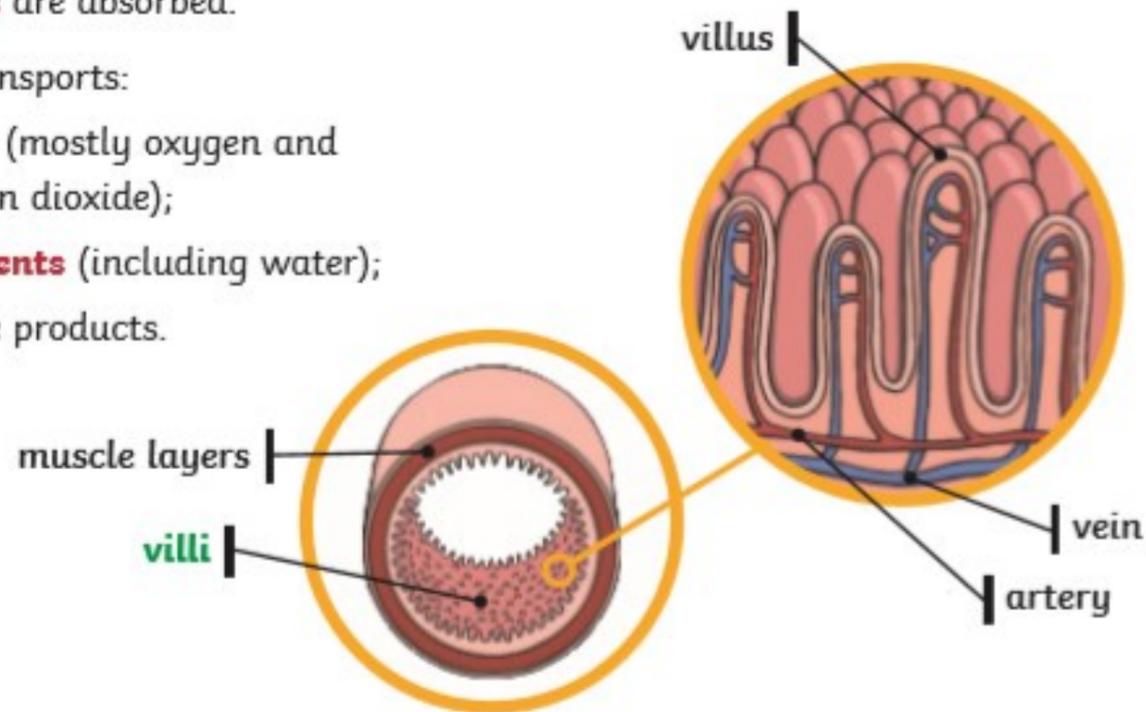
Key Knowledge

Inside the Small Intestine

The **nutrients** pass through the **villi** and are absorbed into the blood vessels. Water is absorbed in the small intestine in exactly the same way as other **nutrients** are absorbed.

Blood transports:

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



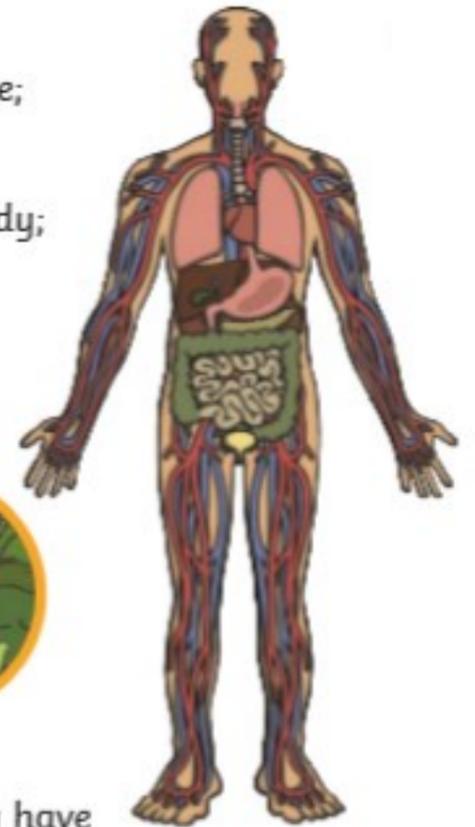
Regular exercise:

- 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.

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



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



Key Vocabulary

villi	Structures in the small intestine which help absorb nutrients.
nutrients	Substances that animals need to stay alive and healthy.
kidneys	Organs which filter blood and make urine from waste and excess water.
liver	An organ which processes waste from the blood and produces bile.
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.