

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



Implementation year: 2017

School name: Kyabram P-12 College

Prepared By: Kate Baldwin

Identify Curriculum	Phase curriculum focus and Year level description	In Levels 3 and 4, the curriculum focus is on recognising questions that can be investigated scientifically and undertaking investigations. Students observe heat and its effects on solids and liquids and begin to develop an understanding of energy flows through simple systems. In observing day and night, and investigating the life cycles of living things, they develop an understanding of the regularity and predictability of cycles. Students order their observations by grouping and classifying and in classifying things as living or nonliving they begin to recognise that classifications are not always easy to define or apply. Their understanding of classification and form and function is broadened through an exploration of the properties of natural and processed materials. They learn that forces include noncontact forces and begin to appreciate that some interactions result from phenomena that can't be seen with the naked eye. They begin to appreciate that current systems, such as Earth's surface, have characteristics that have resulted from past changes and that living things form part of systems. They begin to quantify their observations to enable comparison, and learn more sophisticated ways of identifying and representing relationships, including the use of tables and graphs to identify trends. They use their understanding of relationships between components of simple systems to make predictions. They apply their knowledge to make predictions based on interactions within systems, including those involving the actions of humans.
	Achievement standard	By the end of Level 4, students describe situations where science understanding can influence their own and others' actions. They explain the effects of Earth's rotation on its axis. They distinguish between temperature and heat and use examples to illustrate how heat is produced and transferred. They explain how heat is involved in changes of state between solid and liquid. They link the physical properties of materials to their use. They discuss how natural and human processes cause changes to Earth's surface. They use contact and non-contact forces to describe interactions between objects. They group living things based on observable features and distinguish them from non-living things. They describe relationships that assist the survival of living things. They compare the key stages in the life cycle of a plant and an animal and relate life cycles to growth and survival. Students describe how they use science investigations to identify patterns and relationships and to respond to questions. They follow instructions to identify questions that they can investigate about familiar contexts and make predictions based on prior knowledge. They discuss ways to conduct investigations and suggest why a test was fair or not. They safely use equipment to make and record formal measurements and observations. They use provided tables and column graphs to organise and identify patterns and trends in data. Students suggest explanations for observations and compare their findings with their predictions. They use formal and informal scientific language to communicate their observations, methods and findings. Source: Victorian Curriculum 14 September 2015 http://victoriancurriculum.vcaa.vic.edu.au/Copyright
	Course Outline	Students study one hour of Science per week in Year Four. Even Years Semester 1 Throughout this semester students have participated in a range of experimental activities with the aim of understanding scientific processes. These processes include questioning and planning for experiments and looking for patterns in the collected data. Areas of Science covered this semester include Living and Non-living Things, Senses, Heat and Machines. Even Years Semester 2 Throughout this semester students have participated in a range of experimental activities with the aim of understanding scientific processes. These processes include questioning and planning for experiments and looking for patterns in the collected data. Areas of Science covered this semester include Materials, Force and Friction, Energy and Sustainability.

