

Sample Scope and Sequence - Science SCCI15122

Science, SCCI15122

Sample scope and sequence

Below is a possible sequence of content for Science, SCCI15122. This is an example only; to be used to support teachers to develop their own scope and sequence documents that meet the learning needs of their learners. While Work Requirements have been identified within this possible sequence of content, additional opportunities to elicit evidence of learning provided by the teacher should also be included in the development of a localised scope and sequence.

The Office of TASC have specific advice and requirements for the development of school-based scope and sequence documents for the purposes of quality assurance. Please visit the [TASC website](#) for more information.

Context statement

This sample scope and sequence was developed for a class size of 20-25 learners in a single campus senior secondary environment. Learners participated in 3 x 90-minute lessons per week. Learners have access to devices as required at school. Some learners have their own device.

Course specific advice

This document is part of a set of baseline resources to support teachers to implement Science, SCCI15122. Teachers are encouraged to view the accredited [Course Document](#) and [Course Implementation Guide](#) to assist them in developing their own scope and sequence for their specific context. A Community of Practice exists for this course, please visit our [website](#) for more information.

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
Term I Week 1	Module 1 Biological, Earth and Space Sciences	Science Safety: Rules of the Science Lab- <i>Explain why we have rules in the Lab</i> <i>Apply the science room rules to their own classroom</i>	<ul style="list-style-type: none"> Science room picture-identify the dangers Design a science safety poster showing the rules (or even one rule) 		<i>A selection of activities will make up the learner folio for Module 1. These will include the assessments and may include any of the other activities as needed.</i>	C2	E2
		Equipment in Science- <i>Identify and understand the use of common science equipment.</i>	<ul style="list-style-type: none"> Match the science equipment on the sheet with the real thing Measuring Instruments matchup sheet 			C2	E2

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Week 2	Ecological Processes	Life on Earth: <i>Explore the Kingdoms of Life</i> Vertebrates and Invertebrates- <i>Compare the difference between vertebrates and invertebrates</i> Classification and Dichotomous Keys <i>Identify why and how we classify organisms</i> <i>Explain the meaning of the words “characteristic” and “dichotomous”</i>	<ul style="list-style-type: none"> • “Plant/Animal or Other” individual or group activity (using plant/animal and bacteria pictures or specimens) • Backbone or not? -compare skeleton of a human and a specimen of a jellyfish (or similar) • Vertebrate/invertebrate classification sheet • Excursion to the Museum • What is a Characteristic? Make a list of your characteristics. • “Classifying Stuff” groups activity • ‘Using a dichotomous key’ worksheet 			C3	E1, E2, E4
		Design a Dichotomous Key <i>Apply knowledge of dichotomous keys to making a classroom key</i>	<ul style="list-style-type: none"> • Class Dichotomous Key (group task) 	Major	Yes	C3	E1, E2, E3, E4
Week 3	Ecological Processes	Interdependency of Living Things: What is an Ecosystem? <i>Examine levels of Organisation on Earth</i> <i>Identify key vocab words-“biosphere, biome, ecosystem, community, population, individual”</i> Living and Non-Living Things- <i>Explain the meaning of the words “abiotic” and “biotic” and apply to the real world.</i> <i>Apply knowledge of what’s living and what’s not to the real world</i>	<ul style="list-style-type: none"> • Ecosystem definition and types • Ecosystem Concept map • Definitions of what makes something “living” or “non-living” • Living and Non-Living identification sheet -list the abiotic and biotic components 			C2 C3	E2 E1, E3
		Making Observations of the Real World <i>Observe and record data of the living world</i> <i>Identify living and non-living components.</i> <i>Use and read science measuring equipment</i>	<ul style="list-style-type: none"> • Practise using data loggers and other measuring devices in class and recording data on some river/pond water • “Mini Ecosystems” –abiotic and biotic factors in a school garden ecosystem: • Draw, take photos or record a video showing the living and non-living components of an ecosystem 	Major	Yes	C1 C3 C4	E1, E2 E1, E4 E2, E3

