Freshwater Indicator Species – Syllabus

Year 7

Classification helps organise the diverse group of organisms

- considering the reasons for classifying such as identification and communication
- grouping a variety of organisms on the basis of similarities and differences in particular features
- using provided keys to identify organisms surveyed in a local habitat

Interactions between organisms, including the effects of human activities can be represented by food chains and food webs

- investigating the effect of human activity on local habitats, such as deforestation, agriculture or the introduction of new species
- exploring how living things can cause changes to their environment and impact other living things, such as the effect of cane toads

Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations

- considering how human activity in the community can have positive and negative effects on the sustainability of ecosystems

People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity

- recognising that water management plays a role in areas such as farming, land management and gardening

Year 8

Cells are the basic units of living things; they have specialised structures and functions

- examining a variety of cells using a light microscope, by digital technology or by viewing a simulation
- distinguishing plant cells from animal or fungal cells
- recognising that some organisms consist of a single cell

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available

- investigating the development of the microscope and the impact it has had on the understanding of cell functions and division

People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity

- investigating how Aboriginal people recognise relationships in ecosystems by burning to promote new growth, attract animals and afford easier hunting and food gathering
- recognising the role of knowledge of the environment and ecosystems in a number of occupations

Year 9

Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems

- examining factors that affect population sizes such as seasonal changes, destruction of habitats, introduced species
- investigating how ecosystems change as a result of events such as bushfires, drought and flooding

People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities

- considering the impacts of human activity on an ecosystem from a range of different perspectives

Year 10

Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere

- investigating the effect of climate change on sea levels and biodiversity
- considering the long-term effects of loss of biodiversity

	Demonstrated inquiry	Prescribed inquiry	Structured inquiry	Guided inquiry	Open inquiry
Questions	No question	Teacher provides question	Learner sharpens question	Learner selects question	Learner poses questions
Plans	No planning	Teacher provides procedure	Teacher discusses possible plans	Learner guided while planning	Learner determines plans
Conducts	Teacher conducts	Learner told how to conduct and record	Learner sharpens plan and conducts	Learner guided while conducting and recording	Learner conducts and records
Analyse	Teacher analyses	Leaner told how to analyse data	Teacher discusses possible analyses	Learner guided in analysis	Learner analyses data identifying trends
Problem Solve	No problem solving	Teacher provides reasoning and links	Teacher discusses reasoning and conclusion	Learner guided in reasoning and formulate conclusion	Learner reasons to formulate conclusions
Communicate	No conclusion	Teacher writes conclusion	Learner writes conclusion	Learner guided on justifying findings and communicating	Learner justifies findings and conclusions