# Curriculum Alignment Plan

## FUELLING A HYDROGEN FUTURE: STEM SKILLS FOR SECONDARY LEARNING (YEAR 8)

This curriculum alignment plan for Fuelling a Hydrogen Future: STEM Skills for Secondary Learning is based on the Australian Curriculum, Assessment and Reporting Authority (ACARA) Version 9.0 for Year 7.

### LEARNING AREAS

- Science
- Design and Technologies
- Digital Technologies
- Economics and Business

### SCIENCE CONTENT DESCRIPTORS

*Physical sciences*

- Classify different types of energy as kinetic or potential and investigate energy transfer and transformations in simple systems (AC9S8U05)

*Chemical sciences*

- Classify matter as elements, compounds or mixtures and compare different representations of these, including 2-dimensional and 3-dimensional models, symbols for elements and formulas for molecules and compounds (AC9S8U06)
- Compare physical and chemical changes and identify indicators of energy change in chemical reactions (AC9S8U07)

*Use and influence of science*

- Examine how proposed scientific responses to contemporary issues may impact on society and explore ethical, environmental, social and economic considerations (AC9S8H03)

*Communicating*

- Write and create texts to communicate ideas, findings and arguments for specific purposes and audiences, including selection of appropriate language and text features, using digital tools as appropriate (AC9S8I08)

### DESIGN AND TECHNOLOGIES CONTENT DESCRIPTORS

*Technologies and society*

- Analyse how people in design and technologies occupations consider ethical and sustainability factors to design and produce products, services and environments (AC9TDE8K01)
- Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures (AC9TDE8K02)

*Technologies context: Engineering principles and systems*

- Analyse how force, motion and energy are used to manipulate and control engineered systems (AC9TDE8K03)

### DIGITAL TECHNOLOGIES CONTENT DESCRIPTOR

*Investigating and defining*

- Define and decompose real-world problems with design criteria and by creating user stories (AC9TDI8P04)

### ECONOMICS AND BUSINESS CONTENT DESCRIPTOR

*Interpreting and analysing*

- Interpret information and data to identify economic and business issues, trends and economic cause-and-effect relationships (AC9HE8S03)

### GENERAL CAPABILITIES

*Critical and Creative Thinking*

- Identify and clarify significant information and opinion from a range of sources, including visual information and digital sources (Level 5)

*Literacy*

- Responds to complex texts (Level 7)
- Selects appropriate listening strategies for planned and unplanned situations (Level 7)
- Uses language structures and features appropriate to learning area content (Level 7)

- Uses a range of evaluative language to express opinions or convey emotion (e.g. "significant benefits", "devastating consequences") (Level 7)

## CROSS-CURRICULUM PRIORITIES

*Sustainability*

- Sustainable patterns of living require the responsible use of resources, maintenance of clean air, water and soils, and preservation or restoration of healthy environments (SS2)
- Sustainably designed products, environments and services aim to minimise the impact on or restore the quality and diversity of environmental, social and economic systems (SD1)
- Creative and innovative design is integral to the identification of new ways of sustainable living (SD2)
- Sustainable design requires an awareness of place, past practices, research and technological developments, and balanced judgements based on projected environmental, social and economic impacts (SD3)

*Aboriginal and Torres Strait Islander Histories and Cultures*

- 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 (A_TSICP1)

## FURTHER INFORMATION

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