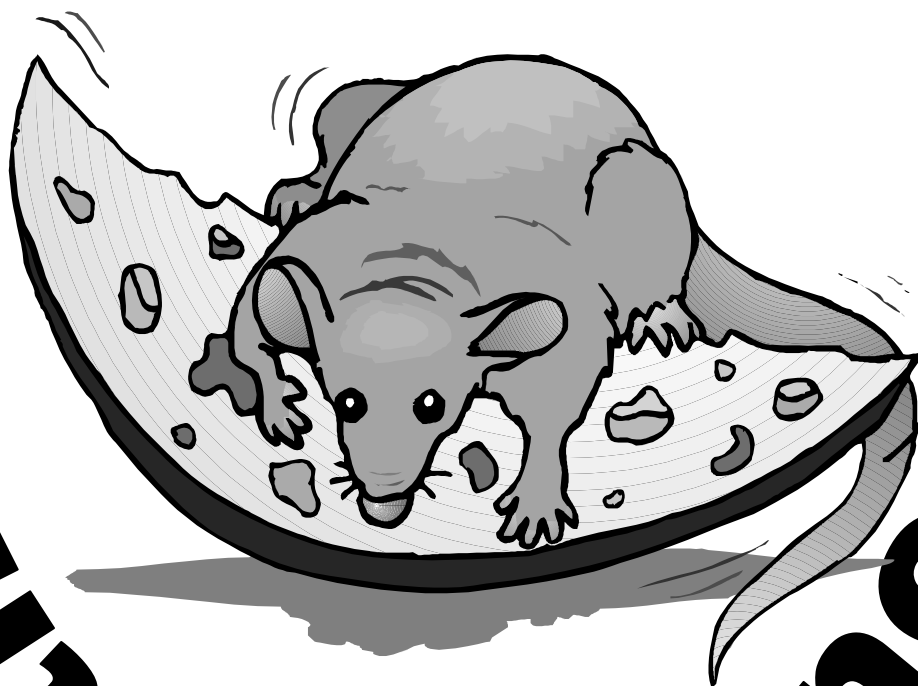


Year 10 Science Course Outline



2016

Year 10 Science - Outline of the Course

Plants way of Life (Biology)

- Name the main parts of plants and explain their roles
- Understand and explain what plants need to grow (osmosis, transpiration, photosynthesis)
- Be able to discuss the importance of bees to plants and alternatives (pollination)
- Discuss why plants are important to humans (food, medicine, stabilization, ecosystems)

Electricity (Physics)

- Explain how objects can become charged and describe / explain the effects
- Distinguish between static and current electricity
- List the requirements for current to flow in a circuit
- Distinguish between conductors and insulators and give examples of uses
- Draw a simple circuit diagram using appropriate symbols
- Be able to set up simple electrical circuits
- Distinguish between series and parallel circuits
- Explain the advantages and disadvantages of parallel and series circuits
- Explain what resistance is and how it affects current
- Explain electrical safety (RCD, fuse, earth wire)



Chemistry (Atoms)

- Be able to describe what an atom is. Know the meanings of the terms atom, proton, neutron, electron, nucleus, atomic number, mass number and how to determine their numbers from supplied data
- Know the names and symbols for the first 20 elements of the Periodic Table.
- Be able to explain the model for an atom and arrange electrons into shells
- Be able to discuss why atoms form ions and how they do this

Physics Practical

- Be able to design a reliable experiment
- Identify what should be changed and what should be kept the same in an experiment
- Carry out practical experiments
- Record results (graphing)
- Draw conclusions and evaluate what how well a practical went

Science in Motion (Physics)

- Know the units for mass, weight, time, distance, speed, and force and be able to convert units of measurement from milli-, centi-, kilo-.
- Be able to make careful exact measurements for time and distance and use to calculate speed.
- Be able to distinguish between mass and weight and understand the effect of gravity on masses on different planets.
- Be able to define what a force is and what it does. Draw force diagrams
- Explain how friction can affect an object.
- Explain the effects of balanced and unbalanced forces.



Chemistry (Reactions)

- Be able to identify when a chemical reaction has occurred
- Be able to discuss acids, bases, pH and indicators.
- Describe reactions of acid with metals, carbonates and bases
- Write word equations for reactions of acids with metals, carbonates and bases



Human Biology


- Be able to describe the structure and function of the human digestive system.
- Be able to describe the different food groups and their uses. To carry out food tests.
- Discuss how altering our diets affects us
- Examine and investigate the human circulatory system
- Identify the roles of key structures in the brain
- Explain how learning occurs in the brain
- Examine and discuss what can cause the brain to function differently

Microbiology

- Describe what a microbe is
- Be able to compare fungi, bacteria and viruses
- Explain what microbes need to live and discuss how we can use this information (food preservation, disease prevention and treatment)
- Discuss vaccines and antibiotics
- Culture microbes and identify colonies as bacteria or fungi
- Test antibiotics and explain how antibiotic resistant bacteria are formed
- Carry out Research into one disease caused by a microbe



