

Units 1 & 2 Biology

Unit 1: How do organisms regulate their functions?

This unit covers the cell's importance in life, from single-celled organisms to multicellular ones. It explores cell processes like growth, replacement, and death, as well as the role of stem cells. Students study how cells specialize in plants and animals, and how the body maintains balance through homeostasis. The unit ends with students conducting a scientific investigation related to cell or system function.

Area of Study 1: How do cells function?

- Explain and compare cellular structure and function
- Analyse the cell cycle
- Understand cell growth, death, and differentiation

Area of Study 2: How do plant and animal systems function?

- Explain and compare cell specialisation and organisation in plants and animals
- Analyse how specific systems in plants and animals are regulated.

Area of Study 3: How do scientific investigations develop an understanding of how organisms regulate their functions?

- Adapt or design a scientific investigation related to cell or system function/regulation
- Investigate to draw conclusions based on evidence from primary data

Unit 2: How does inheritance impact diversity?

This unit explores reproduction and genetics, focusing on chromosome behaviour in meiosis and how genes interact with the environment to influence traits. It covers inheritance patterns, genetic crosses, and reproductive strategies like cloning. Students also study adaptations for survival and species interdependence, including the roles of keystone species and top predators. The unit includes Aboriginal and Torres Strait Islander perspectives and culminates in a research investigation into an ethical issue related to genetics or reproduction.

Area of Study 1: How is inheritance explained?

- Explain and compare chromosomes, genomes, genotypes, and phenotypes
- Analyse patterns of inheritance
- Predict inheritance patterns

Area of Study 2: How do inherited adaptations impact diversity?

- Analyse the advantages and disadvantages of reproductive strategies
- Evaluate how adaptations and interdependencies enhance species survival in an ecosystem

Area of Study 3: How do humans use science to explore and communicate contemporary bioethical issues?

- Identify and analyse a bioethical issue in genetics, reproductive science, or adaptations
- Evaluate ethical considerations and implications