








# Women in STEM






## Stage 3 to 6 - Overview

The Women in STEM learning module introduces students to the idea of Science, Technology, Engineering and Maths (STEM) as a career path within Snowy Hydro, while extending their knowledge of great Australian women in STEM - past and present.

With a focus on research, learning tools have been developed to support students' styles as they investigate the stories, achievements and learn how these women have, or are, impacting Australia. All the resources for this module are contained within the lesson plan and have been uploaded to the module separately for individual access and use.

Learning area	Content descriptions
 <b>HASS - year 5</b> <a href="#">ACHASSI095</a>	<b>Inquiry and skills - Researching</b> Locate and collect relevant information and data from primary sources and secondary sources
 <a href="#">ACHASSI101</a>	<b>Evaluating and reflecting</b> Evaluate evidence to draw conclusions
 <b>HASS - year 6</b> <a href="#">ACHASSI123</a>	<b>Inquiry and skills - Researching</b> Locate and collect relevant information and data from primary sources and secondary sources
 <a href="#">ACHASSK137</a>	<b>Knowledge and understanding</b> The contribution of individuals and groups to the development of Australian society since Federation
 <b>Science - year 7</b> <a href="#">ACSHE121</a>	<b>Science as a human endeavour - Use and influence of science</b> People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity
 <a href="#">AC SIS133</a>	<b>Science Inquiry Skills - Communication</b> Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate
 <b>HASS (history) - year 7</b> <a href="#">ACHHS207</a> <a href="#">ACHHS208</a>	<b>Historical Skills - Historical questions and research</b> Identify a range of questions about the past to inform a historical inquiry Identify and locate relevant sources, using ICT and other methods

 <b>ACHHS211</b>	<b>Analysis and use of sources</b> Draw conclusions about the usefulness of sources
 <b>Science - year 8</b> <b>ACSHE136</b>	<b>Science as a human endeavour</b> - Use and influence of science People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity
 <b>HASS (history) - year 8</b> <b>ACHHS150</b> <b>ACHHS151</b>	<b>Historical skills</b> - Historical questions and research Identify a range of questions about the past to inform a historical inquiry Identify and locate relevant sources, using ICT and other methods
 <b>ACHHS153</b> <b>ACHHS154</b>	<b>Analysis and use of sources</b> Locate, compare, select and use information from a range of sources as evidence Draw conclusions about the usefulness of sources
 <b>ACHHS155</b>	<b>Perspectives and interpretations</b> Identify and describe points of view, attitudes and values in primary and secondary sources
 <b>ACHHS157</b>	<b>Explanation and communication</b> Use a range of communication forms (oral, graphic, written) and digital technologies
 <b>ACHHS168</b>	<b>Historical Skills</b> - Historical questions and research Identify and locate relevant sources, using ICT and other methods
 <b>ACHHS169</b> <b>ACHHS170</b>	<b>Analysis and use of sources</b> Identify the origin, purpose and context of primary and secondary sources Process and synthesise information from a range of sources for use as evidence in an historical argument
 <b>ACHHS172</b>	<b>Perspectives and interpretations</b> Identify and analyse the perspectives of people from the past
 <b>ACHHS174</b>	<b>Explanation and communication</b> Develop texts, particularly descriptions and discussions that use evidence from a range of sources that are referenced
 <b>HASS (history) - year 10</b> <b>ACDSEH149</b>	<b>Historical Knowledge and Understanding</b> - Popular culture (1945 - present) Continuity and change in beliefs and values that have influenced the Australian way of life
 <b>ACHHS186</b>	<b>Historical skills</b> - Historical questions and research Identify and locate relevant sources, using ICT and other methods

 <u>ACHHS190</u>	<b>Perspectives and interpretations</b> Identify and analyse the perspectives of people from the past
 <b>HASS ( modern history)</b> <b>- year 11 and 12</b>	<b>Unit 2: Movements for Change in the 20th century</b> Historical skills and Historical knowledge and understanding Movement to study - Women's movements
 <u>ACHMH121</u> <u>ACHMH125</u>	<b>Unit 3: Modern Nations in the 20th century</b> List 1 - Australia, 1918 - 1949 (End of WWI - Election of Menzies)  <b>Historical knowledge and understanding</b> The adjustment of national priorities in the 1920s, including the tensions between urbanisation, industrialisation and rural development; the difficulties of soldier settlement; the exclusion of Aboriginal and Torres Strait Islander Peoples; and the changing role of women  The key features of post-war reconstruction, including industrialisation, immigration, the provision of social welfare, and attitudes and policies towards Aboriginal and Torres Strait Islander Peoples, and women

The subject of sustainability is a foundation for all learning areas and key concepts - Sustainability - Cross-curriculum priority (ACARA)

## Resources

<b><u>Activity sheet</u></b> - Snowy Hydro Women
<b><u>Interactive</u></b> - Six video grabs of Snowy Hydro women of STEM
<b><u>Activity sheet</u></b> - Historic women in STEM
<b><u>Activity sheet</u></b> - Research information collection sheet - mind map
<b><u>Activity sheet</u></b> - Research information collection sheet - table
<b><u>Activity sheet</u></b> - Research information collection sheet - written
<b><u>Activity sheet</u></b> - Ideas capture worksheet
<b><u>Activity sheet</u></b> - Supporting research tool

# Lesson ideas and activities

## Introduction

Snowy Hydro has a strong focus on Science, Technology, Engineering and Maths (STEM). There are many diverse STEM career choices within the operation of our core business that are fundamental to the generation of renewable energy. In the women in STEM module, learn more about career possibilities at Snowy Hydro and be inspired by other great Australian women in STEM.