Year 10 Science Assessment Schedule

	Week	Topic	Assessment	Points	Grade N,A,M,E
Term 1	1	Plant Way of Life			
	2				
	3				
	4				
	5				
	6	Electricity			
	7				
	8				
	9				
	10				
		11		Research	3
Term 2	1	 Chemistry (Atoms)			
	2				
	3				
	4	Science In Motion (Physics)			
	5				
	6				
	7				
	8				
	9				
	10				
	10		Test	4	
Term 3	1	Chemistry (Reactions)			
	2				
	3				
	4				
	5	Human Biology			
	6				
	7				
	8				
	9				
	9		Practical	3	
Term 4	1	Human Biology Project			
	2				
	3	EXAM PREPARATION			
	4	EXAM PREPARATION			
	5	EXAM PREPARATION AND EXAM		Exam	
	6	Microbiology			
	7				
	8				
	9				

Year 10 Assessment 2016

You will be assessed against the Year 10 Science Curriculum. Assessments will be given one of the following four grades

- **Achievement with Excellence** **E**
- **Achievement with Merit** **M**
- **Achievement** **A**
- **Not Achieved** **N**

Students who gain an average grade of Achievement, Merit or Excellence will be eligible to enter:

a) **the Science 101 or Science 111 NCEA course** (depending on quality of grades) doing Internal and External Achievement Standards.

b) All other students will take the **Science 102 NCEA course** doing Internal Achievement and Unit Standards only.

Science 102 students cannot do Physics, Biology or Chemistry in Year 12 and 13. However, they can do Science 202.

Reports

On your reports you will also be given grades for Effort, Behaviour and Completion of work.

Effort

Excellent	Gives their best efforts at all times and actively contributes to the class
Good	Usually gives of a strong effort and contributes to the class most of the time
Below Standard	Makes a reasonable effort in class but not to best of ability
Cause for Concern	Is not making a satisfactory effort in class

Behaviour

Excellent	Always well behaved and contributes to a positive learning environment
Good	Usually well behaved and contributes to a positive learning environment most of the time
Below Standard	Sometimes conforms to classroom routines and teacher expectations
Cause for Concern	Exhibits behaviour that prevents learning of self and / or others.

Completion of work

Excellent	Work (including homework) always completed to a high standard
Good	Work (including homework) always completed to best of ability
Below Standard	Work (including homework) sometimes completed to best of ability
Cause for Concern	Work (including homework) often uncompleted / not completed to best of ability

Year 10 Science Assessment Schedule and Record of Achievement

Topic	Sub-Unit	Assessment type	Assessment date (Approx.)	Graduation points	Grade Awarded	Parent / Guardian Signature
Plants (Biology)	Demonstrate understanding of Plants	Research project	Term 1 week 5	3		
Electricity	Demonstrate understanding of simple electrical systems	Test and practical	Term 1 week 10	4		
Chemistry (Atoms)	Demonstrate understanding of atomic structure	Test	Term 2 week 3	3		
Physics Practical	Carry out a simple Physics practical, with direction	Practical	Term 2 week 8	2		
Science in Motion (Physics)	Demonstrate understanding of forces and motion	Test	Term 2 week 10	3		
Chemistry (Reactions)	Demonstrate understanding of simple chemical reactions	Practical	Term 3 week 4	3		
Human Biology	Demonstrate understanding of human digestive, brain and circulatory systems	Test	Term 3 week 9	4		
Examination	All topics (Reassessment opportunity for all topics except the practicals)	2 hour exam	Term 4 week 4			
Microbiology	Demonstrate understanding of Micro-organisms					

Make sure you visit the Y10 Science Web page regularly to help you with your learning.

During the year make sure you visit the **Kapiti College Science Web Page on MyKC**

The Year 10 Science page on the school's MyKC (Moodle) website (Accessible by clicking the link for Year 10 Science on the Science department page on the MyKC website)

These web pages have material to help you with your study. They include resources for each topic as well as previous year's exams and test papers.



SCIENCE DEPARTMENT







 News forum

Learning in science is fundamental to understanding the world in which you live. It helps people clarify ideas, to ask questions, to test explanations through measurement and observation, and to use their findings to establish the worth of an idea.

In Science we focus on you understanding and investigating the living, physical, material and technological components of your environment. You will be provided with opportunities to develop scientific investigation skills to extend and develop your existing ideas about science.

Science is a major influence in many aspects of your daily life, at work, at play and at home and the Science course focuses on activities and ideas that are relevant to you.

Course Outlines (including Assessment timelines)











-  [Year 9 Science Course Outline](#)
-  [Year 10 Science Course Outline](#)
-  [Health Science 101 Course Outline](#)
-  [Science 101 Course Outline](#)
-  [Science 102 Course Outline](#)
-  [Science 202 Course Outline](#)

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