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Week 4	Ecological Processes	<p>Excursion to Local Environment: (Tamar River)</p> <p><i>Explore the local environment</i></p> <p><i>Apply knowledge of how abiotic factors impact systems in real life</i></p> <p><i>Make predictions and draw conclusions</i></p> <p><i>Record data</i></p> <p><i>Communicate information</i></p> <p><i>Interpret and analyse data</i></p> <p><i>Work collaboratively</i></p> <p><i>Communicate information</i></p> <p><i>Work collaboratively</i></p>	<ul style="list-style-type: none"> • Measure and record abiotic factors of the River. • Observe human made changes to the river edge. Take photos. • Examine uses of the River and the River Foreshore • Observe the impact of the tides-predict the challenges to motor boats / yachts / rowers / ferries / wildlife • Discuss the impacts of floods in this area • Observe and record sources of Pollution • Print photos and data • Begin poster construction • Finalise group posters for presentation (4 min dialogue between teacher and learners about findings) • Time to organise folio for Module 1: Work Requirement 1 	Major	Yes	C1 C3 C4	All All All
Week 5	Biological Processes	<p>Requirements for Life:</p> <p>Photosynthesis</p> <p><i>Identify things needed for life</i></p> <p><i>Examine how plants and animals are all reliant on each other for survival</i></p> <p><i>Recognise the sun is the ultimate source of energy.</i></p> <p><i>Write the equation for photosynthesis</i></p> <p><i>Conduct a safe science experiment</i></p>	<ul style="list-style-type: none"> • Mind map on A3 paper group work- what do all living things need to survive? • Photosynthesis definition – why we are reliant on plants for survival 			C3	E1
			<ul style="list-style-type: none"> • Photosynthesis in Plants Experiment 	Major	Yes	C2 C3	E1, E2, E4 E2, E4
		<p>The Water Cycle:</p> <p><i>Recognise the importance of water for all life</i></p> <p><i>Identify the key processes of the water cycle</i></p> <p><i>Examine how the water cycle can be disrupted (droughts/climate change/ forest clearing/overuse of ground water)</i></p>	<ul style="list-style-type: none"> • Vocab-meaning of the terms in the water cycle • Label and colour in the Water Cycle Diagram • Discussion of how water moves through the environment • Investigate Transpiration in Plants 			C2 C3	E1, E2, E3, E4 E1, E2, E4

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		<p>Water for Life: <i>Explore where our drinking water comes from</i> <i>Investigation how water is treated</i> <i>Examine issues with contaminated water and the Water Crisis</i></p>	<ul style="list-style-type: none"> Examine how much water is used daily on average by households Group discussion-how can we reduce the amount of water wastage- make a list Construct a mini water filtration system (with plastic bottles, sand gravel, rocks, alum and dirty water) 			C4 C2 C3	E2 E1 E3, E4
Week 6	Biological Processes	<p>Interdependence of Living Things Food Chains: <i>Examine how energy passes through ecosystems</i> <i>Compare different types of consumers</i> <i>Recognise a food chain</i> <i>Identify trophic levels</i></p> <p>Food Webs: <i>Explain the difference between a food chain and a food web.</i> <i>Recognise that food webs are complex</i></p>	<ul style="list-style-type: none"> Word definitions-producers, herbivores, carnivores, omnivores, and decomposers In groups, suggest examples of each. Can one group survive without the other? Food Chain Activity- place the organisms in the correct order Label the arrows on a basic food web picture DPIPWE food web activity-string and species cards (do outside). What happens when one species is removed? 			C1 C3	E1 E1, E2, E3, E4
		<p>Excursion to Local Environment: (Cataract Gorge) <i>Explore the local environment and apply knowledge of how abiotic factors determine biotic factors</i> <i>Identify plant species and diversity</i> <i>Record and interpret data</i></p>	<ul style="list-style-type: none"> Observe differences in each side of the Gorge Measure and observe abiotic and biotic factors on both sides of the Gorge. Observe aspect, slope, geology, soil and moisture Record data, use photos in a poster or video recording Time to organise folio for Module 1: Work Requirement 1 	Major	Yes	C1 C3 C4	All All All
Week 7	Earth Science	<p>The Structure of our Earth: <i>Examine the Earth's structure</i> <i>Apply this to a model with correct proportions.</i></p>	<ul style="list-style-type: none"> Label a diagram of the Earth's structure 			C3	E1, E2
			<ul style="list-style-type: none"> Construct a plasticine Earth Model of the 4 layers 	Major	Yes	C1 C3	E1, E4 E1, E3

