

Curriculum connections

Getting started

The Home Energy Project has been designed for Years 7–9 (Curriculum Standards Framework 11 levels 5 and 6 in Victoria; Curriculum, Standards, and Accountability Framework levels 4 and 5 in South Australia). Some of the activities and assignments could be modified for use at Year 10 and/or upper primary school level.

The project is primarily associated with the Science and Maths curriculum areas. There are also connections to other areas, such as Society and Environment (South Australia), SOSE (Victoria) and English.

The timing of the project's use will depend on the individual school's timetable; however, it could be introduced at Year 7 to complement other topics about energy and sustainability, how science works or, alternatively, during Science Week.

At Year 8 it could be linked to the topics of Energy (electricity, introduction to chemistry), and in Geography (sustainable energy).

At Years 9 and 10 it could be linked to topics such as Chemical Energy, Food Chains, Electrical Circuits and Alternative Energy.

At Year 10 it could also be used for a full term as an Environmental Awareness unit.

English connections

The English curriculum connections as listed don't have clear connections to any one particular section; consequently, they are not given a corresponding section or page numbers. Rather, students will obtain the learning outcomes as described by completing a variety of activities and assignments.

The group work included in this resource, including discussion sessions, will also benefit students in developing English language skills.

Communicate will be useful in the development not only of English skills (speaking, listening, reading and writing), but also a broad range of skills associated with the arts.

The following pages outline the curriculum connections for South Australia and Victoria.

Curriculum connections

Victoria

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Victoria

Learning Outcomes

KLA	Strand / substrand	Learning outcome	Section	Page
Maths	Measurement	5.1 Recognise and select appropriate metric units and levels of accuracy for measuring quantities and rates.	Section 2 Section 4	24 32
		5.2 Select, use and adapt instruments to measure length, mass, capacity, volume, angle and temperature.	Section 7	48
		5.3 Use judgements of the size of metric units to make and refine estimates of quantities.	Section 4	32
	Time	5.1 Measure, estimate and calculate time and duration of time.	Section 3 Section 5 Section 7 Section 8	28 36 48 53
		5.3 Calculate and use rates.	Section 2 Section 3 Section 5 Section 7 Section 8	24 28 36 48 53
	Using relationships	6.1 Calculate using rates and interpret graphs involving rates.	Section 2 Section 7	24 48
		6.3 ext. Analyse the consequences of using a range of systems in terms of their energy source.	Section 1	18
Technology	Technology	6.1 Predict the likely uses and effects of a limited range of emerging technologies if they were to be widely applied.	Section 1	18
		6.2 Analyse and develop solutions to information problems, individually and as a team member, using a range of information technology skills, processes and equipment.	Section 5 Section 7 Section 8 Section 9	36 48 53 56
		6.3 ext. Analyse the consequences of using a range of systems in terms of their energy source.	Section 1	18
Science	Biology	6.1 Explain how ecosystems are maintained in terms of energy and matter.	Section 1	18
	Earth and space science	6.2 Describe the extraction, processing and use of geological resources and associated environmental and social issues.	Section 1	18
	Chemistry	5.1 Use a simple particle model to explain the structure and properties of solids, liquids and gases.	Section 1	18
		6.3 Specify the characteristics, chemical reactions and usefulness to society of groups of similar substances.	Section 1	18
	Physics	5.1 Describe the characteristics and applications of the transmission and reflection of energy in the form of heat light and sound.	Section 1	18
		6.1 Relate the behaviours of light, such as reflection, refraction, absorption and polarisation, to uses in technology.	Section 1	18

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KLA	Strand / substrand	Learning outcome	Section	Page
SOSE	Geography	5.2 Explain how natural processes and human activities change environments.	Section 1 Section 10	18 62
		5.3 Explain how people's use of natural and human environments changes over time.	Section 6	41
		5.4 Develop a plan to address impacts of change.	Section 6 Section 8	41 53
		6.1 Explain the processes and interactions between people and major natural systems.	Section 6 Section 8	41 53
		6.3 Predict the effects of resource development and use on a selected natural and human environment.	Section 1	18
		6.4 Develop a comprehensive strategy to resolve an issue related to the use and management of a natural or human environment.	Section 6 Section 8 Section 10	41 53 62
	Geography extension	6.5 Evaluate the effectiveness of an environmental policy formulated to manage the sustainable development of a resource.	Section 8 Section 9	53 56
KLA	Strand / substrand	Learning outcome		
English	Speaking and Listening	5.1 Listen to and produce a range of spoken texts dealing with some challenging themes and issues.		
		5.4 Identify and use a range of strategies to influence an audience.		
		6.1 Listen to and produce a range of spoken texts in order to examine different perspectives on complex themes and issues.		
		6.3 ext. Use the structures and features of spoken language to deal with complex subject matter in a range of situations.		
		6.4 Evaluate the strategies used by others to enhance presentation of spoken texts and select and use them appropriately.		
		6.4 ext. Draw on a range of strategies to listen to and present spoken texts that deal with complex subject matter.		
	Writing	5.9 Use a range of text types to write about some challenging themes and issues in writing.		
		5.10 Adjust writing for a range of contexts, purposes and audiences.		
		5.12 Use a range of strategies to plan, compose, revise and edit texts that present some challenging themes and issues.		
		6.9 Use a range of text types to convey detailed information and discuss different perspectives on complex themes and issues in writing.		
		6.10 Identify the characteristics and expectations of particular audiences and accommodate or resist these expectations when writing.		
		6.12 Use a range of strategies to plan, compose, revise and edit texts that examine different perspectives on complex themes and issues.		

