


## Subject: Science



### Introduction



Countless resources available online support the embedding of a Catholic perspective into lessons across a wide range of school subjects. Some of these resources explicitly mention the teachings of Jesus and refer to scripture but most draw on the rich tradition of Catholic Social Teaching simply by virtue of the subject matter involved, their fostering of particular values and encouragement of learners' consideration of various ethical standpoints, without overt reference to religion at all. Regardless, the integration of key principles of Catholic Social Teaching across the curriculum strengthens and underlines the religious life and identity of Catholic schools.

In these grids, resources for English, Geography, Mathematics and Science learners in P-10 have been selected and arranged according to year level. They have been drawn from, in the main, Caritas, the Global Education Project and the Edmund Rice Centre. The grid shows which principles of Catholic Social Teaching are reinforced by each resource, a brief overview of the activities and the Australian Curriculum content and skills that are incorporated therein.



After finding the phase of schooling in which they teach (Early Years, Lower Primary, Middle Primary, Upper Primary, Lower Secondary or Middle Secondary), users may select a learning area in the right-hand column and find suitable activities on that basis or, alternatively, decide on a principle of Catholic Social Teaching they would like to cover, and identify which learning areas might be supported through the activities suggested.

	Activity	Curriculum
	<b>Lower Primary: F-2</b>	
<b>Caritas</b>	<p><b>Stewardship</b></p> <p>Celebrate creation as a gift from God. (See-Think-Wonder on illustration; 'Snapshots of Wonder' activity)</p> <p>Explore our responsibility to look the gift of creation. (Think-Pair-Share on illustration; Read Genesis 1:26; word cloud of things people do to care for environment with optional photos)</p> <p>Explore the choices of a good steward of creation. (Worksheet; Causes and consequences chart)</p> <p>Explain ways they can personally care for creation. (Choose one action and complete sentence: 'to look after Earth, I will...') <a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/lower-primary/stewardship-of-creation">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/lower-primary/stewardship-of-creation</a></p>	<p>Year 1 Science</p> <ul style="list-style-type: none"> <li>• People use science in their daily lives, including when caring for their environment and living things (ACSHE022)</li> </ul> <p>Year 2 Science</p> <ul style="list-style-type: none"> <li>• People use science in their daily lives, including when caring for their environment and living things (ACSHE035)</li> </ul> <p></p>

Global Education Project	<p><b>Stewardship: My place, your place</b></p> <p>Students explore why it is important to have a home, and reflect on what is essential for adequate housing. They investigate different styles of housing around the world and develop an awareness of environmental, cultural and economic factors that influence the kinds of homes people have.</p> <ul style="list-style-type: none"> <li>• <a href="#">Activity 1: Our homes</a></li> <li>• <a href="#">Activity 2: Homes in our neighbourhood</a></li> <li>• <a href="#">Activity 3: Homes around the world</a></li> <li>• <a href="#">Activity 4: Helping children feel at home</a></li> <li>• <a href="#">Activity 5: We all need a home</a></li> </ul>	<p>Science Foundation</p> <ul style="list-style-type: none"> <li>• Engage in discussions about observations and use methods such as drawing to represent ideas (AC SIS233)</li> <li>• Objects are made of materials that have observable properties (ACSSU003)</li> </ul> <p>Year 1</p> <ul style="list-style-type: none"> <li>• Use a range of methods to sort information, including drawings and provided tables (AC SIS027)</li> <li>• Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play (AC SIS029)</li> </ul> <p>Year 2</p> <ul style="list-style-type: none"> <li>• Use a range of methods to sort information, including drawings and provided tables (AC SIS040)</li> <li>• Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play (AC SIS042)</li> </ul> 
	<p><b>Middle Primary (3-4)</b></p>	
	<p><b>Stewardship of Creation</b></p> <p>Explore how God is revealed in the activity of the Holy Spirit- creation, Church and the human experience. (Consider a special place; Think-Pair-Share on 3 questions; Explore God's presence in creation' Read / view dreaming story; Explore spirituality of and/or feelings evoked by nature; read scripture; Create poster of favourite nature scene.)</p> <p>Explore accounts of creation in Genesis and begin to understand that they have the capacity to make choices and these choices have consequences. (Read comic; discuss sacred creation and God's wishes; discuss the fine balance of life on earth; discuss rubbish and habits; create an anchor chart; connect to God's presence in creation).</p> <p>Demonstrate ways of living in harmony with and caring for God's creation. (Read comic on Sao Paulo's rubbish problem and solution; discuss cause and lessons of situation; discuss consumerism in relation to special places nominated earlier)</p> <p>Consider a way to work together towards a solution to one environmental issue in the school or community. (Discuss problem and solution process; design a school-wide campaign)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/middle-primary-resources/stewardship-of-creation">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/middle-primary-resources/stewardship-of-creation</a></p>	<p>Year 4 Science</p> <ul style="list-style-type: none"> <li>• Science knowledge helps people to understand the effect of their actions (AC SHE062)</li> </ul> 
<p><b>Upper Primary (5-6)</b></p>		



