Science in Practice

Applied senior subject

Science in Practice develops critical thinking skills through the evaluation of claims using systematic reasoning and an enhanced scientific understanding of the natural and physical world.

Students learn through a contextual interdisciplinary approach that includes aspects of at least two science disciplines — Biology, Chemistry, Earth and Environmental Science or Physics. They are encouraged to become scientifically literate, that is, to develop a way of thinking and of viewing and interacting with the world that engages the practical and analytical approaches of scientific inquiry.

Students plan investigations, analyse research and evaluate evidence. They engage in practical activities, such as experiments and hands-on investigations. Through investigations they develop problem-solving skills that are transferable to new situations and a deeper understanding of the nature of science.

Pathways

A course of study in Science in Practice is inclusive and caters for a wide range of students with a variety of backgrounds, interests and career aspirations. It can establish a basis for further education and employment in many fields, e.g. animal welfare, food technology, forensics, health and medicine, the pharmaceutical industry, recreation and tourism, research, and the resources sector.

Objectives

By the conclusion of the course of study students should:

- describe and explain scientific facts, concepts and phenomena in a range of situations
- describe and explain scientific skills, techniques, methods and risks
- analyse data, situations and relationships
- apply scientific knowledge, understanding and skills to generate solutions
- communicate using scientific terminology, diagrams, conventions and symbols
- plan scientific activities and investigations
- evaluate reliability and validity of plans and procedures, and data and information
- draw conclusions, and make decisions and recommendations using scientific evidence.

Structure

The Science in Practice course is designed around core topics and at least three electives.

Core topics	Electives
• Scientific literacy and working scientifically • Workplace health and safety • Communication and self-management	• Science for the workplace • Resources, energy and sustainability • Health and lifestyles • Environments • Discovery and change

Assessment

For Science in Practice, assessment from Units 3 and 4 is used to determine the student's exit result, and consists of four instruments, including:

- at least one investigation based on primary data
- a range of assessment instruments that includes no more than two assessment instruments from any one technique.

Project	Investigation	Collection of work	Extended response	Examination
A response to a single task, situation and/or scenario.	A response that includes locating and using information beyond students' own knowledge and the data they have been given.	A response to a series of tasks relating to a single topic in a module of work.	A technique that assesses the interpretation, analysis/examination and/or evaluation of ideas and information in provided stimulus materials.	A response that answers a number of provided questions, scenarios and/or problems.
At least two different components from the following: • written: 500–900 words • spoken: 2½–3½ minutes • multimodal – non-presentation: 8 A4 pages max (or equivalent) – presentation: 3–6 minutes • performance: continuous class time • product: continuous class time.	Presented in one of the following modes: • written: 600–1000 words • spoken: 3–4 minutes • multimodal – non-presentation: 10 A4 pages max (or equivalent) – presentation: 4–7 minutes.	At least three different components from the following: • written: 200–300 words • spoken: 1½ –2½ minutes • multimodal – non-presentation: 6 A4 pages max (or equivalent) – presentation: 2–3 minutes • performance: continuous class time • test: – 20–30 minutes – 50–250 words per item.	Presented in one of the following modes: • written: 600–1000 words • spoken: 3–4 minutes • multimodal – non-presentation: 10 A4 pages max (or equivalent) – presentation: 4–7 minutes.	• 60–90 minutes • 50–250 words per item