



# LEARNING JOURNEY

## Biology

### 3.2 Cells

#### Cells

##### Eukaryotic cells

You will learn the names and structures of the organelles are present in eukaryotic cells and their function

##### Prokaryotic cells and viruses

You will learn the names and structures of organelles present in prokaryotic cells and their functions.

##### Microscopes

You will learn the properties of different microscopes and when to use each technique. You use an equation to calculate magnification

##### Mitosis

You will learn the 4 stages of mitosis in detail along with relating cancer to uncontrolled cell division

##### Microscopes and mitosis

You will learn how to prepare a microscope slide and analyse the growth rate of a cell by calculating the mitotic index

##### Cell membranes

You will learn about the structures and functions of cell membranes and why they are important for living organisms

##### Diffusion

You will learn about the different processes involved in passively moving substances across the membrane

##### Osmosis

You will learn how water across a membrane by creating serial dilutions and measuring the mass of an object

##### Active transport

You will learn how substances are moved across a membrane using ATP

##### Immune system

You will learn about the primary and secondary immune response along with the difference between the immune cells

##### Vaccines

You will learn how vaccines are used to protect against disease and the difference between active and passive immunity

##### Antibodies

You will learn how monoclonal antibodies are created and how they are used in medicine

##### HIV and Viruses

You will learn about the structure of HIV and how it replicates and how it causes illness

#### VOCABULARY

**Golgi apparatus**  
**Endoplasmic reticulum**  
**SEM & TEM**  
**Prophase**

**Metaphase**  
**Anaphase**  
**Telophase**  
**Centromere**  
**Phospholipid**

**Facilitated diffusion**  
**Water potential**  
**Cotransporter**

**B & T Cells**  
**Monoclonal**  
**Capsid**  
**Reverse transcriptase**

This module will build on key concepts studied in KS3 and KS4 to comprehensively explain how cells are structures and how they interact with each other to produce a complete organisms.

This module will also improve your understanding of analysis using biological techniques.