<p><b>Preferential Option for the Poor</b></p> <p>Explore current personal understandings of justice. (Display editorial cartoon and conduct See-Think-Wonder discussion; Use 3Ts routine; Introduce inquiry question on justice for the poor; collect list of student questions and display)</p> <p>Investigate Church text teachings on caring for the poor. (Display and deconstruct excerpt from <i>Populorum Progressio</i> or alternative; discuss implications; paraphrase)</p> <p>Draw on Scripture and their own experiences of love and compassion to consider ways they can live and act. (Discuss understanding actions of Caritas; read mandate; discuss what this reveals; conduct group research task; read scripture passage and discuss in relation to research; complete consequences chart)</p> <p>Explore how we are all connected in the quest for justice for the poor (Review editorial cartoon; discuss meaning of 'preferential option for the poor' ; conduct sentence starter activity or answer questions to be presented visually)</p> <p>As a class or individually, <b>generate questions</b> they still have about justice for the poor.</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/upper-primary/preferential-option-for-the-poor">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/upper-primary/preferential-option-for-the-poor</a></p>	<p>Year 6 Science</p> <ul style="list-style-type: none"> <li>• Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE100)</li> <li>• Scientific knowledge is used to inform personal and community decisions (ACSHE220)</li> </ul> 
<p><b>Stewardship of Creation</b></p> <p>Identify issues of misuse and mismanagement in the environment. (Define 'steward' and explore source of stewardship; Explain principle – all creation; discuss relationships; emphasise God's self-revelation in humankind)</p> <p>Consider that the respect people show for nature and for all people is an expression of our relationship with God. (Investigate OT scriptures; consider implications using 'if... then' strategy; discuss God's requirements of humanity)</p> <p>Explore God's calls to us to act courageously in issues of environment justice. (Consider editorial cartoon; conduct Think-Pair-Share; discuss effect of individual choices on community; read and clarify Papal speech; Use RAPS strategy; illustrate paragraph; conduct 'Connect-Extend-Challenge' routine)</p> <p>Demonstrate and reflect on ways in which humanity can exercise stewardship. (Consider editorial cartoon and suggest appropriate speech bubbles; explain need for concern for poor; Prompt synthesis with work of Caritas; option – view suggested mockumentary)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/upper-primary/stewardship-of-creation">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/upper-primary/stewardship-of-creation</a></p>	<p>Year 6 Science</p> <ul style="list-style-type: none"> <li>• Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE100)</li> <li>• Scientific knowledge is used to inform personal and community decisions (ACSHE220)</li> </ul> 