Teaching and learning	Unit Overview	Term 1	Term 2	Term 3	Term 4
		<p>Science knowledge helps people to understand the effects of their actions (VCSSU056)</p> <p>Living things can be grouped on the basis of observable features and can be distinguished from non-living things (VCSSU057)</p> <p>With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)</p> <p>Suggest ways to plan and conduct investigations to find answers to questions including consideration of the elements of fair tests (VCSIS066)</p> <p>Safely use appropriate materials, tools, equipment and technologies (VCSIS067)</p> <p>Use formal measurements in the collection and recording of observations (VCSIS068)</p> <p>Compare results with predictions, suggesting possible reasons for findings (VCSIS070)</p> <p>Reflect on an investigation, including whether a test was fair or not (VCSIS071)</p> <p>Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language (VCSIS072)</p>	<p>Science knowledge helps people to understand the effects of their actions (VCSSU056)</p> <p>Heat can be produced in many ways and can move from one object to another; a change in the temperature of an object is related to the gain or loss of heat by the object (VCSSU063)</p> <p>With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)</p> <p>Suggest ways to plan and conduct investigations to find answers to questions including consideration of the elements of fair tests (VCSIS066)</p> <p>Safely use appropriate materials, tools, equipment and technologies (VCSIS067)</p> <p>Use formal measurements in the collection and recording of observations (VCSIS068)</p> <p>Use a range of methods including tables and column graphs to represent data and to identify patterns and trends (VCSIS069)</p> <p>Compare results with predictions, suggesting possible reasons for findings (VCSIS070)</p> <p>Reflect on an investigation, including whether a test was fair or not (VCSIS071)</p> <p>Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language (VCSIS072)</p>	<p>Science knowledge helps people to understand the effects of their actions (VCSSU056)</p> <p>Different living things have different life cycles and depend on each other and the environment to survive (VCSSU058)</p> <p>With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)</p> <p>Suggest ways to plan and conduct investigations to find answers to questions including consideration of the elements of fair tests (VCSIS066)</p> <p>Safely use appropriate materials, tools, equipment and technologies (VCSIS067)</p> <p>Use formal measurements in the collection and recording of observations (VCSIS068)</p> <p>Use a range of methods including tables and column graphs to represent data and to identify patterns and trends (VCSIS069)</p> <p>Compare results with predictions, suggesting possible reasons for findings (VCSIS070)</p> <p>Reflect on an investigation, including whether a test was fair or not (VCSIS071)</p> <p>Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language (VCSIS072)</p>	<p>Science knowledge helps people to understand the effects of their actions (VCSSU056)</p> <p>Natural and processed materials have a range of physical properties; these properties can influence their use (VCSSU060)</p> <p>A change of state between solid and liquid can be caused by adding or removing heat (VCSSU059)</p> <p>Forces can be exerted by one object on another through direct contact or from a distance (VCSSU064)</p> <p>With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)</p> <p>Suggest ways to plan and conduct investigations to find answers to questions including consideration of the elements of fair tests (VCSIS066)</p> <p>Safely use appropriate materials, tools, equipment and technologies (VCSIS067)</p> <p>Use formal measurements in the collection and recording of observations (VCSIS068)</p> <p>Compare results with predictions, suggesting possible reasons for findings (VCSIS070)</p> <p>Reflect on an investigation, including whether a test was fair or not (VCSIS071)</p> <p>Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language (VCSIS072)</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

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

Science Understanding					
	1	2	3	4	O
Science knowledge helps people to understand the effects of their actions (VCSSU056)	*	*	*	*	
Living things can be grouped on the basis of observable features and can be distinguished from non-living things (VCSSU057)	*				
Different living things have different life cycles and depend on each other and the environment to survive (VCSSU058)			*		
A change of state between solid and liquid can be caused by adding or removing heat (VCSSU059)				*	
Natural and processed materials have a range of physical properties; these properties can influence their use (VCSSU060)				*	
Earth's rotation on its axis causes regular changes, including night and day (VCSSU061)					O
Earth's surface changes over time as a result of natural processes and human activity (VCSSU062)					O
Heat can be produced in many ways and can move from one object to another; a change in the temperature of an object is related to the gain or loss of heat by the object (VCSSU063)		*			
Forces can be exerted by one object on another through direct contact or from a distance (VCSSU064)				*	

Science Inquiry Skills					
	1	2	3	4	O
With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)	*	*	*	*	
Suggest ways to plan and conduct investigations to find answers to questions including consideration of the elements of fair tests (VCSIS066)	*	*	*	*	
Safely use appropriate materials, tools, equipment and technologies (VCSIS067)	*	*	*	*	
Use formal measurements in the collection and recording of observations (VCSIS068)	*	*	*	*	
Use a range of methods including tables and column graphs to represent data and to identify patterns and trends (VCSIS069)		*	*		
Compare results with predictions, suggesting possible reasons for findings (VCSIS070)	*	*	*	*	
Reflect on an investigation, including whether a test was fair or not (VCSIS071)	*	*	*	*	
Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language (VCSIS072)	*	*	*	*	