

CONSTRUCTION
FUTURES



**SCHOOL
EXCURSION**

PROGRAM

YEAR 12

POWERING MODERN COMMUNITIES



PURPOSE OF THE LEARNING ACTIVITY

To enable students to examine innovative energy usage in the design and construction of new home and in retrofitting existing homes.

As an outcome of this series of activities, students will be able to articulate how modern home design is using innovative technologies to bring renewable and sustainable energy to home construction, for example: smart metres, underground power, use of solar power and batteries, energy sharing, and microgrids.

LEARNING ACTIVITY OVERVIEW

Students research innovation in energy use and identify how innovations are being developed and applied in the construction industry.

CURRICULUM LINKS

Students in Year 12 typically undertake specialised programs of study. This sequence of learning activities has been designed to accommodate the learning focuses of a range of students and can be addressed from a number of different curriculum perspectives. The main purpose of these activities is to provide students with a meaningful context in which to examine and discuss a range of roles in the construction industry and to assess how elements of supply and demand impact the availability of these roles.

Teachers are advised to use the curriculum links as a guide to ensuring these activities support their planned learning and teaching programs.

And overarching learning focus can be drawn from the General Capabilities that are part of the Australian Curriculum.

These activities can be implemented in the context of the **Integrated Science, ATAR Course, Year 12**, focusing on:

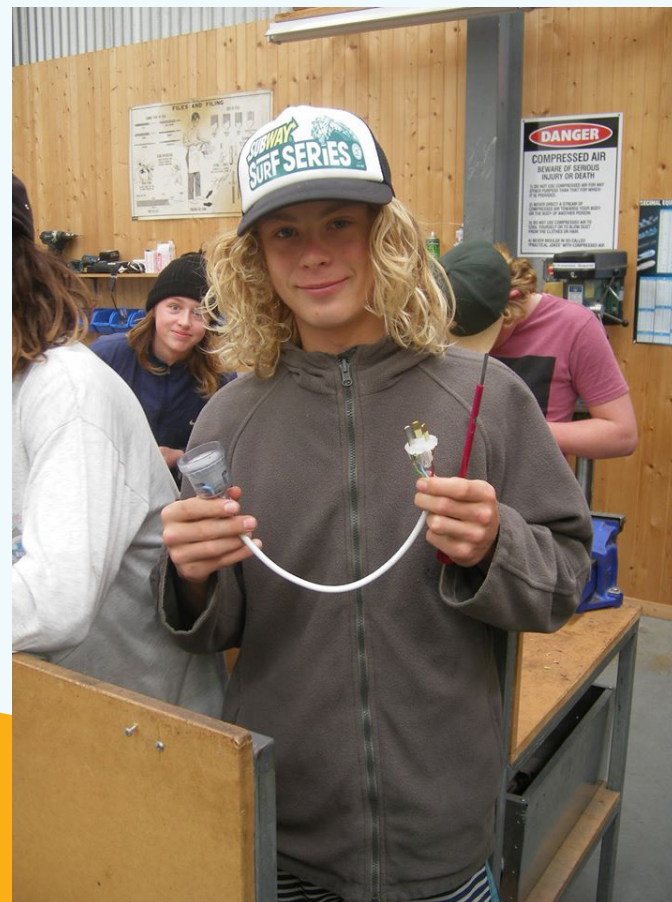
- Unit 4 – Energy.
- Energy, energy uses, energy production and sustainability of energy resources, through an integrated scientific approach.

For students not studying the **Integrated Science, ATAR Course**, the following curriculum links are relevant.

English Year 12

Create a range of texts:

- Transforming and adapting texts for different purposes, contexts and audiences.
- Sustaining analysis and argument.
- Using appropriate quotation and referencing protocols.
- Using strategies for planning, drafting, editing and proofreading.
- Using accurate spelling, punctuation, syntax and metalanguage.





LEARNING ACTIVITY

BEFORE VISITING THE CONSTRUCTION FUTURES CENTRE

Students investigate innovative design in buildings and attempt to define what innovation means in this context, providing examples from their research.

Students discuss their findings with their peers and refine their definitions and examples as a result of their discussion, including new building construction and redesign and renovation projects.

Students write questions they would like to find answers to at the Construction Futures Centre in relation to innovation in the construction industry, with a particular focus on building design.

DURING THE VISIT

While at the Construction Futures Centre, students engage with exhibits to learn about design innovation, its meaning and place in the process of building design and construction and the reasons why innovation is important.

Students investigate technological innovations in the construction industry as part of their engagement with exhibits.

Students identify roles in the construction industry that focus on innovation and the development of current and future technology in homes, and the skills, training and qualifications required to be successful in these roles.

At the end of their visit, students discuss and compare the information they have collected to enable peer learning.

AFTER THE VISIT

Students create a design brief for an innovative community or building design and construction or renovation, developing criteria for the brief based on their investigations pre and during their visit to the Construction Futures Centre. Criteria should include application of innovative solutions for provision of energy.

Students exchange design briefs with partners and create responses to each other's briefs, indicating how they would apply innovative practices, materials and construction processes in the design and construction of the community or building and why the application of such innovations would be beneficial.

SKILLS RELATED TO THE CONSTRUCTION INDUSTRY

The Construction Futures Centre has identified core skills that relate to careers in the construction industry. As students complete learning experiences before, during and after their visit to the Construction Futures Centre, they should be encouraged to work in ways that enable them to apply and demonstrate these core skills and to identify how these relate to and are applied in roles in the construction industry.

THE CORE SKILLS ARE:

- reading;
- writing;
- speaking;
- listening;
- numeracy;
- technology;
- teamwork; and
- problem solving.

SUGGESTED WEBSITES

www.westernpower.com.au/community
westernpower.com.au/energy-solutions/projects-and-trials/
www.engineersaustralia.org.au/News
www2.deloitte.com/us/
westernpower.com.au/faqs/underground
www.yourhome.gov.au/
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