Caritas

	<p><b>Solidarity</b></p> <p>Explore the values of just leaders. (Review part of comic; display poster; complete 'Think Pair Share'; review leadership qualities; complete values worksheet with discussion; complete leaders' values mapping activity; create large collaborative Y chart)</p> <p>Students investigate the call from Jesus for Justice. (Consider Christian leadership, incorporating scripture and Caritas PP; explain works of mercy; conduct pair work to find examples; consider global application, using resources provided; review definition of solidarity; discuss just leadership and solidarity)</p> <p>Students design a personal leadership covenant. (Create presentation on Christian leadership using suggested digital media and focus questions)</p> <p>Students participate in experiences of journaling and the Examen. (Explain the examen and lead individually or in a group)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/upper-primary/solidarity">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/upper-primary/solidarity</a></p>	<p>Year 6 Science</p> <ul style="list-style-type: none"> <li>Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE100)</li> <li>Scientific knowledge is used to inform personal and community decisions (ACSHE220)</li> </ul> 
Global Education Project	<p><b>Human Dignity, Preferential Option for the Poor, Subsidiarity, Stewardship, Common Good: Access to safe water and sanitation</b></p> <p>Students deepen their understanding of the need and right of all people in the world to have access to safe water and adequate sanitation for health and wellbeing. They investigate projects and initiatives to improve access to water and sanitation for communities in need and explore the importance of community involvement in helping to achieve lasting change.</p> <ul style="list-style-type: none"> <li><a href="#">Activity 1: Spotlight on staying healthy</a></li> <li><a href="#">Activity 2: Water collection and use</a></li> <li><a href="#">Activity 3: Giving water a lift</a></li> <li><a href="#">Activity 4: Cleaning muddy water</a></li> <li><a href="#">Activity 5: Water safe to drink</a></li> <li><a href="#">Activity 6: Community-led total sanitation</a></li> <li><a href="#">Activity 7: Multimedia presentation</a></li> <li><a href="#">Related activities</a></li> </ul>	<p>Science Year 5</p> <ul style="list-style-type: none"> <li>Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE083)</li> </ul> <p>Year 6</p> <ul style="list-style-type: none"> <li>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena (ACSHE098)</li> </ul>
	<p><b>Stewardship, Subsidiarity, Preferential Option for the Poor, Human Dignity: Disaster Preparedness</b></p> <p>Students investigate different kinds of disasters to develop an understanding of their causes, effects, and the types of assistance people and communities need to recover. They also explore how disaster preparedness can help to reduce the impact of disasters and build hope and resilience for the future.</p> <ul style="list-style-type: none"> <li><a href="#">Activity 1: When disaster strikes</a></li> <li><a href="#">Activity 2: Disaster preparedness</a></li> <li><a href="#">Activity 3: Earthquake preparedness</a></li> <li><a href="#">Activity 4: Researching disasters and risk reduction</a></li> </ul>	<p>Science Year 6</p> <ul style="list-style-type: none"> <li>Sudden geological changes or extreme weather conditions can affect Earth's surface (ACSSU096)</li> </ul> 

Lower Secondary (7-8)		
Caritas	<p><b>Preferential Option for the Poor</b></p> <p>Explore the concept of fair sharing through personal experiences. (Display poster; view film eliciting small group responses; generate response discussion using Placemat proforma; use suggested online tool/s to record and display class members' responses; introduce inquiry into nature of just world)</p> <p>Explore current understandings of justice. (Define 'preferential' and 'poor', perhaps using Visuwords; consider God's dream for just world; suggest ways in which this has been shared and what it looks like; explicit teachings of prophets; find Prophetic literature and identify aspects of justice canvassed therein; read Caritas Australia's Vision statement; discuss in relation to Caritas film.)</p> <p>Investigate God's dream for a just world – what is the preferential option for the poor? (Read Good Samaritan; connect to meaning of 'preferential option for the poor' and God's dream; brainstorm who the poor are today, locally and globally, perhaps using Bubble.us; use causes and consequences chart provided; pose reflection question; research Caritas project and complete Comparison worksheet)</p> <p>Explore how we are all connected in the quest for justice for the poor. (Explain pursuit of justice and Jesus' vision of right relationship and how we should act as a result; explain the nature of a motto; students design motto encapsulating commitment to 'preferential option for the poor' and how they wish to live it out; present in visual format)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/preferential-option-for-the-poor">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/preferential-option-for-the-poor</a></p>	<p>Year 7 Science</p> <ul style="list-style-type: none"> <li>Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations (ACSHE120)</li> </ul> <p>Year 8 Science</p> <ul style="list-style-type: none"> <li>Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations (ACSHE120)</li> </ul>
	<p><b>Stewardship of Creation</b></p> <p>Consider God's creation and our responsibility to look after it. (View first part of Caritas Stewardship film; read Genesis 1 and 2 and discuss implications; Use slides, natural environment and Think-Pair-Share to meditate on nature; point out Pope Francis' questions about responsible care of creation; illustrate nature psalm; introduce inquiry; display poster)</p> <p>Learn about looking after creation – respecting people. (View rest of Caritas Stewardship film; display slide and lead discussion; use text to prompt connection between care of creation and respect for others; we're all connected game)</p> <p>Explore Stewardship (Create short film; brainstorm questions and discuss)</p> <p>Work towards developing a moral conscience – 'be green' (Understand the power of our consumer choices; explain how conscience works; investigate how Jesus demonstrated behaviour towards others; complete Caritas 'decision-making' worksheet; add three new elements to show informed use of power)</p> <p>Decide what we can do? Being green and being ethical consumers. (Illustrate decision-making flow chart using one of a variety of modes suggested)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/stewardship-of-creation">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/stewardship-of-creation</a></p>	<p>Year 7 Science</p> <ul style="list-style-type: none"> <li>Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations (ACSHE120)</li> </ul> <p>Year 8 Science</p> <ul style="list-style-type: none"> <li>Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations (ACSHE135)</li> <li>Science understanding influences the development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management (ACSHE136)</li> </ul>



