NCEA Level 1 Science
Course Outline 2021

The 2021 course is based on the Science in New Zealand Curriculum Document and is structured around 5 units of work. Two of these units will be internally assessed and the remaining three will be assessed externally at the end of the year.
We will be using the Year 11 sciPAD Science micro-workbooks

Investigate selected chemical reactions – selected from:

INTERNAL

- Combination reactions. These are limited to simple reactions of elements with other elements (such as magnesium or sulfur with oxygen, iron with sulfur etc.).
- Exchange reactions. These are limited to precipitation reactions e.g. formation of:
  - chlorides of silver and lead
  - sulfates of barium and lead
  - hydroxides of copper, iron (II), calcium, and magnesium
  - carbonates of copper, iron (II), zinc, calcium, and magnesium.
- Decomposition reactions - limited to thermal decomposition of carbonates and hydrogen carbonates.
- Displacement reactions - limited to the displacement of metal ions in solution by other metals.

Investigate implications of electricity and magnetism for everyday life.

INTERNAL

The context for this assessment is a report comparing the effectiveness of two methods of wiring lighting circuits in houses:

* You will perform a practical experiment in groups and independently research the domestic lighting circuits.
* You will then process this information, form a conclusion and present a report.
* You will need to link your prior knowledge, the information gathered on insulators, scientific theory of electricity and magnetism and your experimental data.
* This assessment is based on domestic lighting (series and parallel circuits).

Investigate biological ideas relating to interactions between humans and micro-organisms.

INTERNAL

The context for this assessment is a report relating the structure and life-processes of micro-organisms to the conditions for healthy microbial growth.

- You will perform a practical experiment in groups and independently research the life-processes and conditions of microbes.
- You will then process this information, form a conclusion and present a report.
- You will need to link your prior knowledge, the information gathered on microbes, biological ideas relating to the interactions between humans and microbes.
- This assessment is based on the use of microbes in food production.

Demonstrate an understanding of aspects of acids and bases.

EXTERNAL

* Atomic structure – Electron arrangement of atoms and monatomic ions of the first 20 elements, isotopes, ionic bonding, names and formulae of ionic compounds
* Rates of reaction and particle theory
* Acid/Base properties – pH and effects on indicators, acids release hydrogen ions in water
* Reactions of acids with bases to form salts
* Uses – neutralisation, carbon dioxide formation, salt formation

Demonstrate understanding of aspects of mechanics.

EXTERNAL

* Distance, speed, interpretation of distance and speed time graphs, average acceleration and deceleration in the context of everyday experiences such as sport, journeys, getting going etc.
* Mass, weight and the acceleration due to gravity, balanced and unbalanced forces, in the context of everyday experiences such as being stationary, moving at a constant speed, accelerating, etc.
* Force and pressure in the context of everyday experiences.
* Work and power, gravitational potential energy, kinetic energy, and the conservation of mechanical energy in free fall situations in the context of everyday experiences such as sports performance, dropping things, tossing balls.

The course offered is NCEA Level 1 Science. HIBS is offering the following mix of internal and external achievement standards, to give a total of 20 credits.

Unit	Standard	Description	INT/EXT	Credits
Science **1.1**	A.S. 90940	Demonstrate understanding of aspects of mechanics	External	4
Science **1.5**	A.S. 90944	Demonstrate an understanding of aspects of acids and bases	External	4
Science **1.11**	A.S. 90949	Demonstrate understanding of biological ideas relating to genetic variation	Internal	4
Science **1.8**	A.S. 90947	Investigate selected chemical reactions	Internal	4
Science **1.2**	A.S. 90941	Investigate implications of electricity and magnetism for everyday life	Internal	4

Year 11 Timeline

The following units will have a (non-credit), end of unit assessment which will take place at the conclusion of each unit of work, and an external end of year examination.

Unit	Provisional date
Science 1.1 Demonstrate understanding of aspects of mechanics	August 6th
Science 1.5 Demonstrate an understanding of aspects of acids and bases	September24th

The internal component of the subject will be assessed as follows:

Unit	Assessment	Provisional date
Science 1.8 Investigate selected chemical reactions	Practical investigation report	Term 2 wk. 1 to wk.5
Science 1.2 Investigate implications of electricity and magnetism for everyday life.	Practical investigation written report	Term 1 wk. 2 to 7
Science 1.11 Investigate biological ideas relating to interactions between humans and micro-organisms	Practical investigation written report	Term 1 wk.8 to 12

2021 Core Science Course

Week	Month	Date	Topic	Assessment
1	February	1-5		
2	February	9-12	Science 1.2 Internal	Waitangi Day (8th)
3	February	15-19	Electricty	
4	February	22-26		
5	March	1-5		FORMATIVE
6	March	9-12		SUMMATIVE
7	March	15-19	Science 1.11	
8	March	22-26	Investigate biological ideas relating to interactions between humans and micro-organisms	
9	March/April	29-1		
10	March	30-3		Good Friday 2nd April
11	April	7-9		Easter Monday and Tuesday 5th and 6th
12	April	12-16		
	April	19-23		
	April	26-30		Anzac Day Holiday 26th
1	May	3-7	Science 1.8 Internal	
2	May	10-14	Investigate selected chemical reactions	ToD May 11th
3	May	17-21		
4	May	24-28		
5	May/June	31-4		
6	June	8-11	Science 1.1	Queen's B' Day 7th
7	June	14-18	Mechanics	
8	June	21-25		
9	July	28-2		
10	July	5-9		
	July	12-16		
	July	19-23		
1	July	26-30		
2	August	2-6		ToD 5th August
3	August	9-13	Science 1.5	
4	August	16-20	Acids and Bases	
5	August	23-27		
6	August/September	30-3		Tournament week
7	September	6-11		
8	September	13-17		
9	September	20-24		
10	September/October	27-1		
	October	4-8		
	October	11-15		
1	October	18-22		IEE
2	October	26-29		Labour Day 25th.
3	November	1-5		Seniors last day 3rd Nov
4	November	8-12		
5	November	15-19		
6	November	22-26		
7	November/December	29-3		ToD 1st December
8	December	6-10		