

Syllabus checklist

MODULE 1

Cells as the Basis of Life

BIO11–8

What distinguishes one cell from another?

- ☐ investigate different cellular structures, including but not limited to:...
- ☐ describe a range of technologies that are used to determine a cell's structure and function
- ☐ investigate a variety of prokaryotic and eukaryotic cell structures, including but not limited to:...

How do cells coordinate activities within their internal environment and the external environment?

- ☐ investigate the way in which materials can move into and out of cells, including but not limited to:...
- ☐ investigate cell requirements, including but not limited to:...
- ☐ investigate the biochemical processes of photosynthesis, cell respiration and the removal of cellular products and wastes in eukaryotic cells (ACSBLO49, ACSBLO50, ACSBLO52, ACSBLO53)
- ☐ conduct a practical investigation to model the action of enzymes in cells (ACSBLO50)
- ☐ investigate the effects of the environment on enzyme activity through the collection of primary or secondary data (ACSBLO50, ACSBLO51)

MODULE 2

Organisation of Living Things

BIO11–9

How are cells arranged in a multicellular organism?

- ☐ compare the differences between unicellular, colonial and multicellular organisms by:...
- ☐ investigate the structure and function of tissues, organs and systems and relate those functions to cell differentiation and specialisation (ACSBLO55)
- ☐ justify the hierarchical structural organisation of organelles, cells, tissues, organs, systems and organisms (ACSBLO54)

What is the difference in nutrient and gas requirements between autotrophs and heterotrophs?

- ☐ investigate the structure of autotrophs through the examination of a variety of materials, for example: (ACSBLO35)
- ☐ investigate the function of structures in a plant, including but not limited to:...
- ☐ investigate the gas exchange structures in animals and plants (ACSBLO32, ACSBLO56) through the collection of primary and secondary data and information, for example:...
- ☐ interpret a range of secondary-sourced information to evaluate processes, claims and conclusions that have led scientists to develop hypotheses, theories and models about the structure and function of plants, including but not limited to: (ACSBLO34)
- ☐ trace the digestion of foods in a mammalian digestive system, including:...
- ☐ compare the nutrient and gas requirements of autotrophs and heterotrophs

How does the composition of the transport medium change as it moves around an organism?

- ☐ investigate transport systems in animals and plants by comparing structures and components using physical and digital models, including but not limited to: (ACSBLO32, ACSBLO58, ACSBLO59, ACSBLO60)
- ☐ investigate the exchange of gases between the internal and external environments of plants and animals
- ☐ compare the structures and function of transport systems in animals and plants, including but not limited to: (ACSBLO33)
- ☐ compare the changes in the composition of the transport medium as it moves around an organism

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MODULE 3

Biological Diversity

BIO11-10

- How do environmental pressures promote a change in species diversity and abundance?**
- ☐

predict the effects of selection pressures on organisms in ecosystems, including: (ACSBLO26, ACSBLO90)
- ☐

investigate changes in a population of organisms due to selection pressures over time, for example: (ACSBLO02, ACSBLO94)

- How do adaptations increase the organism's ability to survive?**
- ☐

conduct practical investigations, individually or in teams, or use secondary sources to examine the adaptations of organisms that increase their ability to survive in their environment, including:...
- ☐

investigate, through secondary sources, the observations and collection of data that were obtained by Charles Darwin to support the Theory of Evolution by Natural Selection, for example:...

- What is the relationship between evolution and biodiversity?**
- ☐

explain biological diversity in terms of the Theory of Evolution by Natural Selection by examining the changes in and diversification of life since it first appeared on the Earth (ACSBLO88)
- ☐

analyse how an accumulation of microevolutionary changes can drive evolutionary changes and speciation over time, for example: (ACSBLO34, ACSBLO93)
- ☐

explain, using examples, how Darwin and Wallace's Theory of Evolution by Natural Selection accounts for:...
- ☐

explain how punctuated equilibrium is different from the gradual process of natural selection

- What is the evidence that supports the Theory of Evolution by Natural Selection?**
- ☐

investigate, using secondary sources, evidence in support of Darwin and Wallace's Theory of Evolution by Natural Selection, including but not limited to:...
- ☐

explain modern-day examples that demonstrate evolutionary change, for example:...

MODULE 4

Ecosystem Dynamics

BIO11-11

- What effect can one species have on the other species in a community?**
- ☐

investigate and determine relationships between biotic and abiotic factors in an ecosystem, including: (ACSBLO19)
- ☐

explain a recent extinction event (ACSBLO24)

- How do selection pressures within an ecosystem influence evolutionary change?**
- ☐

analyse palaeontological and geological evidence that can be used to provide evidence for past changes in ecosystems, including but not limited to:...
- ☐

investigate and analyse past and present technologies that have been used to determine evidence for past changes, for example: (ACSBLO05)
- ☐

analyse evidence that present-day organisms have evolved from organisms in the past by examining and interpreting a range of secondary sources to evaluate processes, claims and conclusions relating to the evolution of organisms in Australia, for example: (ACSBLO05, ACSBLO27)
- ☐

investigate the reasons for changes in past ecosystems, by:...

- How can human activity impact on an ecosystem?**
- ☐

investigate changes in past ecosystems that may inform our approach to the management of future ecosystems, including:...
- ☐

investigate practices used to restore damaged ecosystems, Country or Place, for example:...