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
		<p>Geological Processes: <i>Recognise that the Earth has evolved over geological timescales.</i> <i>Examine the theory of plate tectonics and continental drift.</i> <i>Relate knowledge on plate movement to the Ring of Fire</i></p>	<ul style="list-style-type: none"> • Discussion about how the continents were once joined and are still moving • Watch: https://www.britannica.com/video/167290/land-Earth-continents-positions-landmass-Pangea • Pangea puzzle activity cut out and glue together • Plate Tectonics activity -colour each plate and label with their correct names 			C3	E1, E2, E3, E4
		<p>Natural Disasters: <i>Identify and explore volcanic eruptions, tsunamis, and earthquakes as part of Earth's geological processes</i> <i>Explore where volcanoes currently exist, which are active, parts of a volcano</i> <i>Predict impacts of volcanic eruptions.</i></p>	<ul style="list-style-type: none"> • Explore this interactive site: (use some of the worksheets) to gather information about volcanoes • https://www.3dgeography.co.uk/what-is-a-volcano • Work can be presented on a poster 	Major	Yes	C1 C3	E1, E2, E4 E1, E2, E3
Week 8	Earth Science	<p>Volcanoes: <i>Identify how volcanoes are formed. Identify the parts of a volcano</i></p>	<ul style="list-style-type: none"> • Activity: What's inside a volcano? • Make a model volcano from plasticine, bicarb soda and vinegar. 	Major	Yes	C1 C3	E1, E2, E4 E1, E3
		<p>Rocks and Minerals: Types of Rocks: <i>Identify the difference between the 3 major rock types.</i> <i>Apply geological processes to different rock types.</i> <i>Explain how fossils are formed</i></p>	<ul style="list-style-type: none"> • Sedimentary, metamorphic and igneous rocks-characteristics and formation • Examine rock samples in class- classify each according to their characteristics. • Make a fossil from plaster of Paris, sand, a mould and a shell/leaf/feather 			C3	E1, E2, E3
		<p>The Importance of Minerals: <i>Examine different important minerals used by man-bauxite, haematite, lithium</i> <i>Explore uses of minerals by society</i></p>	<ul style="list-style-type: none"> • Examine different minerals in class 			C3	E1
			<ul style="list-style-type: none"> • Explore this site for information on mineral use: https://www.riotinto.com/en/operations/australia/bell-bay (or any other site/s) • Time to organise work for Module I: Work Requirement I 	Major	Yes	C1 C8	E4 E1, E2, E3

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
Week 9	Space Science	The Earth in Space: Components of our Solar System <i>Identify where Earth sits in relation to the Sun, Moon, and planets</i> <i>Explore features of each planet</i>	<ul style="list-style-type: none"> Label the planets and fill out information about each planet “The requirements for life” brainstorm 			C3	E1, E3
		Changes in Time and Seasons: <i>Identify that the Earth rotates on its axis and orbits the sun</i> <i>Recognise we have night/day/seasons</i> <i>Identify differences btw day/night and summer/winter (temp/day length)</i> <i>Demonstrate skills in applying planetary changes with activities (eg growing vegies, sleeping, working)</i>	<ul style="list-style-type: none"> Demonstrate with a globe, how the Earth spins around the sun and how it spins on its axis Label the seasons on a diagram Examine how daylight changes with the seasons List the activities we do during the day/night/winter/spring/autumn and summer 			C3	E1, E2, E4
		The Power of the Tides: <i>Examine how the Moon was formed</i> <i>Recognise the phases of the Moon</i> <i>Recognise that it is the Moon that causes tide fluctuations</i> <i>Explore some of the impacts of tidal surges during storms and increase in sea levels due to climate change</i>	<ul style="list-style-type: none"> Phases of the moon drawings How tides work. Watch video: https://www.youtube.com/watch?v=3RdkXs8BibE Complete worksheet Video on storm surges 			C3 C4	E1, E2, E3, E4 E2
Week 10	Space Science	Technology and Space Travel: <i>Explore how space travel has changed over time</i>	<ul style="list-style-type: none"> History of Space exploration -first lunar landing-video and discussion Space X latest developments with space travel: Explore https://www.spacex.com/ List major achievements 			C4	E2, E3
		<i>Investigate advancements in space technology and its contribution to society</i>	<ul style="list-style-type: none"> Technological advancements that are used every day (eg thermal blankets, mobile phones, heart pacemakers, satellites and GPS, miniaturisation of computers) 	Major	Yes	C1	E1, E2, E3
			<ul style="list-style-type: none"> Design and build a rocket? 			C3	E3

