Year 1 unit overview — Australian Curriculum: Science

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum v3.0: Science for Foundation–10* <www.australiancurriculum.edu.au/Science/Curriculum/F-10>.

| School name | Unit title | Duration of unit |
| --- | --- | --- |
| Our School | Changes around me | One term |

| Unit outline |
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| Comparing day and night, children investigate observable changes occurring in the sky and landscape.Questions which shape the inquiry include: * What can I observe in the sky and landscape during the night?
* What can I observe in the sky and landscape during the day?
* What do I need to find out?
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| Identify curriculum |
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| Content descriptions to be taught | General capabilities and cross‑curriculum priorities |
| Science Understanding | Science as a Human Endeavour | Science Inquiry Skills |
| Earth and space sciences* [Observable](http://www.australiancurriculum.edu.au/Glossary?a=S&t=Observable) changes occur in the sky and landscape [(ACSSU019)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU019)
 | Nature and development of science* Science involves asking questions about, and describing changes in, objects and events [(ACSHE021)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE021)

Use and influence of science* People use science in their daily lives, including when caring for their [environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=environment) and living things [(ACSHE022)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE022)
 | Questioning and predicting* Respond to and pose questions, and make predictions about [familiar](http://www.australiancurriculum.edu.au/Glossary?a=S&t=familiar) objects and events [(ACSIS024)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS024)

Processing and analysing data and information* Use a range of methods to sort information, including drawings and provided tables [(ACSIS027)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS027)
* Through discussion, compare observations with predictions [(ACSIS212)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS212)

Communicating* Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play [(ACSIS029)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS029)
 | Description: gc_literacy Literacy* Add labels and captions to drawings
* Give an oral report
* Listen and respond
* Develop and use topic vocabulary

Description: gc_numeracy Numeracy* Interpret data

Description: gc_critical Critical and creative thinking* Show reasoning to measure and compare capacities

Description: gc_ethical Ethical behaviour* Consider living things in the environment when making observations

Description: gc_personal_social Personal and social capability* Develop communication skills for communicating ideas

 Aboriginal and Torres Strait Islander histories and cultures* Demonstrate alternative ways of knowing and sharing

Description: cc_sust Sustainability* Exploreconnections between our actions when making observations and the impact on the environment
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| Identify curriculum |
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| Achievement standard |
| By the end of Year 1, students describe objects and events that they encounter in their everyday lives, and the effects of interacting with [materials](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials) and objects. They identify a range of habitats. They describe changes to things in their [local environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=local+environment) and suggest how science helps people care for environments. Students make predictions, and investigate everyday phenomena. They follow instructions to record and sort their observations and share their observations with others. |
| Relevant prior curriculum | Curriculum working towards |
| In the Australian Curriculum: Science at FoundationScience UnderstandingEarth and space sciences* Daily and seasonal changes in our [environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=environment), including the weather, affect everyday life.

Science as a Human EndeavourNature and development of science* Science involves exploring and observing the world using the [senses](http://www.australiancurriculum.edu.au/Glossary?a=S&t=senses).

Science Inquiry SkillsQuestioning and predicting* Respond to questions about [familiar](http://www.australiancurriculum.edu.au/Glossary?a=S&t=familiar) objects and events.

Planning and conducting* Explore and make observations by using the [senses](http://www.australiancurriculum.edu.au/Glossary?a=S&t=senses).

Processing and analysing data and information* Engage in discussions about observations and use methods such as drawing to represent ideas.

Communicating* Share observations and ideas.
 | In the Australian Curriculum: Science at Year 2Science UnderstandingEarth and space sciences* Earth’s resources, including water, are used in a variety of ways.

Science as a Human Endeavour* The content descriptions for Science as a Human Endeavour are the same for Year 1 and Year 2.

Science Inquiry Skills* The content descriptions for Science Inquiry Skills are the same for Year 1 and Year 2.
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| Bridging content |
| Both the **Australian Curriculum: Science at Foundation** and the **Year 1 Learning Statements** focus on observable changes in the sky and on Earth. Both the **Australian Curriculum: Science at Year 1** and the **Year 3 Essential Learnings** address recurring patterns and observable cycles in the sky and landscape. |

| Identify curriculum |
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| Links to other learning areas |
| In the Australian Curriculum: English at Year 1* Engage in conversations and discussions, using active listening behaviours, showing interest, and contributing ideas, information and questions.
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| Assessment | Make judgments |
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| Describe the assessment | Assessment date | Teachers gather evidence to make judgments about the following characteristics of children’s work:**Understanding*** description and identification of interactions and changes involving living things using scientific knowledge
* use of scientific knowledge to explain a situation
* identification of the use of science in daily life

**Skills*** collection and recording of observations in guided investigations
* sort and compare observations
* representation and communication of observations and ideas.

