Year 3 Science
Curriculum and assessment plan

ACiQ | v9.0

Example

Level description	Context and cohort considerations
In Year 3 students explore the value of grouping and classifying objects and events based on similarities and differences. In classifying things as living or non-living they begin to recognise that classifications are not always easy to define or apply. Students contrast patterns of growth and change in living things; compare characteristics of soils, rocks and minerals; and classify states of matter. They learn that key processes such as heat transfer can cause predictable change in simple systems. They recognise that change is described and measured in terms of differences over time and begin to quantify their observations to enable comparison. They learn more-sophisticated ways of identifying and representing relationships, including the use of tables and graphs to identify patterns and relationships. They appreciate that science involves conducting fair tests to answer questions or test predictions, and that scientific explanations are based on data. Inquiry questions can help excite students' curiosity and challenge their thinking. Following are examples of inquiry questions that could be used to prompt discussion and exploration: • Do plants, birds and frogs grow up too? • Is soil alive? • Is jelly a liquid or a solid? • Why is a spoon hot in soup and cold in ice cream? • Can you do science without a fair test?	In Year 3, the science curriculum encompasses all four sub-strands of Science understanding, with one lesson per week. This structure gives students opportunities to enhance their scientific literacy and inquiry skills. Building on the biological science sub-strand from Year 1, students will begin conducting fieldwork within their school. **Note:** To ensure safety during outdoor and hands-on activities, explicit instruction on safe practices when working with living things, soils, heat and equipment is essential.

Unit 1 — Nature detectives	Unit 2 — Discovering Earth's treasures	Unit 3 — Keeping it cool	Unit 4 — Matter explorers
Duration: 10 weeks	Duration: 10 weeks	Duration: 10 weeks	Duration: 10 weeks
Exploring local natural environments fosters a sense of curiosity and wonder in the natural world and makes connections with Country/Place location. Students gain a deeper understanding of biological science through hands-on activities and observation. In this unit, students take on the role of young scientists, conducting a field study of two different areas within their school, observing and recording the diverse living organisms present in these areas. Using their observations, students engage in classifying and comparing living and non-living things. They also compare the different life cycles of animals or plants. They employ structured methods for conducting field investigations, developing numeracy skills (such as counting, measurement and data collection and recording) through these various activities. Students collaborate with a partner to discuss and compare their findings between the two areas. They use their data to identify the relationships they observe and develop an understanding of how all life forms are connected. Students are able to recognise that people identify solutions to problems using scientific explanations. They apply this understanding to identify a problem during their field study, and compile a list of recommendations to the school's grounds officer, offering informed suggestions on how to make their area more able to support living things. Sharing their findings with members of the school community develops student community awareness and provides an authentic opportunity to create a text for a purpose.	Healthy soil supports diverse and productive ecosystems by providing essential nutrients, access to water and a habitat for plants and animals. In this unit, students deepen their connection to their school (Country/Place location) by revisiting and re-examining areas previously studied in Unit 1, with a fresh perspective on these areas as vital components of a healthy ecosystem. They explore how Aboriginal peoples and Torres Strait Islander peoples have maintained sustainable relationships with soil, rocks, and minerals for millennia, such as ochre for ceremonial practices, clays for medicinal applications, and specific minerals for tools and trade. By examining and describing the observable characteristics of soils, rocks and minerals found in these areas, students build an understanding of these Earth resources and their importance in both scientific and cultural contexts, highlighting sustainable practices that reflect a respect for the land, such as tenure practices. In this context, students further develop their inquiry skills by using scaffolds to plan a visual soil assessment. They work collaboratively to conduct the assessment, using familiar instruments, such as magnifying glasses, sieves and rulers, to observe, measure and record their data on soil heath in different areas of the school. This allows students to develop explanations and draw conclusions about soil quality, deepening their appreciation for the role of soil in sustaining life. This investigation of their school environment aims to develop students' fieldwork skills and fosters a sense of responsibility and care for the land, connecting students to Aboriginal and Torres Strait Islander ways of knowing and being (responsibility, reciprocity, sustainability, and respect for Country). It reinforces the importance of careful observation and respect for natural resources, demonstrating how both scientific and cultural perspectives contribute to environmental sustainability. Through this process, students develop a deeper appreciation of soil as a vital resource and recognise their role in protecting Earth's treasures for future generations.	Growing awareness of the damage caused by single-use plastics and a heightened sense of environmental responsibility have led to the increased popularity of reusable water bottles. One of the most popular types of reusable water bottles is the insulated bottle, which stands out due to its ability to maintain the temperature of its contents for extended periods. In this unit, students identify sources of heat energy and identify examples of heat transfer. They work collaboratively within designated roles to examine the insulating properties of different containers, explaining changes in temperature. Building on this understanding, they employ critical and creative thinking skills to plan and conduct a fair test to investigate the effectiveness of different insulated bottles in keeping liquids cold. Students consider safety when planning an investigation involving cold liquids. They apply numeracy skills in a practical context when measuring temperature changes using thermometers and record and organise this data in a display. Students explain which water bottle was the best at keeping the water cold and how they used their data to support their conclusions. Following their investigation, students recognise that having an understanding of insulation helps them make informed choices when selecting a water bottle for their personal use, as well as recognising that this knowledge can have practical applications in everyday life, such as keeping themselves cool in summer, or warm in winter. By exploring these concepts, students gain valuable insight into how science impacts their daily lives.	Understanding the observable properties of solids and liquids lays the groundwork for understanding more complex scientific concepts. It helps students grasp the nature of matter and its different forms. This unit focuses on helping students understand the fundamental concepts of classifying matter as solids or liquids based on their observable properties. Students examine substances, such as water, butter, and chocolate, to describe the processes that lead to changes in state, such as, melting and freezing. Participating in hands-on activities that investigate the changing states of various materials, gives students opportunities to explore how these different materials respond to temperature changes, and understand how heat energy changes the state of matter. By comparing their recorded data, students identify patterns such as, the relationship between temperature and change of state (e.g. that some solids melt when heated, and some liquids freeze when cooled) deepening their understanding of these concepts. Students develop critical and creative thinking skills through applying their knowledge of changes of state investigated in class to a new context provided in a supervised assessment.

