

Science and Technology outcomes, Early Stage 1	Content
<p><b>Physical World STe-5PW-ST</b> observes the way objects move and relates changes in motion to push and pull forces</p> <p><b>Material World STe-4MW-ST</b> identifies that objects are made of materials that have observable properties</p>	<p>Observe the way familiar objects move (ACSSU005) Observe the push and pull forces on familiar objects (ACSSU033)</p> <p>Observe and describe some properties of a range of materials (ACSSU003) Explore the use of materials in the built environment based on their properties Identify and describe how the properties of different materials suit their design purpose (ACTDEK004)</p>
Science and Technology outcomes, Stage 1	Content
<p><b>Physical World ST1-9PW-ST</b> investigates how forces and energy are used in products</p> <p><b>Material World ST1-7MW-T</b> describes how the properties of materials determine their use</p>	<p>Explore how technologies use forces to create movement in products (ACTDEK002)</p> <p>How do the properties of materials determine their use?</p>
Science and Technology outcomes, Stage 2	Content
<p><b>Physical World ST2-9PW-ST</b> describes how contact and non-contact forces affect an object's motion</p> <p><b>Material World ST2-7MW-T</b> investigates the suitability of natural and processed materials for a range of purposes</p>	<p>Explore some common sources and uses of electrical energy and describe different ways electrical energy can be generated sustainably (ACSSU219)</p> <p>Investigate how the properties of natural and processed materials influence their suitability and use in products, services and/or environments (ACSSU074, ACTDEK013) Identify the roles of people working in science and technology occupations</p>
Science and Technology outcomes, Stage 3	Content
<p><b>Physical World ST3-9PW-ST</b> investigates the effects of increasing or decreasing the strength of a specific contact or non-contact force</p> <p><b>Material World ST3-7MW-T</b> explains how the properties of materials determines their use for a range of purposes</p>	<p>Explore and describe some common contact or non-contact forces identify different types of energy transformations (ACSSU097) Describe examples where light, sound, heat and electrical energy transform from one type of energy to another Investigate characteristics and properties of a range of materials and evaluate the impact of their use Critique needs or opportunities for designing using sustainable materials</p>
Science Stage 4	Content
<p><b>Physical World</b> Describes the action of unbalanced forces in everyday situations SC4-10PW discusses how scientific understanding and technological developments have contributed to finding solutions to problems</p>	<p>PW1 Change to an object's motion is caused by unbalanced forces acting on the object. (ACSSU117)</p> <p>PW4 Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may</p>

involving energy transfers and transformations SC4-11PW SC4-11PW	impact on other areas of society and involve ethical considerations. (ACSHE120, ACSHE135)
<b>Science Stage 5</b>	<b>Content</b>
Physical World applies models, theories and laws to explain situations involving energy, force and motion SC5-10PW explains how scientific understanding about energy conservation, transfers and transformations is applied in systems SC5-11PW	PW2 The motion of objects can be described and predicted using the laws of physics. (ACSSU229) PW3 Scientific understanding of current electricity has resulted in technological developments designed to improve the efficiency in generation and use of electricity. PW4 Energy conservation in a system can be explained by describing energy transfers and transformations. (ACSSU190)
<b>History Outcomes, Stage 1</b>	<b>Content</b>
HT1-2 identifies and describes significant people, events, places and sites in the local community over time  HT1-3 describes the effects of changing technology on people's lives over time  HT1-4 demonstrates skills of historical inquiry and communication	<b>The Past in the Present</b> The history of a significant person, building, site or part of the natural environment in the local community and what it reveals about the past (ACHHK044)  The importance today of an historical site of cultural or spiritual significance; for example, a community building, a landmark, a war memorial (ACHHK045)  The impact of changing technology on people's lives (ACHHK046)
<b>History Outcomes, Stage 2</b>	<b>Content</b>
HT2-2 describes and explains how significant individuals, groups and events contributed to changes in the local community over time  HT2-5 applies skills of historical inquiry and communication'	<b>Community and Remembrance</b> ONE important example of change and ONE important example of continuity over time in the local community, region or state/territory (ACHHK061)
<b>Engineering Studies – Preliminary Course (year 11)</b>	<b>Content</b>
P2.1 describes the types of materials, components and processes and explains their implications for engineering development  P4.1 describes developments in technology and their impact on engineering products  P4.2 describes the influence of technological change on engineering and its effect on people	<b>Engineering application module 3:</b>  <b>Braking systems</b> Select one or more products related to braking systems as an introduction to engineering applications. Some examples include: the band brake, drum brake, disc brake, anti-lock braking systems (ABS) and regenerative braking systems, as well as the automotive handbrake.

P4.3 identifies the social, environmental and cultural implications of technological change in engineering	
<b>INDUSTRIAL TECHNOLOGY – AUTOMOTIVE Year 7-10</b>	<b>Content</b>
<p>Outcomes 5.3.1, 5.3.2, 5.5, 5.5.1, 5.6.1, 5.7.2</p> <ul style="list-style-type: none"> <li>• identify the major components of and differentiate between the operation of 2-stroke and 4-stroke motors</li> <li>• identify a range of power sources other than internal combustion engine, eg solar, wind, steam</li> <li>• identify and describe the major components in a 4-stroke single-cylinder engine</li> <li>• describe braking systems used in vehicles</li> <li>• identify major components of a selected braking system (drum brakes, leading shoe, trailing shoe, friction materials, disc brakes, fixed calliper and floating calliper)</li> <li>• perform basic maintenance and adjustment to a braking system</li> <li>• identify the major components of a fabricated chassis and differentiate between the processes and materials used in the construction of tube, triangulated, and ladder chassis</li> <li>• relate elementary industrial maintenance and/or repair techniques to work in the classroom</li> <li>• identify the functional aspects of automotive design</li> </ul>	<p>Power Sources</p> <ul style="list-style-type: none"> <li>• internal combustion engines including: <ul style="list-style-type: none"> <li>2-stroke</li> <li>4-stroke</li> <li>alternative sources of power</li> </ul> </li> </ul> <p>Engine and related systems</p> <ul style="list-style-type: none"> <li>• method of operation of a 2-stroke motor</li> <li>• 4-stroke single-cylinder engine</li> </ul> <p>Chassis and related components</p> <ul style="list-style-type: none"> <li>• braking systems</li> <li>• chassis construction methods</li> </ul> <p>Links to Industry</p> <ul style="list-style-type: none"> <li>• list career paths in automotive industries</li> <li>• traditional, current and emerging technologies that relate to the automotive industry</li> </ul> <p>Design</p> <ul style="list-style-type: none"> <li>• design principles and processes related to engine components</li> <li>• material lists</li> </ul>
<b>Textiles and Design – HSC Year 12</b>	<b>Content</b>
<p><b>H3.2</b> The student develops knowledge and awareness of emerging textile technologies.</p>	<p><b>Properties and performance of textiles</b> In the area of study: <i>Properties and performance of textiles</i> innovation and technological advances in the use of textiles to enhance performance, and finishing techniques to enhance fabric performance. Used in motor racing.</p>