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		Work Requirements	<ul style="list-style-type: none"> Time to organise folio for Work Requirement 1 Presentation of Module 1 folio for Module 1: Work Requirement 2 	Major	Work Requirements 1 and 2	C4	E1, E2, E3
Term 2 Week 1	Module 2 Physical and Chemical Sciences Chemical Science	Matter: The Properties of Matter: <i>Explore what matter is and how it can change</i> <i>Describe the differences btw a solid, liquid and gas using the particle theory</i>	<ul style="list-style-type: none"> Activity: Classify or rank pictures of different types of 'matter' as most solid-like to most liquid-like 	Major	Yes	C5	E1, E2, E3
			<ul style="list-style-type: none"> Worksheet: label liquid, solid or gas Properties of Solids, Liquids and Gases 			C5	E1, E2, E3, E4
		The States of Matter: Physical Changes of Matter <i>Explore how matter can change states</i> <i>Name each of the processes of matter changing states (eg freezing, melting, etc)</i> <i>Identify the concept of physical changes resulting in the creation of no new substances</i>	<ul style="list-style-type: none"> Discuss and label physical changes Match word meanings Watch: https://letstalkscience.ca/educational-resources/stem-in-context/physical-and-chemical-changes-in-kitchen 			C1 C5	E1, E2 E1, E2, E3
			<ul style="list-style-type: none"> Activity: how substances change when heated or cooled (eg heating a metal ring, heating and freezing coloured water, heating/cooling a gas) 	Major	Yes	C1 C5	E1, E2 E1, E2, E3
		The States of Matter: Chemical Changes of Matter <i>Explore how matter can change into a new substance through heating or a chemical reaction</i> <i>Identify the difference btw a physical and chemical change</i>	<ul style="list-style-type: none"> Discuss and label the chemical changes worksheet Discuss chemical reactions in everyday life (eg cooking, digestion, rusting, photosynthesis, combustion) 			C1 C5	E1, E2 E1
			<ul style="list-style-type: none"> Activity: Identify either physical or chemical change-stations set up around the room 	Major	Yes	C1 C5	E1, E2, E3, E4 E1, E2, E3, E4
Week 2	Chemical Science	Chemical Changes: <i>Explore the difference btw exothermic and endothermic reactions</i> <i>Apply exo/endo reactions to real life</i>	<ul style="list-style-type: none"> Discuss the meaning of the terms "exothermic" and "endothermic" and give examples of common exothermic and endothermic reactions Explain the processes involved in heat packs and cold packs 			C1 C6	E1, E2 E1, E2
		Mixing Matter: Soluble or Insoluble:	<ul style="list-style-type: none"> Activity: Will it dissolve or not? Write down your predictions 	Major	Yes	C5	E2, E3, E4
			<ul style="list-style-type: none"> Vocab words sheet-solution, solvent, solute, mixture Discuss the difference btw a solution and a suspension 			C1 C5	E1 E1

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		<i>Predict which substances will dissolve and which won't</i> <i>Recognise and explain the terms "solution", "solvent" and "solute"</i>	<ul style="list-style-type: none"> Activity: Create solutions and mixtures using different solutes and solvents-predict which will dissolve and which won't 	Major	Yes	C5	E2
		Separating Solutions: <i>Investigate different techniques for separating solutions</i> <i>Recognise the meaning of words such as evaporation, filtration, sieving, distillation, centrifuging, decantation, chromatography</i> <i>Predict what can or can't be separated</i>	<ul style="list-style-type: none"> Brainstorm: how would you separate substances? Vocab words sheet-filter, evaporate, sieve, decant, distil Demonstration of different separating techniques 			C5 C1	E2, E3 E1
			<ul style="list-style-type: none"> Activity: use different techniques to separate solutions as listed-predict which substances can be separated 	Major	Yes	C1 C5	E1, E2, E3, E4 E1, E2, E3, E4
Week 3	Chemical Science	Separating Solutions: <i>Examine the process of centrifuge</i> <i>Explore the process of forming crystals from supersaturated solutions</i> Separating Colours <i>Explore the process of Chromatography</i> <i>Apply chromatography techniques to real life-forensic science</i>	<ul style="list-style-type: none"> Discussion of centrifuge processes in blood separation, dairy Industry etc Activity: Growing Crystals from Copper Sulphate Discuss the process of chromatography Applications of chromatography Activity: Separating Texta Colours Vocab word meaning worksheet-element, compound, mixture 			C5 C1	E1, E2, E3, E4 E1
		Elements, Compounds and Mixtures: <i>Identify an element, a compound and a mixture</i> <i>Explain the difference between an element, compound, mixture</i>	<ul style="list-style-type: none"> Activity: Explore common elements, compounds and mixtures-carbon, lead, copper, table salt, water, shampoo, concrete 	Major	Yes	C5	E1, E3
Week 4	Chemical Science	Pressure and Matter: <i>Explore how pressure can change matter from one state to another (eg gas in BBQ gas bottle, aerosol in a deodorant can)</i> <i>Understand the process of sublimation</i> <i>Predict what happens to objects put into dry ice</i>	<ul style="list-style-type: none"> Watch video on ClickView "Effect of Pressure on the States of Matter" (5 mins) Definition of Sublimation/how it differs from melting Activity using 3 syringes depressing each to represent pressure being applied to a gas, liquid and solid Demonstrations with dry ice-discussions of applications, learners predict what will happen to each object 			C5	E2, E3
						C5 C6	E4 E1, E2

