The Human Body (Biology)

Year 4

End Points:

- All living things are made up of cells.
- Our body requires nutrients to keep healthy.
- Nutrients are found in the food we eat.
- There are four types of teeth: incisors, canines, pre-molars and molars.
- Each tooth type has a function.
- The function of body parts in the digestive system.
- A balanced diet keeps us healthy.
- Essential vitamins and minerals are needed in our body.

Using prior knowledge as a springboard to understand, children will return to the knowledge that some aspects of life on earth are too small to see. Building on their disciplinary knowledge, children will learn that some scientists study things under a microscope to see things in more detail than our eyes can see. This unit introduces cells as the building blocks that all living things are made of. Children will learn that cells inside our bodies make up tissue (e.g. muscle), which make up organs, which function in systems within our bodies. This unit explains digestion in much more detail than previously learned, but holds the understanding of cells alongside this, so that children can begin to understand there is much going on at microscopic level. The concept of nutrients within foods will be better understood when children know that there are very tiny things we cannot see around us.

In Year 3, children were introduced to digestion. Building on this knowledge, children will now learn that food is broken down into small parts so that the nutrients can be absorbed into our cells. Returning to prior knowledge, children will look again at human teeth. They will understand that most humans are omnivores, which means eating a mixed diet of plants and meat, and our teeth are shaped to accommodate such a diet. Crucial processes, such as saliva production, chewing, production of digestive enzymes and gastric acid, will be studied. They will learn that the small and large intestines absorb nutrients from food and that waste is passed out as faeces. Children will then study a healthy diet and the importance of vitamins and minerals. In this unit, knowledge of the importance of dental hygiene and avoiding sugary or acidic foods for general dental health will also be taught.

In this unit, children will begin to understand that there is a world of science around us that we cannot see. They will begin to understand that scientists look beyond the immediately visible to learn more about the world we live in.

Lesson Sequencing:

Lesson one will explain what a cell is and why nutrition is important. In lesson two, pupils will learn about the different teeth humans have and what their functions are. Lesson three will look at how food is digested, learning about the different parts of the body involved in digestion and the role they each play. Lesson four builds on the ideas of digestion and nutrition from earlier lessons by looking at the concept of a balanced diet. In lesson five, children will go one step further and learn about the effects of vitamins and minerals on the body. In the assessment lesson, children will either design a healthy meal and explain its journey through the digestive system or write about the body parts involved in digestion and explain why they are each essential.

Misconceptions:

- All teeth have the same function.
- The stomach is located behind the navel.
- The digestive system has different 'tubes' for urine and faeces (linking eating solids to making faeces and drinking liquids to making urine).
- Sugar is only in bad food.
- All fat is bad for you.
- Food only contains fat if the fat can be seen (e.g. on meats).
- All dairy products are good for you.

Working Scientifically criteria met in this unit:

- identifying differences, similarities or changes related to simple scientific ideas and processes
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables