

Inspiring and enabling our school community to live life to the full



YEAR 6

Subject: Science
Human circulation

Our Science curriculum aims to enthuse children and help them to be curious and develop a sense of excitement about the world. Through a range of teaching, learning and extra-curricular opportunities, children will develop scientific knowledge and conceptual understanding to recognise the uses and implications of Science, today and for the future. We encourage children to ask their own questions; predict how things will behave and analyse causes, using Science to explain what is happening.

Characteristics of an Effective Learner

Courage
Commitment
Collaboration
Creativity
Curiosity

Prior Learning:

- how the skeletal system moves our bodies and protects our organs whilst holding us upright (Year 3 Biology – Animals, including humans)
- that the digestive system breaks down the food we eat into smaller pieces that our body can use for energy and growth, and that these travel in the bloodstream to the rest of the body (Year 4 Biology – Animals, including humans).

Key Vocabulary taught in this unit:

Circulate, contract, flow, pump, system, transport, aorta, arteries, atrium, blood, blood vessels, capillaries, cell, deoxygenated blood, hormone, oxygenated blood, plasma, platelets, pulmonary, artery, pulse, red blood cells, valve, veins, ventricle, white blood cells,

Key Questions:

Q: What is blood made of?

Blood carries oxygen, water, and the nutrients from food that are used for energy and growth, around the body. Blood is made up of plasma (a liquid in which blood cells and nutrients travel), red blood cells (which carry oxygen), white blood cells (which fight infection) and platelets (which help blood to clot around a cut).

Q: What is the circulatory system and what does it do?

The human circulatory system pumps blood from the heart to the lungs, back to the heart and onto the rest of the body in a figure-of-eight system. Blood passes through each side of the heart separately in one circuit.

Q: What is a heart and what does it do?

The heart is a muscle. It has two separate sides. The left side receives blood full of oxygen from the lungs and pumps it around the rest of the body, and the right side receives blood from the body that has had the oxygen used up and pumps it back to the lungs to receive a fresh supply of oxygen.

Q: What are blood vessels and valves and what do they do?

Arteries are blood vessels that carry oxygenated blood away from the heart. Veins carry deoxygenated blood from the rest of the body back to the heart. They have valves to stop the blood flowing backwards.

Q: What did William Harvey find out about the circulatory system?

William Harvey was a scientist who discovered how the human circulatory system worked. Scientific ideas change as more evidence is found. Scientists do not always agree with each other.

Intent:

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- describe the ways in which nutrients and water are transported within animals, including humans.

Working Scientifically

- Recording data and results of increasing complexity using scientific diagrams and labels, [classification keys, tables, scatter graphs, bar and line graphs].
- 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.

Impact / Outcome:

What will the final product / result be?

Children will learn about the methods scientists use to build scientific knowledge about the human body.

They will learn that scientists observe closely to find out how our body works. Scientists use microscopes to see the structures in blood, and they dissect hearts in order to learn how to mend living human hearts. Scientists use models and representations of structures in order to better understand how they work.

They will develop an understanding of the following type of enquiry: research using secondary sources

P4C Inquiry (where appropriate)