For further advice and guidelines on constructing guides to making judgments refer to the Learning area standard descriptors: [www.qsa.qld.edu.au](http://www.qsa.qld.edu.au) |
| Children are given opportunities to demonstrate their knowledge, skills and understanding through both formative and summative assessment. The assessment is collated in assessment folios and allows for ongoing feedback to children on their learning.Year 1 teachers make decisions about the length of time required to complete the tasks and the conditions under which the assessment is to be conducted.The teaching and learning experiences throughout the term provide opportunities for children to develop the understanding and skills required to complete these assessments. As children engage with these learning experiences, the teacher can provide feedback on specific skills. |  |
| **Collection of work (Written)** Children explain their understanding and thinking as they participate in learning experiences. The teacher records observations of children and determines their individual needs for exploring and developing knowledge, skills and processes associated with this area of science. The sequence of teaching and learning allows opportunities to gather evidence within:* responding
* one-to-one conferencing (discussion circles) where children discuss and explain
* verbal reporting to the group on their own and others’ thinking
* class or group discussion about ideas
* drawing of concept maps.

Suggested conditions:* open/supervised.
 | Throughout the term |

| Assessment | Make judgments |
| --- | --- |
| **Experimental investigation: Recorded observations (Multimodal)**Children write captions and label diagrams under the heading of the two inquiry questions:* What can I observe in the sky and landscape during the night?
* What can I observe in the sky and landscape during the day?

Teachers ask:* What changes between night and day?

Children demonstrate what they know and understand in this open-ended activity through their diagrams of observations made during the day and night which are annotated with captions and labels. They conference with the teacher who prompts for further elaborations and demonstrations of understanding.Suggested conditions:* open/supervised.
 | Week 8 |  |

| Teaching and learning | Supportive learning environment |
| --- | --- |
| Teaching strategies and learning experiences | Adjustments for needs of learners | Resources |
| This unit overview has been developed using the 5E inquiry model for teaching and learning science. The 5E model follows a sequence of:* Engage — begin with a lesson that captures children’s interest through an activity or question.
* Explore — organise hands-on activities where children explore a concept or skill.
* Explain — guide children to develop explanations for the experience after they have explored a concept or skill.
* Elaborate — encourage children to apply what they have learnt to a new situation.
* Evaluate — provide an opportunity for children to review and reflect on their learning.

Engage * Establish a purpose for investigating the observable changes occurring in the sky and landscape and establish the inquiry questions.
* Discuss answers to the questions: What can you observe in the night sky and landscape? What can you observe in the sky and landscape during the day?
* Set a real-life context by discussing personal experiences which prompts children to respond with their own experiences, e.g. When I looked up at the sky last night I … Why do you think that was?
* Investigate the observable changes occurring in the sky and landscape by collaboratively creating a class concept map using what children know about the night/day sky and landscape:
* individual children create a concept map about what they know about the night/day sky and landscape.
* children share with another child who has drawn a picture about the same topic/concept. They may share a number of times.
* each group reports back to the whole class on their topic/concept.
* Write questions about what we would like to find out about changes that occur in the sky and landscape, e.g. Where does the sun/moon go at night/day? What animals come out at night? Where do the flowers go at night?
* Read and discuss literary texts about the sky, e.g. Eric Carle — *Papa, Please Get the Moon for Me* and develop a set of questions to investigate.
* View online educational websites and develop a range of key questions for investigating.

Explore* Source interactive websites that view the sky at night and during the day.
* Monitor the changes in the *sky* by establishing a monitoring framework and timetable where the children will record drawings and annotations of observable changes in the sky and how the changes are felt through the senses, e.g. colour, temperature, wind, rain, cloud cover; what I see, hear, smell, touch.
* Establish a Phases of the moon recording tool for children to complete over time. This may be done each night at home with a follow-up at school each day by referring to the newspaper or calendar to get the shape right. Read and view a range of sources that explain these phenomena.
* Track the sun throughout the day and discuss and explore what happens to it. Relate these findings to a range of information sources.
* Locate the Southern Cross constellation and observe its movement in the sky over time.
* Explore Aboriginal and Torres Strait Islander stories about the formation of the stars.
* Connect with local Aboriginal and Torres Strait Islander groups to find out about any significant shapes in the sky that are of importance to them. The stories behind these shapes should also be told.
* Organise a viewing night to enable children to look at the moon and the stars in the expanse of the night sky.
* Monitor the changes in the *landscape* by establishing a monitoring framework and timetable where the children will record drawings and annotations of observable changes in the landscape and how changes are felt through the senses e.g. colour, temperature, wind, rain, cloud cover; what I see, hear, smell, touch.
* Explore the animals we see at night and during the day and begin to investigate why some animals only appear at night.
* Explore how plants behave during the day and at night. Predict why flowers may fold at night and confirm predictions using a range of sources.
* Discuss common daily routines that are predictable to the sun rising and the moon setting.
* Create stories about how the stars form particular shapes, e.g. using stories from Aboriginal and Torres Strait Islander peoples about the changes in the phases of the moon.

Explain* Review initial questions created in the “engage” phase of learning to explore focused explanations.
* Answer the questions: What can you observe in the sky and landscape during the night/day? Use:
* discussion circles — arrange children into two circles (inner and outer) so that each child has a partner. Pose a question. Nominate who speaks first and who listens first and then, on a signal, have them swap roles. Children report back on what they or their partners have said. Move to another partner and pose another question. Explain and listen again and report back to the group
* explanations in children’s own words
* reading texts and YouTube videos that answer the question/s
* online inquiries to answer the question/s.

Elaborate* Explore and discuss how generations of people have been interested in the sky.
* Read and view a range of texts.
* Investigate how to demonstrate the phases of the moon using a tennis ball as the moon and a torch as the sun. Children demonstrate their understanding to the teacher who makes a note of the level of understanding demonstrated by each child. The teacher may prompt children to show the phases, e.g. new, crescent, quarter, gibbous, full moon.
* Record the constant cycle of the phases of the moon in their science journal. Use labels, diagrams and captions to explain how it works.

Evaluate* Complete the diagrams, captions and labels assessment.
* Observe changes that occur in the sky and landscape.
* Draw two diagrams with labels and captions to respond to the inquiry questions:
* What can I observe in the night sky and landscape?
* What can I observe in the sky and landscape during the day?
* Conference with the teacher to discuss their representations and respond to prompts for further clarification of understanding.
* Ask: What changes between night and day?
* Ask: How does day and night affect the things we do in our everyday life?
 | Section 6 of the *Disability Standards for Education* (The Standards for Curriculum Development, Accreditation and Delivery) state that education providers, including class teachers, must take reasonable steps to ensure a course/program is designed to allow any student to participate and experience success in learning. The *Disability Standards for Education 2005* (Cwlth) is available from: <www.ag.gov.au> select Human rights and anti-discrimination > Disability standards for education. | Web* websites for factsheets, interactive worksheets
* websites to explore the sun, moon and stars

Print* worksheets
* word wall
* range of literary and non‑literary texts to read and view
* newspapers

Equipment* paper, crayons, pencils
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| Use feedback |
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| Ways to monitor learning and assessment | Teachers collaboratively plan the teaching, learning and assessment to meet the needs of all learners.Teachers create opportunities for discussion about levels of achievement to develop shared understanding, co-mark or cross-mark at key points to ensure consistency of judgments, and participate in moderating samples of children’s work at school or cluster level to reach consensus and consistency. |
| Feedback to students | Teachers plan opportunities and ways to provide ongoing feedback (both written and informal) and encouragement to children on their strengths and areas for improvement.Children reflect on and discuss with their teachers or peers what they can do well and what they need to improve.Teachers reflect on and review learning opportunities to incorporate specific learning experiences and provide multiple opportunities for children to experience, practise and improve. |
| Reflection on the unit plan | At the conclusion of the unit, all teachers who have been involved in planning, teaching, learning and assessment come together to reflect on the successes and challenges of the unit. They come with their personal reflections through answers to the following questions:* What worked well in this unit?
* What was a stumbling block?
* How would you refine it?
* What trends and gaps in learning have you identified?
* How will you build on these learning experiences next term and beyond?
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