

ALEXANDRA SECONDARY COLLEGE – YEAR 9 SCIENCE
COURSE OUTLINE 2017

Week	Topic	Learning Focus	Victorian Curriculum Strands & Sub strands
1-5	<p>Introduction to Year 9 Science & Revision of Safety</p> <p>Nervous & endocrine systems, Diseases & Microbes</p>	<ul style="list-style-type: none"> • Describe the broad divisions of the nervous system – Central and Peripheral • Describe the stimulus response model. • Describe the variety of receptors which detect external stimuli. • Distinguish between the structure and function of the main types of neurons – sensory, interconnecting and motor • Understand and model nervous signalling pathways. • Provide examples of human reflex actions. • Identify functions for different areas of the brain. • Dissect a brain. • Research a disease of the nervous system and present their findings to the class. • Describe the different endocrine glands and the hormones they produce. • Investigate the role of some plant hormones in regulating plant growth. 	<p>Multicellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment VCSSU117</p> <p>An animal's response to a stimulus is coordinated by its central nervous system (brain and spinal cord); neurons transmit electrical impulses and are connected by synapses VCSSU118</p>
6-9	<p>Acids & bases, Atomic Structure, Chemical reactions,</p>	<ul style="list-style-type: none"> • Investigate the properties of acids and bases and how acidity is measured. • Investigate the reactions of acids with metals bases and carbohydrates • Describe chemical reactions using word equations. • Outline the impacts of acid rain. 	<p>Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer VCSSU126</p>

10-11	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. 	<p>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</p>
12 –14	Geology – Continental Drift	<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 	<p>The theory of plate tectonics explains global patterns of geological activity and continental movement VCSSU127</p>
15-20	Consumer Science	<ul style="list-style-type: none"> • Formulate testable hypotheses • Explain the differences between independent, dependent and controlled variables. • Relate reliability of results to sample size and repetition of the test 	<p>Formulate questions or hypotheses that can be investigated scientifically, including identification of independent, dependent and controlled variables VCSIS134 Independently plan, select and use appropriate investigation types, including fieldwork and laboratory experimentation, to collect reliable data, assess risk and address ethical issues</p>

		<ul style="list-style-type: none">• Design an experiment to test the claims of a manufacturer of a consumer product according to the scientific methods ensuring safety and ethical standards are met.• Carry out the experiment and present the data in a suitable form• Analyse data trends and draw appropriate conclusions and evaluate their experimental design.• Present their findings in a scientific report with all relevant sections using appropriate scientific language and conventions.	associated with these investigation types VCSIS135 Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations VCSIS140
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