

Term	Week	Focus	Summary	Learning Outcomes	Learning skills
<b>Term 1.1</b>	<b>1</b>	Introduction to Cell Structure	Understanding that all living organisms are made of cells and sharing common features.	Learn the basic concepts of cell structure and the common features shared by all cells.	Critical thinking, Analytical skills
		Organisation of Multicellular Organisms	Understanding how cells in multicellular organisms are organised into tissues, tissues into organs, and organs into organ systems.	Explore the hierarchical organisation of multicellular organisms. Understand the different levels of organisation and the relationship between cells, tissues, organs, and organ systems.	Critical analysis, Problem-solving
	<b>2</b>	Ultrastructure of Eukaryotic Cells	Knowing the ultrastructure of eukaryotic cells, including the nucleus, nucleolus, ribosomes, rough and smooth endoplasmic reticulum, mitochondria, centrioles, lysosomes, and Golgi apparatus.	Learn about the structures and functions of various organelles in eukaryotic cells. Understand the role of each organelle in cellular processes.	Data analysis, Information synthesis
		Protein Transport in Cells	Understanding the role of the rough endoplasmic reticulum (rER) and the Golgi apparatus in protein transport within cells, including their role in the formation of extracellular enzymes.	Explore the processes of protein transport in cells, focusing on the functions of the rough endoplasmic reticulum and the Golgi apparatus. Understand the role of these organelles in the synthesis, modification, and secretion of proteins.	Critical thinking, Scientific communication
	<b>3</b>	Ultrastructure of Prokaryotic Cells	Knowing the ultrastructure of prokaryotic cells, including the cell wall, capsule, plasmid, flagellum, pili, ribosomes, and circular DNA.	Learn about the structures and functions of various components in prokaryotic cells. Understand the unique features of prokaryotes compared to eukaryotic cells.	Analytical skills, Ethical reasoning

	<b>4</b>	Electron Microscopy and Staining Specimens	Understanding how magnification and resolution can be achieved using light and electron microscopy. Recognising organelles from electron microscope (EM) images. Understanding the importance of staining specimens in microscopy.	Learn about the principles and applications of light and electron microscopy. Understand the significance of staining techniques in enhancing specimen visibility. Develop skills in recognising organelles from electron microscope images.	Observation skills, Data interpretation
	<b>5</b>	Practical: Observing Animal Cells with a Light Microscope	Using a light microscope to make observations and labelled drawings of suitable animal cells. Using a graticule with a microscope to make measurements and understand the concept of scale.	Develop practical skills in using a light microscope to observe and draw animal cells. Understand the use of a graticule for making measurements and interpreting scale.	Scientific inquiry, Experimental design
	<b>6</b>	Retrieval practise	Application of knowledge gained throughout topic.	Evaluate knowledge of all content from the cells topic and apply it to different retrieval tasks.	Critical thinking, Analysis, Recall, Mathematical skills
	<b>7</b>	Gene Loci and Linkage	Knowing that a locus is the location of genes on a chromosome. Understanding the linkage of genes on a chromosome.	Learn about gene loci and the concept of gene linkage on chromosomes. Understand the principles of gene mapping and the importance of studying gene linkage in genetic analysis.	Data analysis, Problem-solving
		Role of Meiosis in Genetic Variation	Understanding the role of meiosis in ensuring genetic variation through the production of non-identical gametes.	Explore the processes of meiosis and its significance in generating genetic diversity through independent assortment of chromosomes and crossing over of alleles.	Critical analysis, Data interpretation

<b>Term 1.2</b>	<b>1</b>	Specialisation of Mammalian Gametes	Understanding how mammalian gametes are specialised for their functions, including the acrosome in sperm and the zona pellucida in the egg cell.	Learn about the structural and functional adaptations of mammalian gametes. Understand the significance of acrosomes and the zona pellucida in fertilisation.	Information literacy, Critical thinking
	<b>2</b>	Retrieval practise	Application of knowledge gained throughout topic.	Evaluate knowledge of all content from the cells topic and apply it to different retrieval tasks.	Critical thinking, Analysis, Recall, Mathematical skills
	<b>3</b>	Fertilisation Processes in Mammals	Knowing the process of fertilisation in mammals, including the acrosome reaction, the cortical reaction, and the fusion of nuclei.	Understand the series of events involved in mammalian fertilisation. Learn about the roles of the acrosome reaction, cortical reaction, and nuclear fusion in the process.	Research skills, Scientific communication
	<b>4</b>	Fertilisation Processes in Flowering Plants	Knowing the process of fertilisation in flowering plants, starting with the growth of a pollen tube and ending with the fusion of nuclei.	Learn about the mechanisms of fertilisation in flowering plants, focusing on pollen tube growth and the fusion of nuclei. Understand the reproductive structures and processes specific to flowering plants.	Analytical skills, Data interpretation
	<b>5</b>	Recommended Additional Practical: Factors Affecting Pollen Tube Growth	Investigating factors affecting the growth of pollen tubes.	Engage in a practical investigation to explore the factors that influence pollen tube growth. Develop skills in experimental design, data collection, and analysis.	Experimental design, Data analysis
	<b>6</b>	Role of Mitosis and the Cell Cycle	Understanding the role of mitosis and the cell cycle in producing genetically identical daughter cells for growth and asexual reproduction.	Learn about the stages of mitosis and the cell cycle. Understand the significance of mitosis in growth and asexual reproduction, including the production of genetically identical cells.	Problem-solving, Critical analysis

	<b>7</b>	Practical: Stages of Mitosis in Root Tip Squash	Preparing and staining a root tip squash to observe the stages of mitosis.	Develop practical skills in preparing and staining root tip squashes for observing mitosis. Understand the stages of mitosis and their characteristics.	Scientific inquiry, Observation skills
	<b>8</b>	Retrieval practise	Application of knowledge gained throughout topic.	Evaluate knowledge of all content from the cells topic and apply it to different retrieval tasks.	Critical thinking, Analysis, Recall, Mathematical skills