

Curriculum connections

Queensland

Year 7

The Home Energy Project addresses essential learnings from the following key learning areas by the end of year 7.

Key Learning Area	Essential Learnings	Section
Science Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_science_yr7.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> draw conclusions that summarise and explain patterns in data and are supported by experimental evidence and scientific concepts reflect on different points of view and recognise and clarify people's values relating to the applications and impacts of science collect and analyse first-hand and second-hand data, information and evidence communicate scientific ideas, data and evidence, using scientific terminology suited to the context and purpose reflect on learning, apply new understandings and identify future applications 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> identify problems and issues, and formulate testable scientific questions plan investigations, including identifying conditions for a fair comparison, variables to be changed and variables to be measured. 	Calculate Conserve
Knowledge and understanding		
<i>Science as a human endeavour</i>	<ul style="list-style-type: none"> Scientific knowledge can help to make natural, social and built environments sustainable, at a scale ranging from local to global. Scientific knowledge has been accumulated and refined over time, and can be used to change the way people live. 	Calculate Conserve Communicate
<i>Energy and change</i>	<ul style="list-style-type: none"> Renewable and non-renewable energy sources can be identified and used for different purposes. Energy can be transferred and transformed. 	Calculate Conserve Communicate
Studies of society and environment (SOSE) Source: www.qsa.qld.edu.au/downloads/learning/qcar_el_sose_yr7.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> evaluate sources of information and evidence for relevance, reliability, origins and perspective identify issues and use common and own focus questions draw conclusions and make decisions based on information and evidence by identifying patterns and connections communicate descriptions, decisions and conclusions, using different text types for specific purposes and the conventions of research-based texts respond to investigation findings and conclusions by planning and implementing actions identify issues and use common and own focus questions 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> plan investigations and use inquiry models collect and analyse information and evidence from primary and secondary sources. 	Calculate Conserve

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
Knowledge and understanding		
<i>Place and space</i>	<ul style="list-style-type: none"> Sustainability requires a balance between using, conserving and protecting environments, and involves decisions about how resources are used and managed. 	Calculate Conserve Communicate
Technology Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_technology_yr7.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> investigate and analyse the purpose, context, specifications and constraints for design ideas reflect on and identify the impacts of products and processes on people, their communities and environments evaluate the suitability of products and processes for the purpose and context, and recommend improvements. 	Calculate Conserve Communicate
Knowledge and understanding		
<i>Technology as a human endeavour</i>	<ul style="list-style-type: none"> Design and development of products are influenced by societies' changing needs and wants, and include artefacts, systems, environments and services. Decisions made about the design, development and use of products can impact positively or negatively on people, their communities and environments. 	Calculate Conserve Communicate
Mathematics Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_maths_yr7.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> analyse situations to identify mathematical concepts and the relationships between key features and conditions necessary to generate solutions select and use suitable mental and written computations, estimations, representations and technologies to generate solutions and to check for reasonableness communicate thinking and justify reasoning and generalisations, using mathematical language, representations and technologies reflect on and identify the contribution of mathematics to their life reflect on learning, apply new understanding and identify future applications 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> pose questions that draw on familiar examples to clarify thinking and support predictions plan activities and investigations to explore concepts through selected pathways, and plan strategies to solve mathematical questions, problems and issues. 	Conserve
Knowledge and understanding		
<i>Number</i>	<ul style="list-style-type: none"> Percentages, rate, ratio and proportion can be used to describe relationships between quantities and to solve problems in practical situations involving money, time and other measures. 	Calculate Conserve Communicate

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
<i>Number cont.</i>	<ul style="list-style-type: none"> Financial decision and transactions are influenced by a range of factors, including value for money, discounts, method of payment, and available income or savings. Estimation strategies including rounding, and estimates based on powers of 10, assist in checking for reasonableness of calculations involving whole numbers and common and decimal fractions. Problems can be interpreted and solved by selecting from the four operations and mental, written and technology-assisted strategies. Budgets and financial records are used to monitor income, savings and spending. 	Calculate
<i>Chance and data</i>	<ul style="list-style-type: none"> Sample data drawn from a given population can be summarised, compared and represented in a variety of ways. Data can be discrete and can be allocated to categories or numbered. Data may be continuous and described as distributions of quantities. Variation and possible causes of bias can be identified in data collections. 	Calculate Conserve Communicate
<i>Measurement</i>	<ul style="list-style-type: none"> Appropriate instruments, technologies and scale are used when exploring measurement of length, area, volume, mass, time and angles where not all of the graduations are numbered. Relationship between the international system of measures, including between mm, cm, m and km; kg and g; cm² and m²; cm³ and m³. 	Calculate Conserve
English Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_english_yr7.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> construct non-literary texts to express meanings and messages, to identify causes and effects, and to state positions supported by evidence construct literary texts by planning and developing subject matter, using dialogue, description and evaluative language identify main ideas and the sequence of events, make inferences and draw conclusions based on ideas and information within and across texts 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> identify and demonstrate the relationship between audience, subject matter, purpose and text type interpret and identify that readers/viewers/listeners are positioned by aspects of texts recognise and select vocabulary and interpret the effect of literal and figurative language. 	Communicate
Knowledge and understanding		
<i>Reading and viewing</i>	<ul style="list-style-type: none"> Readers and viewers use a number of active comprehension strategies to interpret texts, including activating prior knowledge, predicting, questioning, identifying main ideas, inferring, monitoring, summarising and reflecting. 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> Comprehension involves drawing on knowledge of the subject matter and contextual cues to interpret, infer from and evaluate texts in community contexts. 	Calculate

