



The heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the body. Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products. Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system. Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins.

blood vessels



A series of tubes in your body that move blood to and from the heart.

carbon dioxide



A gas that is naturally present in the air and is exhaled by humans.

circulatory system



The system responsible for circulating blood through the body.

heart



The organ that pumps blood through the body. The heart is made of very strong muscle.

oxygen



A gas that is naturally present in the air and is inhaled by humans.

pulse



The heart pumps blood by squeezing and relaxing in a regular rhythm. This can be felt as a pulse.

Knowledge you already have

In Year 2:

- I described the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

In Year 3:

- I identified that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.

- I identified that humans and some other animals have skeletons and muscles for support, protection and movement

In Year 4:

- I described the simple functions of the basic parts of the digestive system in humans.

- I identified the different types of teeth in humans and their simple functions.

Future Knowledge

In KS3, I will study:

- The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases.

- The effects of recreational drugs on behaviour, health and life processes.

- The structure and functions of the gas exchange system in humans, including adaptations to function.

- The mechanism of breathing to move air in and out of the lungs.

- The impact of exercise, asthma and smoking on the human gas exchange system.

New Knowledge

During this unit:

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

- I will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.

- I will describe the ways in which nutrients and water are transported within animals, including humans.

Scientific Enquiry

Comparative/Fair Testing:

- I will investigate the effect of different activities on my pulse rate.

Pattern Seeking:

- I will explore which groups of people may have higher or lower resting heart rates.

Observation over Time:

- I will explore how long it takes for my heart rate to return to my resting heart rate after different types of activity and exercise.

Researching using secondary sources and interviews:

- I will research and present information on the positive and negative effects of drugs such as tobacco and paracetamol and the benefits of a healthy diet and exercise.