# Year 6 Science

# Animals including Humans

**Things you should already know;**

- How the human body changes over time.
- The human digestive system and how nutrients are absorbed into the body.

**New Learning for Year 6.**

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

**Key Knowledge**

**The heart pumps blood to the lungs to collect the oxygen and then pumps the oxygenated blood around the body.**

**A mammals heart has 4 chambers.**

**Arteries carry oxygenated blood away from the heart.**

**Veins carry deoxygenated blood back to the heart.**

**Capillaries are the smallest blood cells in the body and it is here that the exchange of water, nutrients, oxygen and carbon dioxide takes place.**

**Blood transports gases, nutrients, hormones and waste products around the body.**

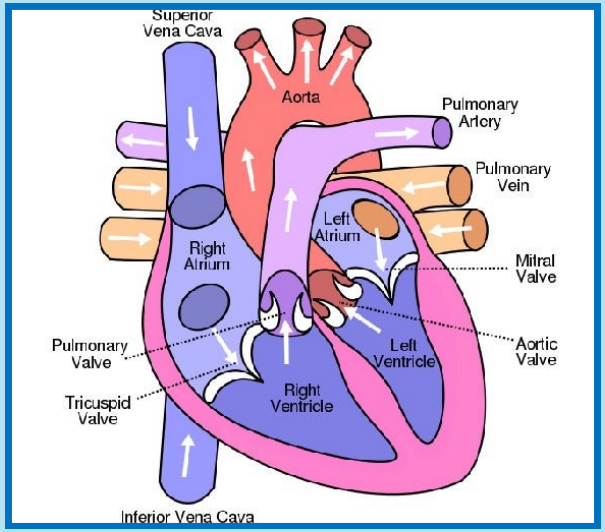
**Plasma is the liquid part of the blood that contains water and protein.**

**Red blood cells carry oxygen around the body.**

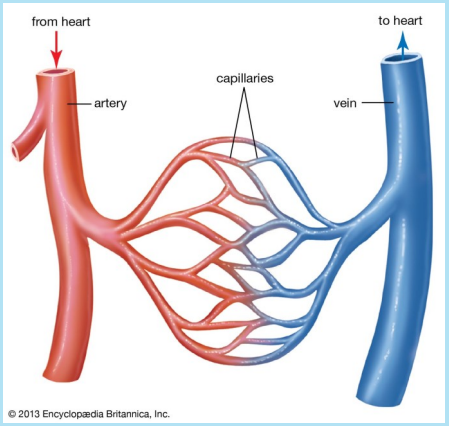
**White blood cells fight infection when you are sick.**

**Platelets help your blood to clot when you are bleeding.**

**That a healthy diet and exercise are important in keeping your heart and body healthy.**



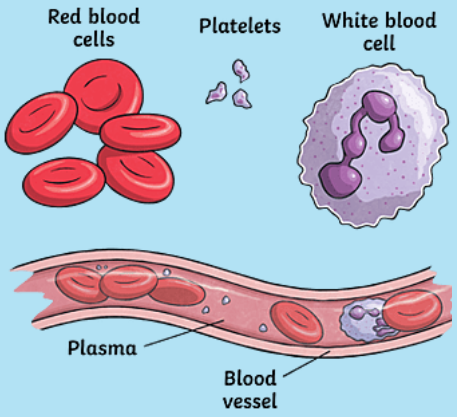

Notice how the blood that has come from the body is deoxygenated, and the blood that has come from the lungs is oxygenated again. The blood isn't actually red and blue: we just show it like that on a diagram




The arteries carry oxygenated blood around the body and the veins carry deoxygenated blood back to the heart.

**Amazing Facts**

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




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.

# Year 6 Science

# Animals including Humans

## 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 |
| **Oxygenated blood** | Oxygenated blood has more oxygen. It is pumped from the |
| **Deoxygenated blood** | Deoxygenated blood is blood where most of the oxygen has |
| **Drugs** | 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 |
| **Transported** | The blood transports (carries) oxygen, nutrients, hormones around the body. |

## Sticky Learning.

**Can you answer any of these questions in your**

Why is the heart so important? Remember to use evidence to support your answer.

What can you remember about the digestive system?

What are the scientific symbols for oxygen and carbon dioxide?

In your own words, can you explain how carbon dioxide is removed from the body?

Fancy a challenge? Can you complete some of these fun activities about the circulatory system?

How does the mass of a mammal (weight) affect the heart 's rate and can you explain why?

Can you complete some research on the number of heart beats different mammals have in a minute? Can you explain why they are different?

Jim uses a heart beat monitor to record his heart rate before, during and after a run. Can you draw a line graph of what his heart rate was before, during and after his run?

Can you list activities that will affect the heart rate of a healthy young person? Put them in a list of things that will increase the heart rate and activities that will not impact the heart rate?