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
<i>Reading and viewing cont.</i>	<ul style="list-style-type: none"> Words, groups of words, visual resources and images can persuade an audience to agree with a point of view by portraying people, characters, places, events and things in different ways. 	Communicate
	<ul style="list-style-type: none"> Purposes for reading and viewing are identified and are supported by an evaluation of texts based on an overview that includes skimming and scanning titles, visuals, headings and subheadings, font size, tables of contents, indexes and glossaries. 	Conserve
<i>Writing and design</i>	<ul style="list-style-type: none"> The purpose of writing and designing includes evoking emotion, persuading and informing. 	Conserve Communicate
	<ul style="list-style-type: none"> Writers and designers establish roles, make assumptions about their audience and position them through language choices. Words and phrases, symbols, images and audio affect meaning position and audience. Text users make choices about grammar and punctuation, to establish meaning. Writers and designers refer to authoritative sources and use a number of active writing strategies, including planning, drafting, revising, editing, proofreading, publishing and reflecting. 	Communicate
<i>Language elements</i>	<ul style="list-style-type: none"> Evaluative language, including adjectives, can appeal to certain groups, express opinions, and represent people, characters, places, events and things in different ways. Vocabulary is chosen to establish relationships, persuade others, describe ideas and demonstrate knowledge. 	Calculate Conserve Communicate
<i>Literary and non-literary texts</i>	<ul style="list-style-type: none"> Non-literary texts evaluate, inform, present arguments and persuade. Articles, features, letters to the editor, documentaries, interviews, advertisements, film reviews, information and news reports, autobiographies, arguments, group discussions, meetings and debates are types of non-literary texts. Main ideas, issues and events are selected and organised to sustain a point of view and to project a level of authority that matches a purpose and an intended audience. 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> A text can be constructed for more than one purpose. Literary texts entertain, evoke emotion, create suspense and convey messages and information. Poetic forms and poetic devices express thoughts and ideas in a variety of ways. 	Communicate
<i>Speaking and listening</i>	<ul style="list-style-type: none"> Active listeners identify ideas and issues from others' viewpoints and clarify meanings to justify opinions and reasoning. Speakers and listeners use a number of strategies to make meaning, including identifying purpose, activating prior knowledge, responding, questioning, identifying main ideas, monitoring, summarising and reflecting. 	Conserve

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
The Arts Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_arts_yr7.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> select and develop ideas for art works, considering intended audiences and intended purposes, and make decisions about arts elements and languages. 	Conserve Communicate
Knowledge and understanding		
<i>Drama</i>	<ul style="list-style-type: none"> Roles and characters can be presented from different perspectives and in different situations, using variations in voice, movement and focus. Dramatic action is interpreted, prepared and shaped through scenarios and scripts. 	

Source: *Queensland Studies Authority*, <http://www.qsa.qld.edu.au>

Curriculum connections

Queensland

Years 8-9

The Home Energy Project addresses essential learnings from the following key learning areas by the end of year 9.