<p><b>Common Good</b></p> <p>Defining the Common Good. (View section of Caritas 'Common Good' film; use 'connect – extend – challenge' routine as outlined; introduce inquiry; display poster)</p> <p>Common Good in Scripture: Loving your neighbour and working as one. (View section of film; explain that common good is enshrined in Jesus' teachings; scripture hunt; complete scripture hunt worksheet; create three-window comic to illustrate)</p> <p>Social exclusion - discrimination. (View section of film; discuss given questions on threats or obstacles to the common good in various contexts; define discrimination; pairs write one-sentence description / headline; explain difference between prejudice and discrimination; discuss powerful and powerless in video)</p> <p>Christian attitudes towards prejudice and discrimination (Review principle of dignity; groups devise short drama to enact Bible verses provided; complete Caritas discrimination worksheet)</p> <p>What can I do for the good of all – family – school – society (social and political action) (Technology brainstorm; use presentation to explore how social media can be used for greater good; view part of film and discuss given points; small groups identify and blog about aspects of their own lives that need transformation)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/common-good">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/common-good</a></p>	<p>Year 7 Science</p> <ul style="list-style-type: none"> <li>Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations (ACSHE120)</li> </ul> <p>Year 8 Science</p> <ul style="list-style-type: none"> <li>Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations (ACSHE135)</li> </ul> 
<p><b>Middle Secondary (9-10)</b></p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Caritas</b></p> <p><b>Preferential Option for the Poor</b></p> <p>Explore the concept of fair sharing through personal experiences. (Display poster; view film eliciting small group responses;; view/read <i>The Hunger Games</i> and complete worksheet; display slides and assign groupwork – visual depiction of one statistic per group; pose questions for further discussion; introduce inquiry into nature of just world)</p> <p>Explore current understandings of justice. (In groups, investigate scripture and Church teaching references to concern for the poor; use reflection questions; summarise understanding of this principle)</p> <p>Investigate God's dream for a just world – what is the preferential option for the poor? (Group research and presentation task using suggested digital tools and inquiry questions; research Caritas project and complete Comparison worksheet)</p> <p>Explore how we are all connected in the quest for justice for the poor. (Explain pursuit of justice and Jesus' vision of right relationship and how we should act as a result; locate and compare/contrast a range of mission statements – Caritas', the school's and seven other NFP and business mission statements; Use Diamond Ranking System to classify these in order according to the principle of preferential option for the poor; pose questions to consider; review and complete Caritas worksheet on justice and charity; evaluate activities at school according to this classification and reflect on why both are important)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/preferential-option-for-the-poor">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/preferential-option-for-the-poor</a></p>	<p>Year 10 Science</p> <ul style="list-style-type: none"> <li>The values and needs of contemporary society can influence the focus of scientific research (ACSHE230)</li> </ul> 

