

Level Six plan — Victorian Curriculum: Science (EVEN YEAR)



Implementation year: 2017

School name: Kyabram P-12 College

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Identify Curriculum	Phase curriculum focus and Year level description	In Levels 5 and 6, the curriculum focus is on recognising questions that can be investigated scientifically and undertaking investigations. Students explore how changes can be classified in different ways. Students are introduced to cause-and-effect relationships that relate to form and function through an exploration of adaptations of living things. They explore observable phenomena associated with light and begin to appreciate that phenomena have sets of characteristic behaviours. They broaden their classification of matter to include gases and begin to see how matter structures the world around them. Students develop a view of Earth as a dynamic system, in which changes in one aspect of the system impact on other aspects. They consider Earth as a component within a solar system and use models for investigating systems at astronomical scales. Students begin to identify stable and dynamic aspects of systems, and learn how to look for patterns and relationships between components of systems. Students learn about transfer and transformations of electricity, and continue to develop an understanding of energy flows through systems. They link their experiences of electric circuits as a system at one scale, to generation of electricity from a variety of sources at another scale and begin to see links between these systems. Similarly, they see that the growth and survival of living things are dependent on matter and energy flows within a larger system. Students begin to see the role of independent, dependent and controlled variables in performing experimental investigations and learn how to look for patterns and relationships between variables. They develop explanations for the patterns they observe, drawing on evidence.
	Achievement standard	<p>By the end of Level 6, students explain how scientific knowledge is used in decision making and develops from many people's contributions. They discuss how scientific understandings, discoveries and inventions affect peoples' lives. They compare the properties and behaviours of solids, liquids and gases. They compare observable changes to materials and classify these changes as reversible or irreversible. They explain everyday phenomena associated with the absorption, reflection and refraction of light. They compare different ways in which energy can be transformed from one form to another to generate electricity and evaluate their suitability for particular purposes. They construct electric circuits and distinguish between open and closed circuits. They explain how natural events cause rapid change to Earth's surface and use models to describe the key features of our Solar System. They analyse how structural and behavioural adaptations of living things enhance their survival, and predict and describe the effect of environmental changes on individual living things.</p> <p>Students follow procedures to develop questions that they can investigate and design investigations into simple cause-and-effect relationships. When planning experimental methods, they identify and justify the variables they choose to change and measure in fair tests. They make predictions based on previous experiences or general rules. They identify and manage potential safety risks. They make and record accurate observations as tables, diagrams or descriptions. They organise data into tables and graphs to identify and analyse patterns and relationships. They compare patterns in data with their predictions when explaining their findings. They suggest where improvements to their experimental methods or research could improve the quality of their data. They refer to data when they report findings and use appropriate representations and simple reports to communicate their ideas, methods, findings and explanations.</p> <p>Source: Victorian Curriculum 14 September 2015 http://victoriancurriculum.vcaa.vic.edu.au/Copyright</p>
	Course Outline	<p>Students study one hour of Science per week in Year Six.</p> <p>Even Years Semester 1</p> <p>Throughout this semester students have participated in a range of experimental activities with the aim of understanding scientific processes. These processes include posing questioning for investigation, following experimental methods, safely using equipment and explaining experimental results.</p> <p>Areas of Science covered this semester include Product Testing, Habitats, Weathering and Model Building.</p> <p>Even Years Semester 2</p> <p>Throughout this semester students have participated in a range of experimental activities with the aim of understanding scientific processes. These processes include posing questioning for investigation, following experimental methods, safely using equipment and explaining experimental results.</p> <p>Areas of Science covered this semester include States of Matter, Light and Sustainable Energy Use.</p>

