Learning Journey – 7A Cells

What have I done previously in my learning journey?	
Previously….	**You have learnt previously about plants. This has involved:** • working scientifically by using magnifying glasses to observe living things closely. • identifying and describing the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • identifying that humans and some other animals have skeletons and muscles for support, protection and movement. • describing the simple functions of the basic parts of the digestive system in humans. • identifying and naming the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
In this topic…	You will learn about cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope. You will also learn about the functions of the different parts of plant and animal cells.

We will develop our learning by studying the following each lesson:	RAG	Skills in Science checklist
7A.01 Animal and Plant Cells • State that cells the basic units of organisms • List the main parts of cells Describe the functions of the main parts of cells • Compare and contrast animal and plant cells • Identify parts of a cell from a diagram		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
7A.02 The Microscope • Label the parts of a microscope • Safely set up a light microscope • Accurately record your observations		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
7A.03 Using the Microscope • Safely set up a light microscope • Observe and accurately draw biological specimens under a light microscope • Calculate magnification when given labelled diagrams of cells		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
7A.04 Multicellular Organisms • List some tissues and organs • Describe a tissue, an organ and an organ system • Describe how multicellular organisms are organised (cells > tissues > organs > organ systems > organisms)		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication
7A.05 Specialised Cells • Describe the structural adaptations of some animal and plant cells • Identify the structural adaptations of some unicellular organisms		☐ Scientific Methods ☐ Practical ☐ Number Skills ☐ Application ☐ Communication

Key Vocabulary

Organisms	**Cell**	**Nucleus**	**Mitochondria**	**Cell membrane**	**Ribosomes**	**Cytoplasm**	**Cell wall**	**Vacuole**
Chloroplasts	**Microscope**	**Specimen**	**Eyepiece**	**Objectove Lens**	**Focusing wheel**	**Stage**	**Slide**	**Slide clips**
Multicellular organisms	**Tissue**	**Organs**	**Organ systems**	**Red blood cell**	**Root hair cell**	**Muscle cell**	**Nerve cell**	**Palisade cell**
Sperm cell	**Function**	**Adaptation**						

Future Learning	At GCSE you will build on your knowledge of cells are the basic unit of all forms of life. You will explore how structural differences between types of cells enables them to perform specific functions within the organism. You will also learn that these differences are controlled by genes in the nucleus. You will build on your knowledge of cell specialisation by learning that for an organism to grow, cells must divide by a process called mitosis producing two new identical cells. If cells are isolated at an early stage of growth before they have become too specialised, they can

	retain their ability to grow into a range of different types of cells.
In careers	This ability of cells to grow into a variety of different cells has led to the development of stem cell technology. This is a new branch of medicine that allows doctors to repair damaged organs by growing new tissue from stem cells.