

# Teacher Lesson Guide

## Block by Block - Building a sustainable future

### The important stuff

| This lesson was designed for                                                                                                         |           | Total content duration                                                                                                                                               |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Target audience                                                                                                                      | Year 7-12 | Total content duration                                                                                                                                               | 50-75 minutes                          |
| Curriculum links also for                                                                                                            |           | This unit contains                                                                                                                                                   | Duration                               |
| Science as a Human Endeavour                                                                                                         | Year 7-10 | Activity Video                                                                                                                                                       | Total video 09:30 min                  |
| Science Inquiry                                                                                                                      | Year 7-10 | Activity                                                                                                                                                             | 50-75 min min<br>(includes video time) |
| Detailed curriculum code alignment for ACARA v9 is available in the <a href="#">Curriculum Alignment</a> section of this unit guide. |           | Check the timing and notes of these activities and find links to all of the individual resources in the <a href="#">Lesson Breakdown</a> section of this unit guide. |                                        |

### An overview of the lesson

In this lesson, students challenge common perceptions of sustainability by placing them in the role of an energy company. Appropriate for year 7-10 students focussing on addressing General Capabilities and Cross Curriculum Priorities, this lesson is also appropriate for year 11 and 12 students to explore careers in science.

During the activity, student groups manage limited resources by allocating 20 blocks across 13 sustainability topics, forcing them to navigate competing priorities and trade-offs. The activity incorporates a mid-session "curve ball" scenario, which compels students to re-evaluate their strategies in response to new information, highlighting the difference between personal ethics and corporate decision-making. The lesson strengthens students' critical thinking and their ability to justify evidence-based decisions in complex, real-world contexts and reference the relationship between societal, cultural and scientific contexts.

[Suggested prior knowledge](#)

[Find detail on ideas discussed in this unit](#)

## Lesson breakdown

| Activity timing and delivery guide |           |                              |                                                                    |
|------------------------------------|-----------|------------------------------|--------------------------------------------------------------------|
| Order                              | Duration  | Activity description         | Notes                                                              |
| 1                                  | 06 min    | Watch video introduction     | Introduce the idea of sustainability for a company using the video |
| 2                                  | 25-35 min | Part 1: Allocating resources | Allocate resources and discuss decision making                     |
| 3                                  | 20-30 min | Part 2: The Curve Ball       | Reallocate resources and discuss decision making                   |
| 4                                  | 10 min    | Reflection                   | Reflect on how perceptions of sustainability have changed          |

| For this lesson you will need |                                                                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Teaching resources            |                                                                                                                                                                       |
| Video                         | <a href="#">Block by Block: Building a sustainable future</a>                                                                                                         |
| Activity guide                | <a href="#">Teacher Practical Guide: Block by Block: Building a sustainable future Curve Ball Scenarios sheet</a> - print one sided and cut into individual scenarios |
| Student resources             |                                                                                                                                                                       |
| Activity Instructions         | <a href="#">Student Activity Sheet Sustainability Decision making sheet</a><br>(1 per group - print one sided, A3)                                                    |
| Activity Materials            | 20 blocks (counters/tokens) per group of 3<br>1 Curve Ball scenario per group<br>Note taking book/paper<br>pencils                                                    |

## Key themes and ideas

### Suggested prior knowledge before this lesson

- **Understanding Energy Systems:** Students should be familiar with the interconnected nature of Earth's systems (geosphere, biosphere, hydrosphere, and atmosphere) and how these relate to energy generation and resource management. They should understand that sustainability extends beyond simple climate action or recycling to include broad environmental, social, and economic factors.
- **Societal Influence on Science:** Students should have a basic understanding of how societal values, needs, and ethics influence the focus and adoption of scientific research and technological developments. This provides the necessary context for the "curve ball" scenarios that introduce new, conflicting priorities
- **Decision-Making and Trade-offs:** Students should be comfortable with the concept of evaluating competing priorities, specifically recognising that resources (time, funding, commitment) are limited and that choosing to prioritise one issue (e.g., water management) may require deprioritising others.
- **Science as a Human Endeavour**
  - [\[AC9S7H03\]](#)/[\[AC9S8H03\]](#): Examine how proposed scientific responses to contemporary issues may impact on society and explore ethical, environmental, social and economic considerations.
  - [\[AC9S9H04\]](#)/[\[AC9S10H04\]](#): Examine how the values and needs of society influence the focus of scientific research.
- **Cross-Curriculum Priorities (Sustainability)**
  - [\[SS1\]](#) & [\[SS2\]](#): Understand that all life forms depend on Earth's systems and that sustainable patterns of living require the responsible use of resources and preservation of healthy environments.
  - [\[SD3\]](#): Recognise that sustainable design requires balanced judgements based on projected environmental, social, and economic impacts.