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		Everyday Chemistry: <i>Examine everyday applications of chemistry and chemical reactions</i>	<ul style="list-style-type: none"> Activities: make cornflour slime, milk glue, ice-cream Demonstration: Sulphuric acid and sugar/Glycerol and Potassium Permanganate/others? 			C5	E1, E2, E3
		The Periodic Table: Some Important Elements: <i>Examine the periodic table</i> <i>Identify some common everyday elements</i> <i>Explore uses of some important elements</i>	<ul style="list-style-type: none"> Activity: Match the name with the correct symbol Group work: choose 5 solids, 5 liquids and 5 gases- write down for each: the name of the element, the origin of the element, what it is used for as an element and what it is used for as a compound 			C5	E1
				Major	Yes	C1 C5	E1, E4 E3
Week 5	Chemical Science	Acids and Bases: <i>Examine the pH scale</i> <i>Identify common acids and bases</i> <i>Explore different ways to measure pH</i> <i>Investigate the pH of different solutions</i>	<ul style="list-style-type: none"> Discussion- what is an acid and a base? Make a list of some common household acids and bases Label the pH scale worksheet Practise using pH measuring devices 			C5 C1	E2, E3, E4 E1
		Acids and Bases: <i>Make predictions as to which solutions are acidic and which are basic</i> <i>Examine common acid and bases in everyday life and ways to neutralise them</i>	<ul style="list-style-type: none"> Activity: predict then measure the pH of various (safe) substances (eg vinegar, lemon juice, liquid soap, ammonia or bleach, milk, bicarb soda, coke, Mylanta- using pH paper and digital devices) 	Major	Yes	C1 C5	E1, E2 E3, E4
		Acids and Bases in the Environment: <i>Examine some of the impacts of acid rain</i> <i>Explore impacts of ocean acidification</i>	<ul style="list-style-type: none"> Discussion on how acid rain forms. Watch: https://teleskola.mt/impacts-of-energy-demand-acid-rain/ Make a poster depicting the impact on the environment or building/structures etc of either ocean acidification or acid rain. Time to organise folio for Module 2: Work Requirement I 	Major	Yes	C1 C5	E1, E2, E4 E1, E2, E4
Week 6	Module 2 Physical and Chemical Sciences	Energy: Types of Energy: <i>Examine the different types of energy using examples</i> <i>Apply forms of energy to real life</i>	<ul style="list-style-type: none"> Discussion: what is energy and the different types of energy Learners brainstorm where they have seen energy being used or created Worksheet of matching up different form of energy or this interactive site: https://app.wizer.me/preview/TESELR 			C5	E1, E2, E3, E4