Teaching and learning	Unit Overview	<p>Term 1</p> <p>Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives (VCSSU073)</p> <p>Sudden geological changes or extreme weather conditions can affect Earth's surface (VCSSU079)</p> <p>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)</p> <p>With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks (VCSIS083)</p> <p>Decide which variables should be changed, measured and controlled in fair tests and accurately observe, measure and record data (VCSIS084)</p> <p>Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data (VCSIS085)</p> <p>Compare data with predictions and use as evidence in developing explanations (VCSIS086)</p> <p>Suggest improvements to the methods used to investigate a question or solve a problem (VCSIS087)</p> <p>Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships (VCSIS088)</p>	<p>Term 2</p> <p>Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives (VCSSU073)</p> <p>Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)</p> <p>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)</p> <p>With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks (VCSIS083)</p> <p>Decide which variables should be changed, measured and controlled in fair tests and accurately observe, measure and record data (VCSIS084)</p> <p>Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data (VCSIS085)</p> <p>Compare data with predictions and use as evidence in developing explanations (VCSIS086)</p> <p>Suggest improvements to the methods used to investigate a question or solve a problem (VCSIS087)</p> <p>Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships (VCSIS088)</p>	<p>Term 3</p> <p>Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives (VCSSU073)</p> <p>Solids, liquids and gases behave in different ways and have observable properties that help to classify them (VCSSU076)</p> <p>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)</p> <p>With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks (VCSIS083)</p> <p>Decide which variables should be changed, measured and controlled in fair tests and accurately observe, measure and record data (VCSIS084)</p> <p>Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data (VCSIS085)</p> <p>Compare data with predictions and use as evidence in developing explanations (VCSIS086)</p> <p>Suggest improvements to the methods used to investigate a question or solve a problem (VCSIS087)</p> <p>Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships (VCSIS088)</p>	<p>Term 4</p> <p>Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives (VCSSU073)</p> <p>Energy from a variety of sources can be used to generate electricity; electric circuits enable this energy to be transferred to another place and then to be transformed into another form of energy (VCSSU081)</p> <p>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)</p> <p>With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks (VCSIS083)</p> <p>Decide which variables should be changed, measured and controlled in fair tests and accurately observe, measure and record data (VCSIS084)</p> <p>Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data (VCSIS085)</p> <p>Compare data with predictions and use as evidence in developing explanations (VCSIS086)</p> <p>Suggest improvements to the methods used to investigate a question or solve a problem (VCSIS087)</p> <p>Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships (VCSIS088)</p>

Develop assessment	Assessment								
		Unit 1		Unit 2		Unit 3		Unit 4	
		Week	Assessment	Week	Assessment	Week	Assessment	Week	Assessment
			Book Work		Book Work		Book Work		Book Work
			Experimental Technique		Experimental Technique		Experimental Technique		Experimental Technique
		Experimental Design		Experimental Design/Models		Experimental Design		Experimental Design	

Level Six Science: review for balance and coverage of content descriptions.

Science Understanding					
	1	2	3	4	0
Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives (VCSSU073)	*	*	*	*	
Living things have structural features and adaptations that help them to survive in their environment (VCSSU074)		*			
The growth and survival of living things are affected by the physical conditions of their environment (VCSSU075)					
Solids, liquids and gases behave in different ways and have observable properties that help to classify them (VCSSU076)			*		
Changes to materials can be reversible, including melting, freezing, evaporating, or irreversible, including burning and rusting (VCSSU077)					3
Earth is part of a system of planets orbiting around a star (the Sun) (VCSSU078)					3
Sudden geological changes or extreme weather conditions can affect Earth's surface (VCSSU079)	*				
Light from a source forms shadows and can be absorbed, reflected and refracted (VCSSU080)					
Energy from a variety of sources can be used to generate electricity; electric circuits enable this energy to be transferred to another place and then to be transformed into another form of energy (VCSSU081)				*	

Science Inquiry Skills					
	1	2	3	4	0
With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)	*	*	*	*	
With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks (VCSIS083)	*	*	*	*	
Decide which variables should be changed, measured and controlled in fair tests and accurately observe, measure and record data (VCSIS084)	*	*	*	*	
Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data (VCSIS085)	*	*	*	*	
Compare data with predictions and use as evidence in developing explanations (VCSIS086)	*	*	*	*	
Suggest improvements to the methods used to investigate a question or solve a problem (VCSIS087)	*	*	*	*	
Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships (VCSIS088)	*	*	*	*	