### Within this unit, students will explore

- **Expanding sustainability definitions:** Students challenge the narrow perception that sustainability is strictly limited to climate and recycling. They explore the wide range of considerations companies must address to be truly sustainable.
- **Prioritising resources:** Students act as an energy company to analyse and allocate limited time, commitment, and funding. They must determine which issues receive the most action and attention based on company objectives.
- **Adapting to change:** Students analyse how their decisions impact different scenarios when a "curve ball" is introduced mid-activity. They practice re-evaluating their strategies and re-allocating resources in response to new information and responses to social, cultural and political pressures.
- **Enhancing critical decision-making:** This practical activity builds essential awareness of sustainability pressures and strengthens students' critical thinking skills. It highlights the differences between personal ethics and business-focused decision-making.

# Curriculum alignment

## Years 7 & 8

| Science understanding             |                                                                                                                                                                                                                                        |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Science as a human endeavour      |                                                                                                                                                                                                                                        |
| Nature and development of science | <a href="#">AC9S7H02/AC9S8H02</a><br>investigate how cultural perspectives and world views influence the development of scientific knowledge                                                                                           |
| Use and influence of science      | <a href="#">AC9S7H03/AC9S8H03</a><br>examine how proposed scientific responses to contemporary issues may impact on society and explore ethical, environmental, social and economic considerations                                     |
| Science inquiry                   |                                                                                                                                                                                                                                        |
| Evaluating                        | <a href="#">AC9S7I07/AC9S8I07</a><br>construct evidence-based arguments to support conclusions or evaluate claims and consider any ethical issues and cultural protocols associated with using or citing secondary data or information |

## Years 9 & 10

| Science understanding        |                                                                                                                                                                                                                                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Science as a human endeavour |                                                                                                                                                                                                                                                                                 |
| Use and influence of science | <a href="#">AC9S9H04/AC9S10H04</a><br>examine how the values and needs of society influence the focus of scientific research                                                                                                                                                    |
| Science inquiry              |                                                                                                                                                                                                                                                                                 |
| Evaluating                   | <a href="#">AC9S9I07/AC9S10I07</a><br>construct arguments based on analysis of a variety of evidence to support conclusions or evaluate claims, and consider any ethical issues and cultural protocols associated with accessing, using or citing secondary data or information |

## All year level curriculum areas in focus

| Science Learning Area                                                                   | Cross curriculum priorities                                                                                                                                                                                                                                                                                                                                                                                                                       | General capabilities                                                                                                                                                    |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key ideas                                                                               | Sustainability                                                                                                                                                                                                                                                                                                                                                                                                                                    | Critical and Creative Thinking                                                                                                                                          |
| <ul style="list-style-type: none"> <li>Stability and change</li> <li>Systems</li> </ul> | <p><b>Systems:</b><br/> <b>SS2:</b> Sustainable patterns of living require the responsible use of resources, maintenance of clean air, water and soils, and preservation or restoration of healthy environments.</p>                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li><a href="#">Analysing</a></li> <li><a href="#">Reflecting</a></li> </ul>                                                         |
|                                                                                         | <p><b>World Views</b><br/> <b>SW1:</b> World views that recognise the interdependence of Earth's systems, and value diversity, equity and social justice, are essential for achieving sustainability.</p>                                                                                                                                                                                                                                         | <p><b>Ethical understanding</b></p>                                                                                                                                     |
|                                                                                         | <p><b>SW2:</b> World views are formed by experiences at personal, local, national and global levels, and are linked to individual, community, business and political actions for sustainability.</p>                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li><a href="#">Understanding ethical concepts and perspectives</a></li> <li><a href="#">Responding to ethical issues</a></li> </ul> |
|                                                                                         | <p><b>Futures</b><br/> <b>SF1:</b> Sustainable futures are achieved through informed individual, community, business and political action that values local, national and global equity and fairness across generations into the future.</p>                                                                                                                                                                                                      | <p><b>Intercultural understanding</b></p>                                                                                                                               |
|                                                                                         | <p><b>Aboriginal and Torres Strait Islander Histories and Cultures</b></p>                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li><a href="#">Reflecting on culture and cultural diversity</a></li> </ul>                                                          |
|                                                                                         | <p><b>Country/Place</b><br/> <b>A_TSICP1</b><br/>           First Nations communities of Australia maintain a deep connection to, and responsibility for, Country/Place and have holistic values and belief systems that are connected to the land, sea, sky and waterways.</p>                                                                                                                                                                   | <p><b>Literacy</b></p>                                                                                                                                                  |
|                                                                                         | <p><b>Culture</b><br/> <b>A_TSIC1</b><br/>           First Nations Australian societies are diverse and have distinct cultural expressions such as language, customs and beliefs. As First Nations Peoples of Australia, they have the right to maintain, control, protect and develop their cultural expressions, while also maintaining the right to control, protect and develop culture as Indigenous Cultural and Intellectual Property.</p> | <p><b>Personal and social capability</b></p>                                                                                                                            |
|                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li><a href="#">Social awareness</a></li> <li><a href="#">Social management</a></li> </ul>                                           |