Key Learning Area	Essential Learnings	Section
Science Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_science_yr9.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> identify problems and issues, and formulate scientific questions and design investigations research and analyse data, information and evidence evaluate data, information and evidence to identify connections, construct arguments and link results to theory draw conclusions that summarise and explain patterns, and that are consistent with the data and respond to the question communicate scientific ideas, explanations, conclusions, decisions and data, using scientific argument and terminology in appropriate formats reflect on learning, apply new understandings and justify future applications 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> plan investigations guided by scientific concepts and design and carry out fair tests select and use scientific equipment and technologies to enhance the reliability and accuracy of data collected in investigations conduct and apply safety audits and identify and manage risks. 	Conserve
Knowledge and understanding		
<i>Science as a human endeavour</i>	<ul style="list-style-type: none"> Responsible, ethical and informed decisions about social priorities often require the application of scientific understanding. Immediate and long-term consequences of human activity can be predicted by considering past and present events. 	Calculate Conserve Communicate
<i>Earth and beyond</i>	<ul style="list-style-type: none"> Global patterns of change on earth and in its atmosphere can be predicted and modelled. 	Calculate
<i>Energy and change</i>	<ul style="list-style-type: none"> Energy can be transferred from one medium to another. Energy is conserved when it is transferred or transformed. 	Calculate Conserve

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
Studies of society and environment (SOSE) Source: www.qsa.qld.edu.au/downloads/learning/qcar_el_sose_yr9.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> identify a research focus from broad topics and design focus questions and sub-questions research and analyse data, information and evidence from primary and secondary sources draw conclusions and make decisions supported by interpretations of data, information and evidence communicate descriptions, decisions and conclusions, using text types specific to the context and purpose and the conventions of research-based texts apply strategies for making group decisions and for taking informed social and environmental action 	Calculate Communicate
	<ul style="list-style-type: none"> plan investigations, using discipline-specific inquiry models and processes. 	Conserve
Knowledge and understanding		
<i>Place and space</i>	<ul style="list-style-type: none"> Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems. Governments and communities need to balance economic, social, political and environmental factors through sustainable development, consumption and production. 	Calculate Conserve Communicate
Technology Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_technology_yr9.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> reflect on and analyse the impacts of products and processes on people, their communities and environments evaluate the suitability of products and processes against criteria and recommend improvements investigate and analyse specifications, standards and constraints in the development of design ideas 	Calculate Communicate
	<ul style="list-style-type: none"> select resources, techniques and tools to make products that meet detailed specifications identify, apply and justify workplace health and safety practices reflect on and analyse the impacts of products and processes on people, their communities and environments. 	Conserve

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
Knowledge and understanding		
<i>Technology as a human endeavour</i>	<ul style="list-style-type: none"> People can influence decisions made about the design, development and use of technology to change the impact on people, their communities and environments at local and global levels. Product design and production decisions are influenced by aspects of appropriateness and be detailed specifications, constraints and standards of production. 	Calculate Conserve Communicate
<i>Information, materials and systems (resources)</i>	<ul style="list-style-type: none"> Characteristics of resources are compared, contrasted and selected to meet detailed specifications and predetermined standards of productions to best suit the user. 	Calculate Conserve Communicate
Mathematics Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_math5_yr9.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> analyse situations to identify the key mathematical features and conditions, strategies and procedures that may be relevant in the generation of a solution pose and refine questions to confirm or alter thinking and develop hypotheses and predictions select and use mental and written computations, estimations, representations and technologies to generate solutions and to check for reasonableness of the solution use mathematical interpretations and conclusions to generalise reasoning and make inferences evaluate their own thinking and reasoning, considering their application of mathematical ideas, the efficiency of their procedures and opportunities to transfer results into new learning communicate thinking, and justify and evaluate reasoning and generalisations, using mathematical language, representations and technologies reflect and identify the contribution of mathematics to their own and other people's lives 	Calculate Conserve Communiacate
	<ul style="list-style-type: none"> plan and conduct activities and investigations, using valid strategies and procedures to solve problems. 	Calculate Conserve
Knowledge and understanding		
<i>Number</i>	<ul style="list-style-type: none"> Rational numbers (integers, fractions and decimals) can be used to describe and solve problems involving rate, ratio, proportion and percentage. Problems can be interpreted and solved using rational and irrational numbers, including integers, simple powers and square roots, and conventions of the four operations to generate solutions using mental, written and technology-assisted strategies. 	Calculate Conserve
	<ul style="list-style-type: none"> Estimates with upper and lower boundaries can be formed. 	Calculate
<i>Measurement</i>	<ul style="list-style-type: none"> Instruments, technologies, strategies and formulas are used to estimate, compare calculate measures and derived measures, including rate, area, duration and Australian time zone differences. Relationships exist between units of equivalent measure and are used to make conversions of units. 	Calculate Conserve