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	Physical Sciences	<i>Distinguish between potential and kinetic energy</i>	<ul style="list-style-type: none"> Activity: Energy from a Chemical Reaction (vinegar and Bicarb, and stopper a test tube) 	Major	Yes	C5	E2
		<i>Explore the different forms of energy</i> <i>Identify sources of energy</i> <i>Sketch scientific equipment</i>	<ul style="list-style-type: none"> Activity: Stations around the room with different set-ups of energy: light, sound, heat, electrical, kinetic etc. Learners name the energy type and sketch the set-up 	Major	Yes	C1 C5	E1 E2, E3, E4
		Energy Transformations: <i>Explain how energy is transferred</i> <i>Recognise energy can change from one form to another</i> <i>Recognise the law of energy conservation.</i> <i>Apply examples of energy changes to real life</i>	<ul style="list-style-type: none"> Discussion about how energy can change forms Discussion of how energy is always conserved Energy Transformations worksheet 			C5	E2
			<ul style="list-style-type: none"> Activity: "What is the Energy Change?" stations set up around the room. 	Major	Yes	C5	E1, E2, E3, E4
Week 7	Physical Sciences	Energy The 2nd Law: <i>Investigate how different materials can lose energy during an energy change</i> <i>Explore energy efficient lighting, appliances and insulations in homes</i>	<ul style="list-style-type: none"> Discussion: Heat is lost during energy conversions Label the energy lost on a diagram worksheet Activity 1: Examine different light globes and which produce the most heat 			C5 C1	E1, E2, E4 E1
			<ul style="list-style-type: none"> Activity 2: Wrap cans in different types of insulation, fill with hot water and measure the rate of temp decrease-predict which will insulate the best 	Major	Yes	C5	E3, E4
		Energy at Work: <i>Identify machines that need energy to work and the energy sources they need</i> <i>Predict consequences of this energy being unavailable</i>	<ul style="list-style-type: none"> Group work: Make a list of machines/appliances and the energy they need to run Examine renewable and non-renewable: learners make a list of each 			C5	E3
			<ul style="list-style-type: none"> Watch: https://youtu.be/KEeH4EniM3E Create a poster about one renewable energy source OR: do Activity: "Energy in a Nut" to measure the temp increase in water burning various nuts (use alternative food 	Major	Yes	C1 C5	E1, E4 E3

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		<p>Renewable Energy: Explore the ever-increasing need for clean energy Apply knowledge of renewable energy sources to the real world-hydro power Examine energy transformations</p>	<ul style="list-style-type: none"> Field Trip to the Trevallyn Power Station Or to an alternative site (Or: Create a Stream Turbine in class) 	Major	Yes	C5 C6	E2, E3, E4 E1, E2, E3
Week 8	Physical Sciences	<p>Sound and Light Energy: What is Sound? Identify that sound is a form of Energy Explore how sound is created Examine the structure of the Human Ear Explore how sound is used- ultrasound, sonar, echo location, radar,</p>	<ul style="list-style-type: none"> Discussion on how our ear works to pick up vibrations in the air Examine and label a diagram of the inside of the ear Demo: Show how air particles can be compressed using a can, balloon stretched over one opening and a lit candle Demo: sound waves using an oscilloscope 			C5 C1	E1, E2, E3, E4 E1, E2
		<p>Different Sounds: Explore factors that vary the type of sound produced Recognise that fact that sound needs air</p>	<ul style="list-style-type: none"> Activity: Stations set up around the room with different sound activities (eg tuning fork and water, etc). Learners draw the apparatus and explain what is occurring at each Demo: Phone in a bell jar and remove air 	Major	Yes	C5	E2, E3, E4 E3
		<p>Light Energy: What is Light? Examine the properties of light Record observations Make predictions</p>	<ul style="list-style-type: none"> Brainstorm: why light is important to us/what would happen if we had no light? Discussion about light energy and its properties Discussion white light-spectrum Activity 1: Splitting Light with Ray Boxes and Prisms 			C5	E1, E2, E3, E4
Week 9	Physical Sciences	<p>Refraction and Reflection: Examine how light can be reflected and be refracted Explore issues related to light being refracted Record observations Explore how the lens in our eyes works</p>	<ul style="list-style-type: none"> Discussion- what happens when light hits water, windows, etc Demo: Can light bend? (use a laser and clear plastic tubing with water to demo light bending) 			C5	E2, E3, E4
		<p>Activity: Reflection and Refraction of Light-record observations and draw and label set-up</p>	Major	Yes	C1 C5	E1, E4 E2, E3, E4	
		<p>Eye diagram – difference between being long and short sighted and how this is corrected with glasses/contacts</p>			C6	E1, E2, E3	