<p><b>Human Dignity</b></p> <p>Explore the idea of God given dignity and worth. (Watch first part of Caritas dignity film; use worksheet or Encyclicals app to explore scripture and church teachings that underpin this CST principle to explore the centrality of this principle; use 3-2-1 method to summarise thinking; introduce the inquiry; display poster)</p> <p>Explore what dignity means in everyday life (Watch second part of Caritas dignity film; small group responses to film based on prompts; explain that dignity is inherent; students list challenges and realities that threaten human dignity' complete 'Unfair, Fairer' worksheet in small groups; reflect on meaning of dignity)</p> <p>Explore how we should honour each other's worth by upholding each other's rights (in groups or pairs, research aspect of 'global issues' page; complete 'problems and solutions' tree; show how Caritas is effecting change; present findings to class perhaps using webtool)</p> <p>Take up God's invitation to show his love to others – to love and care for myself and others. (Review lists of challenges; choose one and create an action plan using 'take action' worksheet)</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/dignity-of-the-human-person">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/dignity-of-the-human-person</a></p>	<p><a href="#">Year 10 Science</a></p> <ul style="list-style-type: none"> <li>• The values and needs of contemporary society can influence the focus of scientific research (ACSHE230)</li> </ul> 
<p><b>Stewardship of Creation</b></p> <p>Consider God's creation and our responsibility to look after it. (Watch Caritas Stewardship film, read Genesis 1 and 2 and discuss implications; work through slides 6-8, completing activities on sanctity of creation, Dreaming, attitudes to creation; analyse and display data collected; introduce the inquiry)</p> <p>Learn about looking after creation – respecting people. (View rest of Caritas Stewardship film; display slide and lead discussion; use text to prompt connection between care of creation and respect for others)</p> <p>Explore Stewardship (Create short film; brainstorm questions and discuss; Read slides 16-18 – Pope Francis' message; Use colour, symbol image routine to distil meaning; and share; complete Caritas 'culture of waste' worksheet)</p> <p>Work towards developing a moral conscience – 'be green' (Understand the power of our consumer choices; use 'Circle of Viewpoints' method to explore World Day of Peace paragraphs provided; brainstorm and explore a range of perspectives – prompting questions provided)</p> <p>Decide what we can do? Being green and being ethical consumers. (Consider Brazil case study in film. Link ideal and everyday life; group or class discussion or debate; create class 'Stewardship Action Plan')</p> <p><a href="http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/stewardship-of-creation">http://www.caritas.org.au/learn/catholic-social-teaching/educational-toolkit/secondary/stewardship-of-creation</a></p>	<p>Year 10 Science</p> <ul style="list-style-type: none"> <li>• People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions (ACSHE194)</li> <li>• The values and needs of contemporary society can influence the focus of scientific research (ACSHE230)</li> </ul> 

Global Education Project	<p><b>Common Good, Stewardship:</b>  <b>Genetic diversity and agriculture</b></p> <p>Students examine how communities manage genetic diversity in food crops to ensure food security. They plan an investigation to compare the choice to grow only one variety with the choice to grow a genetically diverse set of crops.</p> <ul style="list-style-type: none"> <li>• <a href="#">Activity 1: Investigating biodiversity in agriculture</a></li> <li>• <a href="#">Activity 2: Diversity and human impacts</a></li> <li>• <a href="#">Activity 3: Diversity in action</a></li> <li>• <a href="#">Activity 4: Planning an investigation</a></li> </ul>	<p>Science Year 9</p> <ul style="list-style-type: none"> <li>• Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)</li> <li>• The values and needs of contemporary society can influence the focus of scientific research (ACSHE228)</li> <li>• Formulate questions or hypotheses that can be investigated scientifically (ACSIS164)</li> <li>• Plan, select and use appropriate investigation methods, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (ACSIS165)</li> </ul> <p>Year10</p> <ul style="list-style-type: none"> <li>• The transmission of heritable characteristics from one generation to the next involves DNA and genes (ACSSU184)</li> <li>• The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185)</li> <li>• Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries (ACSHE192)</li> <li>• The values and needs of contemporary society can influence the focus of scientific research (ACSHE230)</li> <li>• Advances in science and emerging sciences and technologies can significantly affect people's lives, including generating new career opportunities (ACSHE195)</li> </ul> 