

Year Level: 9			
Subject: Science 902		Semester: 2	
Week	Topic	Learning Focus	Victorian Curriculum Strands & Sub strands
1-5	Electricity	<ul style="list-style-type: none"> • Identify different forms of energy, describe energy transformations and calculate percentage energy efficiencies. • Provide examples of circuit components and their functions, identify their diagram symbols and draw simple electrical circuits. • Investigate and compare series and parallel circuits • Investigating Ohm's Law using circuit kits and virtual circuit activities • Investigate different methods of electricity production including hydro, wind, solar and galvanic cells. • Use electricity safely and describe how fuses, circuit breakers and safety switches prevent fire and electrocution • Investigate how a house is wired and ways to reduce electricity use in the home • Investigate galvanic and electrolytic cells and carry out electroplating • Describe the properties of the main forms of electromagnetic radiation. 	Electric circuits can be designed for diverse purposes using different components; the operation of circuits can be explained by the concepts of voltage and current (VCSSU130)
6- 8	Electromagnetism	<ul style="list-style-type: none"> • Explain how wires carrying an electric current generate a magnetic field • Explain how electricity can be used to create a magnet and how to alter the strength of such a magnet • Investigate how electricity and magnets are used to produce movement • Describe how an electric motor works and identify and describe everyday devices which have electric motors such as hair dryers and washing machines. • Create a simple electric motor • Describe the process of electromagnetic induction • Distinguish between alternating current and direct current and how they are generated • Explain the use of electromagnetic fields in technology and medicine. 	The interaction of magnets can be explained by a field model; magnets are used in the generation of electricity and the operation of motors (VCSSU131)

9-12	Chemistry –Atoms & Radioactivity	<ul style="list-style-type: none"> • Describe the structure of atoms in terms of the nucleus, protons neutrons and electrons. • Explain in simple terms how alpha and beta particles and gamma radiation are released from unstable atoms • Describe the effects of radiation on the human body • Investigate how radioactivity is measured • Model radioactive decay • Give examples of how radioactive elements are used in a range of applications. 	All matter is made of atoms which are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms VCSSU122
13-16	Earth Science - Plate Tectonics	<ul style="list-style-type: none"> • Describe how heat energy and convection currents in the Earth’s mantle cause the movement of tectonic plates • Recognise the major tectonic plates on a world map relative to Australia • Model plate interactions and sea-floor spreading • Relate the occurrence of earthquakes and volcanoes to plate boundaries • Analyse seismic waves to locate an earthquake • Describe the evidence that support the theory of plate tectonics 	The theory of plate tectonics explains global patterns of geological activity and continental movement VCSSU127
17-20	Biology – Ecosystems	<ul style="list-style-type: none"> • Describe ecosystems in terms of abiotic and biotic factors and give examples of these factors • Describe a variety of relationships between organisms in ecosystems • Identify factors that influence population size and use a number of different methods to estimate population sizes • Define biological control and give examples of its use in Australia including the use of Myxomatosis to control rabbits. • Explain the processes of photosynthesis and respiration • Explain how matter and energy flow through ecosystems • Describe some of the adaptations some Australian plants have to fire • Provide examples of natural events and human activity that can disrupt an ecosystem • Describe the enhanced greenhouse effect and its causes • Provide examples of management practices, both modern and historical 	Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (VCSSU121) Selection and use of appropriate equipment and technologies to systematically collect and record accurate and reliable data, and use of repeat trials to improve accuracy, precision and reliability (VCSSU136)