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
		Forces, Energy and Motion: What is Force? <i>Identify that forces act on us and everything around us</i> <i>Explore different types of forces</i> <i>Examine what happens when things are subjected to different forces</i>	<ul style="list-style-type: none"> Brainstorm where you have felt or seen forces at work Watch: https://www.youtube.com/watch?v=u0Ko3DbfYZk Discussion of forces- examples of push, pull and twist forces/contact non-contact forces Complete worksheet to identify “push” or “pull” forces 			C5	E2, E3
			<ul style="list-style-type: none"> Activity: Stations set up with different activities for learners to try out using forces. Learners to predict what will happen and draw the set up. 	Major	Yes	C1 C5	E1, E4 E2, E3, E4
		Gravitation Force: <i>Recognise that gravity is a force that affects all things on Earth and tides</i> <i>Explore what happens without gravity</i>	<ul style="list-style-type: none"> Discussion: what is gravity/ how it affects us on Earth Activity: observe what happens when balls of the same size but different mass are dropped from a height? 			C5	E1, E2, E3, E4
Week 10	Physical Sciences	Friction and Motion: <i>Recognise what motion is</i> <i>Explore how different surfaces will impact the speed of an object</i> <i>Predict the surface with least friction</i> <i>Make observations and measurements</i>	<ul style="list-style-type: none"> Discuss how motion occurs due to a force applied to it. 				
			<ul style="list-style-type: none"> Activity: Explore motion on different surfaces 	Major	Yes	C5	E2, E3, E4
		Magnetism: <i>Recognise that magnetic force repels or attracts</i> <i>Explore how magnetic force works</i> <i>Recognise the Earth has a strong magnetic force</i>	<ul style="list-style-type: none"> Discussion- what is magnetic force? Applications of magnets in our lives. Earth’s magnetic field-the importance of this. 			C5 C1	E2, E3 E1
			<ul style="list-style-type: none"> Worksheet: Magnets 				
		<ul style="list-style-type: none"> Activity: Observe the magnetic field of a magnet 	Major	Yes	C5	E2, E3, E4	
Mechanical Force:	<ul style="list-style-type: none"> Discussion: different simple machines are used every day (eg scissors, staplers, pliers, spoons, pulleys, ramps, levers) How these all make our life easier and do the work for us. 			C5	E3		

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
		<p>Investigate forces acting when machines are used</p> <p>Examine how machines have made life more efficient</p>	<ul style="list-style-type: none"> Watch: https://www.youtube.com/watch?v=jtk2V0M6k3M Activity: identify and draw 5 machines set up in classroom Time to organise folio for Work Requirement 1 Presentation of Module 2 folio for Module 2: Work Requirement 2 	Major	Yes	C5	E1, E2, E3
Term 3 Week 1	Module 3 – Scientific Method	<p>Planning an Inquiry:</p> <p>Examine the process of scientific method</p> <p>Identify that we ask questions, then make predictions</p> <p>Writing a Hypothesis:</p> <p>Examine cause and effect</p> <p>Examine what makes a good hypothesis</p> <p>Practice writing hypotheses</p>	<ul style="list-style-type: none"> Discussion on scientific method Watch video: https://study.com/academy/lesson/how-to-write-a-hypothesis-lesson-for-kids.html#lesson Worksheet: arrange the steps of the Scientific method into their correct order Hypothesis practice worksheet 			C1	E1
	Scientific Method	<p>Variables:</p> <p>Independent and Dependent Variables:</p> <p>Explore the meaning of independent and dependent</p> <p>Understand why a control is needed</p> <p>Report Writing:</p> <p>Learners learn different ways to observe, measure and record data.</p>	<ul style="list-style-type: none"> Discuss why we need to create fair experiments. Learners list the factors in a basic experiment example that need to be kept constant Discuss why we need a control Discuss factors we cannot control Discussion of various ways of making observations or measuring and recording results. 			C1	E1
Week 2 - Week 5	Scientific Inquiry	<p>Biological, Earth and Space Sciences</p> <p>Explore ways to communicate scientific knowledge</p> <p>Adapt to changes and solve problems</p> <p>Make predictions</p> <p>Work collaboratively in a group</p> <p>Evaluate results and draw conclusions</p> <p>Reflect on observations and results and suggest improvements</p> <p>Apply theories and models to real life</p>	<ul style="list-style-type: none"> Learners develop a folio of work related to their particular project. Written notes, diagrams or photos during the development/planning stage and throughout the project should be recorded and saved in a document. This can be electronic or in a journal or both. Observations and results should be documented, photographed or videoed to be used as evidence of assessment. How learners present their projects will be as suited to each learner or group, but a 3.5 to 4-minute dialogue about the project and findings needs to be presented to the teacher. Learners need to be able to answer questions about their project-if in a group, all learners need to take a turn in answering. 	Major	Yes	C1 C2 C7 C8	All All All All