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South Australia

Getting started

South Australia

Learning Outcomes

KLA	Strand / substrand	Learning outcome	Section	Page
Mathematics	Exploring, analysing and modelling data	4.2 Read and describe information in given tables, diagrams, line and bar graphs. Make predictions based on the information, understanding the limitations of data interpretation and the possible social consequences of these limitations.	Section 2 Section 4 Section 7 Section 8 Section 9	24 32 48 53 56
		5.2 Display and summarise data to show location and spread while interpreting and critiquing collected and published data from a variety of sources and perspectives (describing distributions and making comparisons, inferences and predictions where appropriate).	Section 4 Section 5 Section 7 Section 8 Section 9 Section 10	32 36 48 53 56 62
	Measurement	4.4 Select appropriate measurement units and scale to conduct collaborative research into issues associated with the social or physical world.	Section 7 Section 8	48 53
		4.5 Apply a variety of techniques and tools and use a range of measurement formulae to solve problems.	Section 2 Section 3	24 28
		5.5 Apply a variety of techniques and tools and manipulate formulae to solve and report on everyday and community problems.	Section 6	41
	Pattern and algebraic reasoning	5.11 Use a variety of mathematical models to make connections and analyse how things might change in both real and abstract contexts.	Section 5 Section 6 Section 7 Section 8 Section 9	36 41 48 53 56
		5.16 Describe change and varying rates of change and make predictions when analysing graphical information.	Section 2 Section 4 Section 9	24 32 56
		5.17 Use and interpret relationships between variables as a tool for analysing and modelling change in a range of contexts.	Section 6 Section 7 Section 8 Section 9	41 48 53 56

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KLA	Strand / substrand	Learning outcome	Section	Page
Science	Earth and Space	4.1 Identify and investigate changes, both natural and human-induced, on the Earth and suggest ideas that encourage the preservation of the natural environment for all living things.	Section 1	18
	Energy Systems	4.3 Investigate ways of obtaining, transferring and using energy (including from sustainable energy sources and fossil fuels) for particular purposes.	Section 1	18
		4.4 Plan and evaluate investigations that focus on the transfer and transformation of energy.	Section 1 Section 3	18 28
		5.3 Analyse aspects of energy sustainability, including energy resources, energy production and distribution, and challenges for future worldwide uses of energy.	Section 1 Section 7 Section 8 Section 9	18 48 53 56
Society and Environment	Time, Continuity and Change	4.1 Suggest and justify reasons why groups of people in societies, countries or civilisations have undergone changes in wealth and/or their ability to sustain natural resources.	Section 1 Section 8	18 53
	Place, Space and Environment	4.5 Hypothesise, then collect, record, organise and evaluate data from fieldwork, print and electronic sources, in order to analyse local and global, environmental or socioeconomic issues.	Section 4 Section 5 Section 6 Section 8 Section 9	32 36 41 53 56
		4.6 Identify and describe ways that places and natural environments are valued or threatened and discuss strategies related to ecological sustainability.	Section 1	18
		5.5 After critically analysing information from multiple sources and discussing the political implications of decisions, report on an issue related to people's sustainable use of resources or places.	Section 1 Section 10	18 62
		5.6 Research and evaluate plans for the development of a place or resource and report on outcomes on the basis of ecological sustainability.	Section 8 Section 9	53 56

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KLA	Strand / substrand	Learning outcome
English	Texts and Contexts	4.2 Produce a range of spoken texts about topics, events and issues of personal, community and world interest and adjust speaking for a wide range of contexts and audiences.
		4.4 Compose a range of texts that include detailed information and explore different perspectives about a range of issues and adjust texts for particular audiences, purposes and contexts.
		5.2 Produce a range of spoken texts about specialised topics and current and future issues and speak appropriately in different contexts and for a variety of purposes and audiences.
		5.4 Compose a range of texts that include detailed information and explore different perspectives about diverse topics or issues and adjust the text to produce an intended effect upon the audience.
	Language	4.6 Control and adjust most aspects of language when producing a variety of spoken texts for a wider range of school and appropriate community audiences.
		4.8 Control and adjust most aspects of language when planning and composing an extensive range of written and multi media texts on different themes and issues.
		5.6 Manipulate language when producing a variety of spoken texts appropriate for an extended range of school and community audiences.
	Strategies	4.10 Control and adjust a variety of strategies for planning, composing, presenting and evaluating spoken texts for wider community audiences.
		5.10 Manipulate a wide variety of strategies for planning, composing, presenting and evaluating a range of spoken texts for an extended range of school and community audiences.