

**End Points:**

- Animals need water, food and air to survive.
- Our skeleton is made up of bones.
- Our muscles help us to move.
- Digestion means breaking down the food we eat.
- Our bodies take things (nutrients) we need out of the food we eat.
- The heart is a muscle inside the body.
- The heart pumps blood around the body.
- Blood circulates (goes around and around) the body.
- Germs can make us unwell.
- We take care of our bodies through exercising, eating a healthy diet, keeping clean and resting.

Building on their understanding of the human body and senses from Year One, this year children will look at some systems that operate within our bodies, including the skeletal system, the muscular system, the digestive system and the circulatory system. Children will begin to understand the important scientific concept of interconnection and will recognise that a system is a group of parts that work together, in a connected way, to create a function. Children will learn that our skeletons give our body shape, protect vital organs and help us to move. They will look at the shape of different bones in our body and begin to recognise their function. Children will also recognise that muscles have many important roles within our body, helping us to move and holding our skeletons together.

In this unit, children will have their first look at our digestive system, something they will return to in greater detail in Year Three and Year Four. They will learn that food gives us energy, so we can move and grow. This connects to their learning in Year 1 about how living things need food to grow. They will begin to understand the digestive system sorts out the food we eat, taking nutrients and other essential things and leaving waste. Elaborating on their understanding of body systems, children will learn about the circulatory system which is made up of a complex network of blood vessels, arteries and veins. The role of the heart will be explored, and children will understand that blood is pumped around our bodies.

Finally, children will learn that there are very tiny living things called microorganisms that we can only see with a microscope. They will learn that some microorganisms are helpful, but that some, like bacteria, can be harmful to our bodies. Children will reflect upon the need for good personal hygiene, such as washing hands, to limit the spread of harmful bacteria. They will also consider the importance of maintaining healthy lifestyles in order to keep their bodies healthy. This theme will be revisited in forthcoming years.

This unit develops a foundation of challenging substantive knowledge, including the skeletal, muscular, digestive and circulatory systems, that children will build upon as they progress through the curriculum. In this unit, children will be taught and will use specific vocabulary to describe our body systems and they will have further opportunities to embed this vocabulary in their understanding in forthcoming units.

### **Lesson Sequencing:**

In lesson one, children will learn that animals, including humans, need water, food and air to survive, and that by surviving, they are able to reproduce. In lesson two, children will learn that the skeleton and muscles help us to move. They will look at the main bones in the body and their functions, and identify the movements that muscles enable us to do. Lesson three will teach children about digestion and that our bodies take nutrients from the food we eat. They will label parts of the digestive system and learn the role of each part. In lesson four, children will learn about the circulatory system, identifying the heart as a muscle that pumps blood around the body. In lesson five, children will link the previous lessons together by learning how to keep the body healthy by keeping clean, eating healthy foods and exercising. They will look at how scientists have identified ways to stay healthy through the work of Edward Jenner and Louis Pasteur. For the assessment, children will identify healthy and unhealthy foods or complete a survey around healthy habits with their class.

### **Misconceptions:**

- All animals are furry and have four legs.
- The heart is at the left side of the body.
- The stomach is located behind the navel.
- We only eat food for energy.
- All germs are harmful.
- Air tubes connect to the heart.

### **Working Scientifically criteria met in this unit:**

- Asking simple questions asking simple questions and recognising that they can be answered in different ways
- Identifying and classifying
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to answer questions