Australian Curriculum V9.0 Alignment • Year 5 • Light imitates art

**Year 5**

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| **Science understanding core concept:** Energy can be transferred and transformed from one form to another and is conserved within systems. |
| **Sub-strand** | **Content descriptor** | **AC code** | **Achievement Standard** | **How the sequence addresses this content** |
| SHE: Nature and development of science | Examine why advances in science are often the result of collaboration or build on the work of others. | AC9S5H01 | Describe examples of collaboration leading to advances in science, and scientific knowledge that has changed over time. | Explore how and why scientists create standards instruments and scales of measurement, specifically the use of light meters. (Lesson 4) |
| SHE: Use and influence of science | Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions. | AC9S5H02 | Identify examples where scientific knowledge informs the actions of individuals and communities. | Examine how reflection is used to convey information to motorists in emergency situations. (Lesson 4)Consider how people use and manipulate light for their own purposes. (Lessons 1-8) |
| SU: Physical sciences | Identify sources of light, recognise that light travels in a straight path and describe how shadows are formed and light can be reflected and refracted | AC9S5U03 | They identify sources of light and model the transfer of light to explain observed phenomena. | Identify and categorise sources of light. (Lessons 1, 2)Identify that light travels in straight lines. (Lesson 2, 3)Determine how the path of light can be changed when it hits a reflective surface. (Lesson 3)Explore how shadows are formed when light hits opaque surfaces (Lesson 4), and how the size and shape of shadows can be manipulated. (Lessons 4, 5)Explores how light can be refracted. (Lesson 6) |
| SI: Questioning and predicting | Pose investigable questions to identify patterns and test relationships and make reasoned predictions. | AC9S5I01 | Plan safe investigations to identify patterns and relationships and make reasoned predictions.   | Poses investigable questions relating to light. (Lessons 2-7)Makes predictions about what might happen when light hits reflective (Lesson 3), opaque (Lessons 4, 5), transparent and translucent (Lesson 3) materials. |
|  SI: Planning and conducting  | Plan and conduct repeatable investigations to answer questions, including, as appropriate, deciding the variables to be changed, measured and controlled in fair tests; describing potential risks; planning for the safe use of equipment and materials; and identifying required permissions to conduct investigations on Country/Place. | AC9S5I02 | Identify risks associated with investigations and key intercultural considerations when planning field work. They identify variables to be changed and measured. | Plan and conduct a fair test investigation to determine variables that can affect the height of a shadow. (Lesson 5) |
| SI: Planning and conducting | Use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate. | AC9S5I03 | Use equipment to generate data with appropriate precision. | Uses appropriate measurement tools to measure the length/height of shadows accurately. (Lesson 5) |
| SI: Processing, modelling and analysing | Construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and information and describe patterns, trends and relationships. | AC9S5I04 | Construct representations to organise data and information and describe patterns, trends and relationships. | Construct ray diagrams to show the path of light (Lessons 2, 3), what happens when shadows are formed (Lessons 4, 5), what happens when light is refracted (Lesson 6).Construct data tables and graphs to record and analyse data regarding shadow height. (Lesson 5) |
| SI: Evaluating | Compare methods and findings with those of others, recognise possible sources of error, pose questions for further investigation and select evidence to draw reasoned conclusions. | AC9S5I05 | Compare their methods and findings to those of others, identify possible sources of error in their investigation, pose questions for further investigation and draw reasoned conclusions. | Uses finding from previous tests to inform choices for subsequent testing of materials. (Lessons 3, 4) |
| SI: Communicating | Write and create texts to communicate ideas and findings for specific purposes and audiences, including selection of language features, using digital tools as appropriate. | AC9S5I06 | Use language features that reflect their purpose and audience when communicating their ideas and findings. | Create a labelled plan of a light sculpture/artwork, explaining how the light is used to create desired effects. (Lesson 8) |