

Key Elements: Cell Biology (Cell Structure)

Estimated Time: 5–6 hours

By the end of this course, students will have an understanding of the structure of cells.

Vocabulary

cell membrane, cell wall, cellular respiration, chloroplast, chromatin, chromosome, cristae, cytoplasm, cytoskeleton, Golgi bodies, lysosome, matrix, mitochondria, nuclear envelope, nuclear pore, nucleolus, nucleus, organelle, polysome, ribosome, rough endoplasmic reticulum, smooth endoplasmic reticulum, vacuole, vesicle

Knowledge

- functional inter-relationships of cell structures
- how cell compartmentalization assists in the production and distribution of molecules

Skills and Attitudes

- demonstrate correct use of a compound microscope
- communicate results (e.g., using graphs, tables, diagrams, lab reports)
- create models (e.g., of a cell, or an organelle)
- demonstrate ethical, responsible, co-operative behaviour

CELL BIOLOGY (CELL STRUCTURE)

Prescribed Learning Outcomes	Suggested Achievement Indicators
<i>It is expected that students will:</i>	<p><i>The following set of indicators may be used to assess student achievement for each corresponding prescribed learning outcome.</i></p> <p><i>Students who have fully met the prescribed learning outcome are able to:</i></p>
B1 analyse the functional inter-relationships of cell structures	<ul style="list-style-type: none"> <input type="checkbox"/> describe the following cell structures and their functions: <ul style="list-style-type: none"> – cell membrane – cell wall – chloroplast – cytoskeleton – cytoplasm – Golgi bodies – lysosomes – mitochondria – including cristae and matrix – nucleus – including nuclear pore, nucleolus, chromatin, nuclear envelope, and chromosomes – ribosomes (polysomes) – smooth and rough endoplasmic reticulum – vacuoles – vesicles <input type="checkbox"/> state the balanced chemical equation for cellular respiration <input type="checkbox"/> describe how the following organelles function to compartmentalize the cell and move materials through it: <ul style="list-style-type: none"> – rough and smooth endoplasmic reticulum – vesicles – Golgi bodies – cell membrane <input type="checkbox"/> identify cell structures depicted in diagrams and electron micrographs