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
		<p>Explore examples of technology used in Science</p> <p>Explore and describes uses of technology in the local community</p> <p>Explain how technology has been used to improve our lives</p>	<p>Possible Scientific Inquiry Topics:</p> <p>Learners to pick 1 (or 2 smaller related) projects.</p> <ul style="list-style-type: none"> • Create a terrarium or aquaponic set-up-best plants to use? • Design an experiment that looks at factors that impact plant growth (eg soil type, water, fertilizer, temp, light) • Investigate which agricultural grasses germinate with the least amount of water • Explore what natural substances can be used as dyes • Design a system to record rate of decomposition of different materials-paper, cardboard, compostable garbage bags etc • Observe transpiration in different plants-factors that can affect the rate • Local Ecosystem analysis: Coliform counts before and after rainfall, • pollution survey and other human impacts, species surveys-create a food web, geological survey-rock and soil types, measure tide heights over a 2-week period-does rainfall increase height? • Research floods in Launceston over the past 100 years and how technology has helped alleviate this problem • Create a model of the Earth showing its internal structure • Create a 'working' model volcano showing internal structures • Build a model Solar System- with sun/planets correct proportions and distances • Investigate which common household substances are best at controlling weeds (salt solution, vinegar, hot water) 				
			Assessment of Learner's projects-ongoing throughout the term				

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
Week 6 - Week 10	Scientific Inquiry	<p>Physical and Chemical Sciences</p> <p><i>Explore ways to communicate scientific knowledge</i></p> <p><i>Adapt to changes and solve problems</i></p> <p><i>Make predictions</i></p> <p><i>Work collaboratively in a group</i></p> <p><i>Evaluate results and draw conclusions</i></p> <p><i>Reflect on observations and results and suggest improvements</i></p> <p><i>Apply theories and models to real life</i></p> <p><i>Explore examples of technology used in Science</i></p> <p><i>Explore and describes uses of technology in the local community</i></p> <p><i>Explain how technology has been used to improve our lives</i></p>	<p>Possible Scientific Inquiry Topics:</p> <p>Learners to pick 1 (or 2 smaller) projects that are in some way related to their first project or projects.</p> <ul style="list-style-type: none"> • “Ocean Acidification”/“Acid Rain” investigations on shells/plants/different metals • Test which rocks dissolve the fastest in different acidic solutions • Explore renewable energy sources- design a water wheel/solar powered ‘car’/wind turbine • Build a “machine” to show a change in energy (eg elastic band car, water, wheel, wind turbine, catapult) • Explore uses of Black Light in Forensics • Make a pinhole camera • Record the energy usage in your house for a week • Investigate the most energy efficient appliances for your home • Design a solar still to collect clean water • Investigate which metals rust the fastest in a variety of solutions • Explore the pH of different household products and the impact these have on plant growth • Research how to make bath bombs/soap/cosmetics-(lip gloss) • Test what concentration of salt is needed to stop water from freezing • Investigate which surfaces cause the least amount of friction • Design a pulley to lift a certain weight • Design a bridge out of spaghetti/paddle pop sticks to hold the most amount of weight • Build a catapult to test how far different materials can be “shot” • Design and build an electrical circuit to power a light globe • Design a poster to show where magnets are used in everyday life <p>Assessment of Learners projects-ongoing throughout the term</p>	Major	Yes	C1 C2 C7 C8	All All All All
Term 4 Week 1		Scientific inquiry folio	<p>Finalisation of inquiries</p> <p>Selecting examples from their folio and organising to demonstrate their inquiries</p>	Major	Yes		

Time week	Module Topic	Mapping to course content (subtopic/learning area)	Assessment task/ Activity	Relative Weighting	Work Requirement	Criterion	Criterion Elements
Week 2		Scientific inquiry folio	Selecting examples from their folio and organising to demonstrate their inquiries	Major	Yes	C1 C2 C7 C8	All All All All
Week 3		Scientific Inquiry Presentation	Preparation of multimodal presentations	Major	Yes		
Week 4		Scientific Inquiry Presentation	Delivery of multimodal presentations	Major	Yes	C1 C2 C7 C8	All All All All

CONTACT	years9-12learning@education.tas.gov.au
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