

# Science

## Staff in the Science Learning Area:

Mr M Tiedt (Head of Learning Area)

Mrs T Fetting  
Mr Frost  
Mr R Hill  
Ms K Hodgson  
Mr J Kurian  
Miss A McKellar  
Mr M Pearce  
Mr W Werder  
Mr I Woon

## LEARNING PATHWAY

### YEAR 9 SCIENCE

Year 9 Science is about everyday living. Our day-to-day lives are full of science and the products of science, so science is meaningful, interesting and fun.

### YEAR 10

#### Science

Year 10 Science, together with Year 9 Science work, provides an important background to lead to Year 11 studies.

#### CIE Cambridge Science

A class of invited students will be offered the Cambridge International Examination in Co-ordinated Science. This is a two year course with CIE being sat in Year 11. NCEA Credits will be achieved in Year 10 and Year 11 where applicable.

### YEAR 11

#### Science - NCEA Level 1

This Year 11 Science programme is a 24 Credits course and is assessed against 6 Achievement Standards. Three Standards worth 4 Credits are internally assessed. The remaining external will be from Science Matrix.

#### Science - NZASE

Course structure is aimed at Year 11 students who do not have the required skills to do NCEA Science. Unit Standards are assessed as part of the course.

#### CIE Cambridge Science

A class of invited students will be offered the Cambridge International Examination in Co-ordinated Science. Assessment fees will apply. These students must have completed the first year of this course in Year 10. NCEA Science Standards are also part of this course.

## YEAR 12

### **Science - NCEA Level 2**

This course is designed for the student who has an interest in Science but probably will not want to continue it through to University study. It is ideal for the student who has been successful at the Year 11 NCEA Science course.

### **Physics - NCEA Level 2**

This subject is a practical science course that explains how things work and how to tackle problems. It can lead on to job-oriented degrees in the technical area such as motor mechanics, electricians, opticians, and engineers. Strength in mathematics and science is advisable in this course. Topics covered include mechanics, waves, light, electricity magnetism and nuclear physics. Course involves individual project work and strong experimental involvement

### **Chemistry- NCEA Level 2**

This is a course which aims to provide students with the knowledge of how common substances are obtained, the ability to perform chemical calculations, an understanding of how chemicals react and the ability to handle substances and equipment safety. Students will also learn how to observe, measure and appreciate scientific methods. Core topics include Atomic Structure and Bonding, Stoichiometry, Qualitative Analysis, Oxidation/Reduction Reactions, Thermochemistry, Acids and Bases, and Organic Chemistry.

### **Biology - NCEA Level 2**

This is a course aimed at developing a personal interest and awareness of:

- Your environment, its needs, how to use it wisely and care for it
- Scientific skills, observation techniques, accurate recording and interpretation of results skills
- Biotechnology Content: Includes Ecology, Plants, Animals, Cell Biology, Individual Study and a one day field trip. The field trip deals with biotic and biotic factors effecting populations.

*Opportunities to study towards Cambridge University Examinations in Science at Year 12 may be offered. This will be at the discretion of the Senior Management and Head of Science within the first four weeks of Term 1.*

## YEAR 13

### **Science - NCEA Level 3**

This is a course designed for the student who has dropped Science after Year 11 and wants to secure a University prerequisite in Science. It is particularly suitable for students who are looking for qualifications that include non-science areas such as accounting, law, economics with some connection to science technology qualifications. The course includes Chemistry, Biology, Physics and the general concepts of each science.

### **Physics - NCEA Level 3**

Course content may include (but is not limited to):

- Rotation

- Oscillation
- Gravitation
- Fields
- Currents and Circuits
- Magnetism
- Waves
- Atomic Theory.

### **Chemistry - NCEA Level 3**

Course content may include (but is not limited to):

- Extended Practical Investigation
- Titrations
- Reduction - Oxidation
- Atomic, Molecular and Ionic Properties; Thermochemistry
- Organics
- Equilibrium Systems

### **Biology - NCEA Level 3**

This is a course which aims to develop an awareness of the role and responsibility of humans in the Biosphere and an appreciation of the relevance of biology for informed decision- making. It enhances communication skills, practical skills and the ability to apply principles and methods learnt in the course to new areas of study and everyday situations.

Content includes:

- Genetics and evolution
- Practical studies with plant or animal
- Relationship between organisms and their environment
- Human biological and cultural evolution
- Bio Technology