	Unit 1 – Nature detectives		Unit 2 – Discovering Earth's treasures		Unit 3 – Keeping it cool		Unit 4 – Matter explorers	
	Assessment — Biodiversity in action!	**Timing**	**Assessment — Soil sleuths**	**Timing**	**Assessment — Chill masters**	**Timing**	**Assessment — Matter quest**	**Timing**
Assessment	Students use data previously collected from a biodiversity field study to classify things as living or non-living. Working in pairs, they make comparisons about life cycles. They identify relationships between the environments and the living things found there, presenting suggestions to the school about ways to enhance an environment for plants and animals. **Technique:** • Investigation **Mode:** • Multimodal presentation **Conditions:** • group work • presentation slide template provided • spoken/signed response up to 1 minute	Term 1 Week 9	Students use instruments, such as magnifying glasses, sieves and rulers to conduct a visual soil assessment, to describe the observable properties of soils, rocks and minerals in an area of the school grounds. They use data collected from their soil assessment to draw conclusions about the health of the area, and describe the importance of soils, rocks and minerals as resources, relative to their studied area. **Technique:** • Experimental investigation **Mode:** • Written **Conditions:** • group work to collect data • individual response • response booklet provided • written response 100–200 words	Term 2 Week 9	Students respond to a scenario to identify sources of heat energy and examples of heat transfer. They use primary data from a fair test to explain changes in temperature and assess the effectiveness of various insulated bottles in keeping liquids cold. They use their conclusions to determine which water bottle would be fit for purpose. **Technique:** • Experimental investigation **Mode:** • Written **Conditions:** • individual response • response booklet provided • written response 100–200 words	Term 3 Week 9	Students observe a variety of materials and classify them as either solids or liquids, listing their observable properties related to state. They describe processes that can cause changes of state. Students pose a question that could be used to explore patterns about changes of state and identify patterns in provided data about how changes of state occur under different conditions. **Technique:** • Supervised assessment **Mode:** • Written **Conditions:** • individual response • up to 30 minutes, plus 10 minutes perusal and/or planning time • short responses up to 25 words	Term 4 Week 8
Achievement standard	By the end of Year 3 students classify and compare living and non-living things and different life cycles. They describe the observable properties of soils, rocks and minerals and describe their importance as resources. They identify sources of heat energy and examples of heat transfer and explain changes in the temperature of objects. They classify solids and liquids based on observable properties and describe how to cause a change of state. They describe how people use data to develop explanations. They identify solutions that use scientific explanations. Students pose questions to explore patterns and relationships and make predictions based on observations. They use scaffolds to plan safe investigations and fair tests. They use familiar classroom instruments to make measurements. They organise data and information using provided scaffolds and identify patterns and relationships. They compare their findings with those of others, explain how they kept their investigation fair, identify further questions and draw conclusions. They communicate ideas and findings for an identified purpose, including using scientific vocabulary when appropriate.		By the end of Year 3 students classify and compare living and non-living things and different life cycles. They describe the observable properties of soils, rocks and minerals and describe their importance as resources. They identify sources of heat energy and examples of heat transfer and explain changes in the temperature of objects. They classify solids and liquids based on observable properties and describe how to cause a change of state. They describe how people use data to develop explanations. They identify solutions that use scientific explanations. Students pose questions to explore patterns and relationships and make predictions based on observations. They use scaffolds to plan safe investigations and fair tests. They use familiar classroom instruments to make measurements. They organise data and information using provided scaffolds and identify patterns and relationships. They compare their findings with those of others, explain how they kept their investigation fair, identify further questions and draw conclusions. They communicate ideas and findings for an identified purpose, including using scientific vocabulary when appropriate.		By the end of Year 3 students classify and compare living and non-living things and different life cycles. They describe the observable properties of soils, rocks and minerals and describe their importance as resources. They identify sources of heat energy and examples of heat transfer and explain changes in the temperature of objects. They classify solids and liquids based on observable properties and describe how to cause a change of state. They describe how people use data to develop explanations. They identify solutions that use scientific explanations. Students pose questions to explore patterns and relationships and make predictions based on observations. They use scaffolds to plan safe investigations and fair tests. They use familiar classroom instruments to make measurements. They organise data and information using provided scaffolds and identify patterns and relationships. They compare their findings with those of others, explain how they kept their investigation fair, identify further questions and draw conclusions. They communicate ideas and findings for an identified purpose, including using scientific vocabulary when appropriate.		By the end of Year 3 students classify and compare living and non-living things and different life cycles. They describe the observable properties of soils, rocks and minerals and describe their importance as resources. They identify sources of heat energy and examples of heat transfer and explain changes in the temperature of objects. They classify solids and liquids based on observable properties and describe how to cause a change of state. They describe how people use data to develop explanations. They identify solutions that use scientific explanations. Students pose questions to explore patterns and relationships and make predictions based on observations. They use scaffolds to plan safe investigations and fair tests. They use familiar classroom instruments to make measurements. They organise data and information using provided scaffolds and identify patterns and relationships. They compare their findings with those of others, explain how they kept their investigation fair, identify further questions and draw conclusions. They communicate ideas and findings for an identified purpose, including using scientific vocabulary when appropriate.	
Moderation	**Calibration:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.		**Consensus:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.		**Expert:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.		**Calibration:** Refer to QCAA moderation advice on the QCAA website under the Assessment tab in the learning area.	

