

This is the **Higher Separate** version — includes all Higher Tier content (marked ★) and all Separate Science content.

OCR Gateway requires knowledge of animal, plant and bacterial cell structures and their functions.

Required Practical: Preparing and observing cells using a light microscope.

- Animal cells: nucleus, cell membrane, cytoplasm, mitochondria, ribosomes
- Plant cells additionally: cell wall (cellulose), chloroplasts, permanent vacuole
- Bacterial cells: cell wall, cell membrane, circular DNA (no nucleus), ribosomes, sometimes plasmids and flagellum
- Cells differentiate to become specialised for specific functions
- ★ **HT** Electron microscopes reveal organelle detail not visible with light microscopes

Key Terms

Eukaryotic	Cell with membrane-bound nucleus
Prokaryotic	Cell without nucleus (e.g. bacteria)
Organelle	Specialised structure within a cell
Differentiation	Process of cells becoming specialised

■ **Exam Tip:** Know the THREE extra structures in plant cells: cell wall, chloroplasts, permanent vacuole. Bacteria are prokaryotic — no nucleus.