Learning Objectives

2 Organisation of the organisms		
2.1 Cell structure and organisation	**Core** • Describe and compare the structure of a plant cell with an animal cell, as seen under a light microscope, limited to cell wall, nucleus, cytoplasm, chloroplasts, vacuoles and location of the cell membrane • State the functions of the structures seen under the light microscope in the plant cell and in the animal cell	**Supplement** • State that the cytoplasm of all cells contains structures, limited to ribosomes on rough endoplasmic reticulum and vesicles • State that almost all cells, except prokaryotes, have mitochondria and rough endoplasmic reticulum • Identify mitochondria and rough endoplasmic reticulum in diagrams and images of cells • State that aerobic respiration occurs in mitochondria • State that cells with high rates of metabolism require large numbers of mitochondria to provide sufficient energy
2.2 Levels of organisation	**Core** • Relate the structure of the following to their functions: – ciliated cells – movement of mucus in the trachea and bronchi – root hair cells – absorption – xylem vessels – conduction and support – palisade mesophyll cells – photosynthesis – nerve cells – conduction of impulses – red blood cells – transport of oxygen – sperm and egg cells – reproduction • Define *tissue* as a group of cells with similar structures, working together to perform a shared function • Define *organ* as a structure made up of a group of tissues, working together to perform specific	**Supplement** • Identify the different levels of organisation in drawings, diagrams and images of unfamiliar material

	functions • Define *organ system* as a group of organs with related functions, working together to perform body functions • State examples of tissues, organs and organ systems from sections 6 to 16 • Identify the different levels of organization in drawings, diagrams and images of familiar material	
2.3 Size of specimens	**Core** • Calculate magnification and size of biological specimens using millimetres as units	**Supplement** • Calculate magnification and size of biological specimens using millimetres and micrometres as units