Content descriptions	Units				Content descriptions	Units				Content descriptions	Units			
Science understanding	**1**	**2**	**3**	**4**	**Science as a human endeavour**	**1**	**2**	**3**	**4**	**Science inquiry**	**1**	**2**	**3**	**4**
Biological sciences compare characteristics of living and non-living things and examine the differences between the life cycles of plants and animals AC9S3U01	☑	☐	☐	☐	**Nature and development of science** examine how people use data to develop scientific explanations AC9S3H01	☐	☑	☑	☐	**Questioning and predicting** pose questions to explore observed patterns and relationships and make predictions based on observations AC9S3I01	☐	☐	☑	☑
Earth and space sciences compare the observable properties of soils, rocks and minerals and investigate why they are important Earth resources AC9S3U02	☐	☑	☐	☐	**Use and influence of science** consider how people use scientific explanations to meet a need or solve a problem AC9S3H02	☑	☐	☑	☐	**Planning and conducting** use provided scaffolds to plan and conduct investigations to answer questions or test predictions, including identifying the elements of fair tests, and considering the safe use of materials and equipment AC9S3I02	☐	☑	☑	☐
Physical sciences identify sources of heat energy and examine how temperature changes when heat energy is transferred from one object to another AC9S3U03	☐	☐	☑	☐						follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital tools as appropriate AC9S3I03	☐	☐	☑	☐
Chemical sciences investigate the observable properties of solids and liquids and how adding or removing heat energy leads to a change of state AC9S3U04	☐	☐	☐	☑						**Processing, modelling and analysing** construct and use representations, including tables, simple column graphs and visual or physical models, to organise data and information, show simple relationships and identify patterns AC9S3I04	☑	☑	☐	☑
										Evaluating compare findings with those of others, consider if investigations were fair, identify questions for further investigation and draw conclusions AC9S3I05	☑	☑	☑	☐
										Communicating write and create texts to communicate findings and ideas for identified purposes and audiences, using scientific vocabulary and digital tools as appropriate AC9S3I06	☑	☐	☐	☑

General capabilities	Units			
	1	**2**	**3**	**4**
Critical and creative thinking	☐	☐	☑	☑
Digital literacy	☐	☐	☐	☐
Ethical understanding	☐	☐	☐	☐
Intercultural understanding	☐	☐	☐	☐
Literacy	☑	☑	☐	☐
Numeracy	☑	☐	☑	☐
Personal and social capability	☑	☑	☐	☐

Cross-curriculum priorities	Units			
	1	**2**	**3**	**4**
Aboriginal and Torres Strait Islander histories and cultures	☐	☑	☐	☐
Asia and Australia's engagement with Asia	☐	☐	☐	☐
Sustainability	☑	☑	☐	☐