Foxford Learning Plan

YEAR 12

Unit 1 Biology

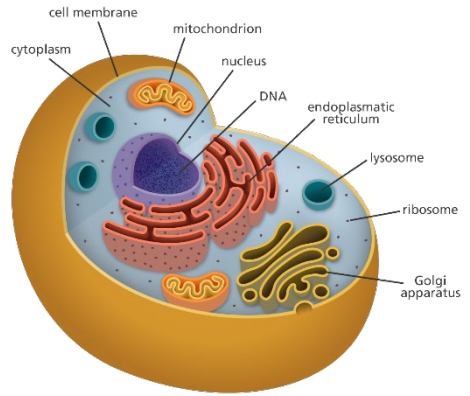
Key Vocabulary

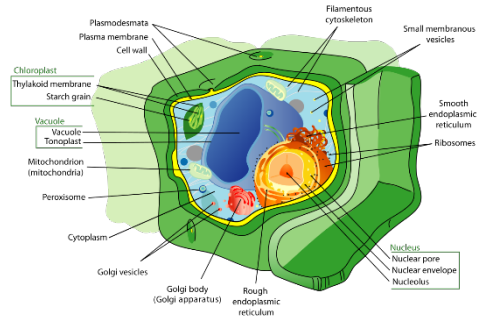
Magnification	The number of times larger an image is compared with the real size of the object
Resolution	The ability to distinguish between objects that are close together
Micrometre (um)	One thousandth of a mm
Organelle	Specialised structure that performs important cellular functions within a eukaryotic cell
Gram stain	A staining method that distinguishes between two different kinds of bacterial cell walls
Cell theory	All living things are composed of cells and that cells are basic unit of life, all cells come from pre-existing cells
Eukaryotes	Have DNA in nucleus membrane bound (organelles)
Prokaryotes	Have free DNA (not in nucleus)
Squamous epithelial tissue	lining of tissue and is one cell thick -made from flattened specialised squamous epithelial cells
Ciliated columnar epithelial tissue	Column shaped ciliated cells with cilia -line the trachea in respiratory system protects from infection -sweep pathogens away
Endothelial tissue	Layer of flattened cells, one layer thick -Found in heart, blood vessels, provides diffusion
Muscles tissue	Elongated cells and form fibres. Muscle cells contain protein filaments called actin and myosin that enable muscles to contract and cause movement
Nervous tissue	Transmits nerve impulses throughout the body
Action potential	A neural impulse; a brief electrical charge that travels down an axon

Over the course of the topic, I will be able to:

Key Skills

- Demonstrate knowledge of scientific facts, terms, definitions and scientific formulae
  Command words: give, label, name, state
- Demonstrate understanding of scientific concepts, procedures, processes and techniques and their application
- Analyse, interpret and evaluate scientific information to make judgements and reach conclusions
- Make connections, use and integrate different scientific concepts, procedures, processes or techniques





I will understand:

- That cell theory is a unifying concept stating that cells are a fundamental unit of structure, function and organisation in all living organisms
- The ultrastructure and function of organelles in prokaryotic and eukaryotic cells
- How to recognise cell organelles from electron micrographs and the use of light microscopes
- How to distinguish between gram-positive and gram-negative bacterial cell walls and why each type reacts differently to some antibiotics
- How to calculate magnification and size of cells and organelles from drawings or images
- Understand cell specialisation in terms of structure and function, to include palisade cells and root hair cells in plants, sperm and egg cells in reproduction, white and red blood cells
- Understand the structure and function of squamous epithelial tissue, columnar epithelial tissue and endothelial tissue
- The structure and function of muscular tissue and nervous tissue
- How imbalances in certain, naturally occurring brain chemicals can contribute to ill health, including dopamine in Parkinson's disease and serotonin in depression