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
<i>Chance and data</i>	<ul style="list-style-type: none"> Data can be gathered from samples and surveys, experiments and simulations, published data and databases, and used to estimate probabilities of events and to respond to claims and questions. Data interpretation is simplified through the use of suitable representations and descriptive statistics. Simple measures of spread and centre, distribution of responses, and the effect of bias and outliers on the measures of location are used to make inferences. 	Calculate Conserve Communicate
English Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_english_yr9.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> identify main ideas and the sequence of events, make inferences and draw conclusions based on their understanding of the reliability of ideas and information across texts construct non-literary texts by planning and organising subject matter according to specific text structure and referring to other texts 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> recognise and select vocabulary and interpret and apply literal and figurative language interpret and analyse how language elements and other aspects of texts position readers/viewers/listeners reflect on learning, apply new understandings and justify future applications 	Conserve Communicate
	<ul style="list-style-type: none"> demonstrate and analyse the relationship between audience, subject matter, purpose and text type construct literary texts by planning and developing subject matter, and manipulating language elements to present particular point of view reflect on and analyse how language choices position readers/viewers/listeners in particular ways for different purposes and can exclude information. 	Communicate
Knowledge and understanding		
<i>Reading and viewing</i>	<ul style="list-style-type: none"> Readers and viewers use a number of active comprehension strategies to interpret texts, including activating prior knowledge, predicting, questioning, identifying main ideas, inferring, monitoring, summarising and reflecting. Words, groups of words, visual resources and images can position an audience by presenting ideas and information and portraying people, characters, places, events and things in particular ways. 	Calculate Conserve Communicate
	<ul style="list-style-type: none"> Comprehension involves drawing on knowledge of the subject matter, contextual cues and intertextuality to interpret, infer from and evaluate texts in local, national or global contexts. Purposes for reading and viewing are identified and are supported by an analysis of texts based on an overview that includes skimming and scanning titles, visuals, headings and subheadings, font sizes, tables of contents, indexes, glossaries, topic sentences and references. 	Calculate Conserve
<i>Literary and non-literary texts</i>	<ul style="list-style-type: none"> Non-literary texts analyse, inform, argue and persuade. Non-literary texts can conclude with recommendations, restating the main arguments or summarising a position. 	Calculate Conserve
	<ul style="list-style-type: none"> Reasoning, points of view and judgments are supported by evidence that can refer to authority sources. 	Conserve

Curriculum connections

Queensland

Key Learning Area	Essential Learnings	Section
<i>Literary and non-literary texts cont.</i>	<ul style="list-style-type: none"> Audience can be positioned to view characters and ideas in particular ways and these views can be questioned. Feature articles, current affairs and news reports, formal letters, editorials, radio programs, film documentaries, reviews, biographies, advertisements, letters to the editor, expositions, formal meetings and debates, and extended presentations are types of non-literary text 	Communicate
<i>Speaking and listening</i>	<ul style="list-style-type: none"> The purpose of speaking and listening includes examining issues, evaluating opinions, convincing others, and managing relationships and transactions. Speakers and listeners use a number of strategies to make meaning, including identifying purpose, activating prior knowledge, responding, questioning, identifying main ideas, monitoring, summarising and reflecting. 	Conserve
<i>Writing and designing</i>	<ul style="list-style-type: none"> The purpose of writing and designing includes parodying, analysing and arguing. Words and phrases, symbols, images and audio affect meaning and establish and maintain roles and relationships to influence an audience. Writers and designers refer to authoritative sources and use a number of active writing strategies, including planning, drafting, revising, editing, proofreading, publishing and reflecting. 	Conserve Communicate
	<ul style="list-style-type: none"> Text users make choices about grammar and punctuation, to affect meaning. 	Communicate
<i>Language elements</i>	<ul style="list-style-type: none"> Vocabulary is chosen to establish roles and relationships with an audience, including the demonstration of personal authority and credibility. 	Conserve Communicate
	<ul style="list-style-type: none"> Paragraphs build and sustain cohesion and develop a central idea. Nominalisation (turning verbs into nouns) can be used to compress ideas and information, and to add formality to a text. Auditory, spoken, visual and nonverbal elements, including the use of sound fades, dissolves, cuts, hyperlinks, camera angles and shot types, can be combined to position an audience. 	Communicate
Arts Source: http://www.qsa.qld.edu.au/downloads/learning/qcar_el_arts_yr9.doc		
Ways of working		
	Students are able to <ul style="list-style-type: none"> create and shape arts works by manipulating arts elements to express meaning in different contexts. 	Conserve Communicate
Knowledge and understanding		
<i>Drama</i>	<ul style="list-style-type: none"> Drama elements are manipulated to create tension and status, and are used to express ideas. Roles, characters and relationships are interpreted to define motivation and purpose, using specific vocal and physical techniques. 	Conserve Communicate

Source: Queensland Studies Authority, <http://www.qsa.qld.edu.au>