The development of this learning module has been designed as a support tool for teachers who wish to incorporate a focus on Australian women in STEM into their classroom and extend their students' learning experience through the resource package.

The resources align with the Australian Curriculum and have been built around the three interrelated strands of language, literature and literacy, with a major focus on history and STEM-related outcomes, facilitated by targeting the focus topic of innovative Australian women in STEM - past and present.

The various tools have been created to meet the different learning styles of students and to build on their research and writing skills, while exploring the profiles of great Australian women in STEM to further broaden their knowledge in this topic area, consequently strengthening concepts, skills and processes.

The module features a suite of three research information collection sheets, videos of current Snowy Hydro employees partnered with a reflective worksheet, a generic ideas capture sheet and a worksheet targeted at delving further into historic Australian women of STEM, exploring innovation and changes in social attitude.

Also included are direct links to great websites to investigate the amazing, innovative current Australian women in STEM and links to profiles of selected past great Australian women in STEM. The students are not limited to the links supplied in this content and are encouraged to do as much individual research as they choose.

This module will assist the learner to discover more about ground-breaking or inspiring Australian women in STEM and to confidently explain their choice in written form or as a presentation.

## Lesson

**Snowy Hydro women in STEM** - This reflective learning tool is designed to challenge and connect the students with concepts and ideas presented by six Snowy Hydro women through their individual mini video grabs.

- Watch the videos before answering the reflective questions. The student will have an opportunity to connect and reflect through a series of six guiding questions to support and capture their reflective thoughts and opinions.
- This activity is recommended for yrs 9, 10, 11 and 12 high school students, however, if you feel your Stage 3 & 4 students would enjoy and benefit from the challenge, please use it as an extension activity.
- We highly recommend viewing the videos for all age groups, to learn more about what type of careers are available in STEM - [click here](#)

## Current Australian women in STEM

Suggested helpful links to explore. **Note - these links direct away from Snowy Hydro:**

- **Diversity across Australia** - Discover the diversity of women with science, technology, engineering and mathematics skills across Australia
- **Career women in STEM** - Government website aimed at advancing women in STEM as a part of the gender equity in STEM education and careers strategy
- **Women in STEM** - This website offers videos about careers and industry pathways, while highlighting women in STEM achieving in their chosen area
- **Women in STEM archives** - News articles and media releases
- **COVID-19 research** - COVID-19 Database - research the women who are providing help with COVID-19
- **10 of Australia's most influential women in engineering** - This website highlights 10 Australian women engineers and describes how they are bringing their expertise to the world

## Past Australian women in STEM

Suggested helpful links to explore

- **Prof. Elizabeth Blackburn** - The Nobel Prize in Physiology or Medicine 2009 - Elizabeth H. Blackburn - Facts - NobelPrize.org one of three people to win this prize
- **Prof. Nancy Millis** - Professor Nancy Millis, microbiologist
- **Ruby Payne-Scott** - Ruby Payne-Scott [1912-1981] - Radio physics and radio astronomy
- **Florence Violet McKenzie** - Australia's first female electrical engineer
- **Dr Yvonne Aitken** - Dr Yvonne Aitken, agricultural scientist (1911-2004)
- **Dr Isobel Bennett** - Dr Isobel Bennett (1909-2008), marine biologist
- **Margaret Dicks** - Miss Margaret Dick (1918-2008), food microbiologist
- **Beryl Nashar** - Professor Beryl Nashar (1923-2012), geologist
- **Dorothy Hill** - Australian Academy of Science Dorothy Hill Medal
- **Ann Woolcock** - Professor Ann Woolcock (1937-2001), medical scientist - asthma

## Learning resources - research tools

The suite of three research information collection sheets are designed to support the individual learning styles of students and provide them with a workable platform to collect and sort text while developing their knowledge and understanding of the research task. Each sheet has four focus questions to assist the learner to break down and analyse targeted information with the ultimate outcome of a published piece.

- **Research information collection sheet 1 - Mind Map**  
Research one person at a time using four focus questions to arrange their findings visually and creatively
- **Research information collection sheet 2 - Table**  
This research tool has the capacity to research three people at a time using a table format. For the student who likes to compare, analyse and evaluate collected information
- **Research information collection sheet 3 - Written**  
For the student who likes to arrange their findings by answering in long sentences to interpret their findings in the written form

## History

This activity sheet has been designed to meet the History curriculum outcomes for high school students yrs 7 - 12 and focuses on supporting research skills and critical thinking. Through a series of focus questions, the students will gather, locate, identify information, analyse perspectives and form their own opinions regarding their selected historic women in STEM

**Activity sheet | [Historic women of STEM](#)**

### **Handy supportive worksheet for all ages**

This activity sheet is a generic collection sheet and is not prescriptive. The purpose of this document is freedom to write, map or draw ideas in any way the student wishes to apply its use.

**Generic ideas capture sheet** | Resource - Ideas capture sheet

This ideas capture sheet can be used in the classroom for any other subject or topic and is not exclusive to this module. Suitable for all ages.

Visit our online store for more helpful resources - [click here](#)