



**Monivae**  
College Hamilton

# SCIENCE

## YEAR 7-10 SCIENCE

### Year 7

A Tangled Web: Exploring Biodiversity and Ecosystem Interactions  
Matter in Motion: Particles, Properties, and Mixtures  
May the force be with you: Simple Machines and the Physics of Motion  
Earth's Resources & Cosmic Cycles: Sustainability, Seasons, and Tides

### Year 8

Matter & Change: Elements, Compounds, and Change  
Understanding Energy: Transformations, Transfers, and Everyday Applications  
From Cell to System: Structure, Function, and Organisation  
Dynamic Earth: Tectonic Forces, Rock Formation, and Geological Change

### Year 9

Riding the Waves: Energy Transfer and Power Generation  
Body Defense: Regulation Systems and Disease Response  
Atomic organisation: Radioactivity and the Periodic Table  
Exploring the Cosmos: The Origins, Challenges, and Frontiers of Space

### Year 10

Chemical Reactions: Conservation, Classification, and Rates  
Carbon and Climate: Understanding Earth's Systems and Solutions  
Generation to Generation: The Patterns and Processes of Life's Continuity  
Newton's Laws in Action: Motion, Energy, and Efficiency



pathways

educating the  
**mind**  
**spirit**  
**heart**

More info at **monivae.com**

# VCE

## **Biology**

VCE Biology enables students to investigate the processes involved in sustaining life at cellular, system and species levels. In undertaking this study, students develop an understanding that, in the dynamic and interconnected system of life, all change has consequences that may affect an individual, a species or the collective biodiversity of Earth. Students gain insights into how molecular and evolutionary concepts and key science skills underpin much of contemporary biology, and how society applies such skills and concepts to resolve problems and make scientific advancements.

- Unit 1: How do organisms regulate their functions?
- Unit 2: How does inheritance impact on diversity?
- Unit 3: How do cells maintain life?
- Unit 4: How does life change and respond to challenges?

## **Chemistry**

VCE Chemistry enables students to investigate a range of chemical, biochemical and geophysical phenomena through the exploration of the nature of chemicals and chemical processes. Sustainability principles, concepts and goals are used to consider how useful materials for society may be produced with the least possible adverse effects on human health and the environment. In undertaking this study, students apply chemical principles to explain and quantify the behaviour of matter, as well as undertake practical activities that involve the analysis and synthesis of a variety of materials.

- Unit 1: How can the diversity of materials be explained?
- Unit 2: How do chemical reactions shape the natural world?
- Unit 3: How can design and innovation help to optimise chemical processes?
- Unit 4: How are carbon-based compounds designed for purpose?



pathways

educating the

mind  
spirit  
heart

## **Physics**

VCE Physics enables students to use observations, experiments, measurements and mathematical analysis to develop qualitative and quantitative explanations for phenomena occurring from the subatomic scale to macroscopic scales. They explore the big ideas that changed the course of thinking in physics such as relativity and quantum physics. While much scientific understanding in physics has stood the test of time, many other areas continue to evolve, leading to the development of more complex ideas and technological advances and innovation. In undertaking this study, students develop their understanding of the roles of careful and systematic observation, experimentation and modelling in the development of theories and laws. They undertake practical activities and apply physics principles to explain and quantify phenomena.

- Unit 1: How is energy useful to society?
- Unit 2: How does physics help us to understand the world?
- Unit 3: How do fields explain motion and electricity?
- Unit 4: How have creative ideas and investigation revolutionised thinking in physics?

## **Psychology**

VCE Psychology is designed to enable students to explore the complex interactions between thought, emotions and behaviour. They develop an insight into biological, psychological and social factors and the key science skills that underpin much of psychology. VCE Psychology is designed to promote students' understanding of how society applies such skills and psychological concepts to resolve problems and make scientific advancements. The study is designed to promote students' confidence and their disposition to use the information they learn in the study in everyday situations.

- Unit 1: How are behaviour and mental processes shaped?
- Unit 2: How do internal and external factors influence behaviour and mental processes?
- Unit 3: How does experience affect behaviour and mental processes?
- Unit 4: How is mental wellbeing supported and maintained?



pathways

educating the  
mind  
spirit  
heart

More info at [monivae.com](https://monivae.com)

## **Environmental science**

VCE Environmental Science enables students to explore the interrelationships between Earth's four systems. Students examine how past and current human activities affect the environment and how future challenges can be managed sustainably. In undertaking this study, students gain an understanding of the complexity of environmental decision-making, and how innovative responses to environmental challenges can reduce pressure on Earth's natural resources and ecosystem services.

- Unit 1: How are Earth's dynamic systems interconnected to support life?
- Unit 2: What affects Earth's capacity to sustain life?
- Unit 3: How can biodiversity and development be sustained?
- Unit 4: How can climate change and energy impacts be managed?



educating the  
mind  
spirit  
heart

More info at [monivae.com](https://monivae.com)