

Overview

Sustainable Housing: Years 11-12

SIP

Science in Practice



Toohey Forest
Environmental
Education
Centre



Science in Practice 2024

Unit option E: Sustainability

Concepts

Describe:

- Ecological footprint
- Four dimensions of sustainability
- Sustainable practices – maintaining levels of resources to meet needs of the current and future population.

Information

Analyse and Interpret:

- Architectural features to meet environmental conditions
- Relationships between the four dimensions of sustainability

Procedures and skills

Execute and Plan

- Construct a model house featuring several energy efficiency strategies.
- Investigations into sustainability

Overview

Sustainable Housing is a whole day Science in Practice program that describes the **concepts** of: sustainable living practices, ecological footprints and the four dimensions of sustainability. Students will analyse and interpret architectural features to meet environmental conditions and plan and produce a sustainable model house featuring several energy efficiency strategies.

During the program students will **analyse and interpret information** gathered during a self-guided tour of the EcoCentre (a sustainably designed building within Griffith University) to identify the environmental benefits of a range of passive and active sustainable design features. These features include: rammed earth walls, natural ventilation, solar energy generation and water conservation. Students will then compare these to the Sir Samuel Griffith Centre at Griffith University which is Australia's first zero-emission, self-powering teaching and research facility. The building has been given a 6-star green rating and runs on hydrogen and solar power.

In small groups students will work collectively to **plan and execute** the construction of an appealing house using sustainable design features while adhering to budget constraints. They will also complete an investigation into how paint/roof colour choice and/ or glass / insulation type contribute to energy efficiency and consumption within a house.

This content maps to a provided sample assessment which may be used by teachers at your discretion

Sustainable Housing has been assessed as medium risk. A Curriculum Activity Risk Assessment is available on request.

