The Human Body (Biology)

Year 6

End Points:

- The heart pumps blood around the body.
- The left atrium and left ventricle carry oxygenated blood which is pumped around the body.
- The right atrium and right ventricle carry deoxygenated blood which is pumped out to the lungs.
- All cells in our body need oxygen.
- Arteries carry oxygenated blood from the heart to cells.
- Veins carry deoxygenated blood from the cells back to the heart.
- Heart rate increases when you exercise as cells use more oxygen.
- Drugs and poor health can affect how well the heart works.

During this unit children will build on their knowledge of the circulatory system from Year 2. They will learn that William Harvey was a doctor who suggested the heart was at the centre of a circulatory system that moved blood around the body. They will learn that now; scientists and doctors know that the heart and blood vessels are parts of our circulatory system and that our circulatory and respiratory systems keep us alive. We know that our heart is divided into four chambers and blood enters and exits the heart. As the heart beats, it pumps the blood out to the lungs for a new supply of oxygen. Blood vessels, called arteries, carry oxygen-rich blood away from the heart. Blood vessels, called veins, carry blood back to your heart to be pumped to the lungs for more oxygen. Children will learn the importance of each part of the circulatory system including arteries, veins and capillaries.

Building on the understanding that some parts of our body are too small to see, children will learn that blood is made up of different components. They will learn that the main liquid in our blood is called plasma. Red blood cells contain a substance called haemoglobin which carries the oxygen and carbon dioxide. White blood cells attack and destroy bacteria. Platelets are responsible for clotting the blood. Children will learn about the important role the lungs play in oxygenating blood, a process that is vital for life.

When working scientifically, children will investigate to find out how exercise effects pulse rate. They will think about variables and control variables whilst planning the best way to find an answer to their question. They will then complete their investigation and analyse the results.

Lesson Sequencing:

Lesson one will look at the circulatory and respiratory systems, exploring how they are linked together. Children will learn about the heart's role in circulation and that blood can be oxygenated or deoxygenated. Lesson two will further develop the understanding around blood by looking at blood vessels and how they transport blood around the body. In lesson three, children will use the knowledge learnt in the previous lessons to understand how heart rate can speed up or slow, down depending on what the body is doing. Lesson four and five will combine all this knowledge by exploring heart rate through an investigation. In the assessment lesson, children will write about why the circulatory system is important and how they can stay healthy.

Misconceptions:

- That blood in veins can be blue (as shown in diagrams demonstrating deoxygenated blood)
- The heart lies at the left side of the chest.
- Exercise is the only time when the heart beats quicker.
- All drugs are bad.

Working Scientifically criteria met in this unit:

- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- Using test results to make predictions to set up further comparative and fair tests
- Identifying scientific evidence that has been used to support or refute ideas or arguments
- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations