

# Design Technology



## Design Technology with links to Sustainable Travel KS2 – Vehicles

### Links to: Science - materials and electricity; Maths - data handling for design briefs

<b>Objectives:</b>	<p><b>Design</b></p> <ul style="list-style-type: none"> <li>• use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</li> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world</li> </ul>
<b>Success Criteria:</b>	<ul style="list-style-type: none"> <li>• Use of research to inform ideas that have a particular purpose</li> <li>• Ideas generated and communicated in appropriate forms</li> <li>• Tools and equipment selected appropriately for the task and reasons given for choices</li> <li>• skills performed successfully</li> <li>• materials selected to meet the design and reasons given for choices</li> <li>• finished task evaluated against existing products and comparisons made</li> <li>• ways of improving design discussed</li> <li>• Understanding of the impact that key designers have made</li> </ul>
<p><b>QCA Unit to be adapted for Sustainable Travel: 6D Controllable Vehicles</b>  <a href="http://webarchive.nationalarchives.gov.uk/20090608182316/http://standards.dfes.gov.uk/schemes2/designtech/det6d/?view=Download">http://webarchive.nationalarchives.gov.uk/20090608182316/http://standards.dfes.gov.uk/schemes2/designtech/det6d/?view=Download</a></p> <p>In this unit, children develop their understanding of how products can be driven by electricity. They learn how to use motors within their models and how to control the speed and direction of movement. They develop their designing skills by using their own ideas and experiences to produce clearly labelled drawings. They use construction kits and a range of materials and components to develop their skills, knowledge and understanding. The children will produce a framework structure that will be controlled by an electrical circuit. The children will develop this structure with cladding and appropriate finishing techniques to create a quality product.</p> <p>The vehicles made in this unit could be linked to the computer using appropriate equipment and software to enable children to experience writing procedures to control the movement and direction of their vehicles. This unit could be adapted by focusing on a particular type of vehicle <i>e.g. a circus vehicle, a carnival float, a moon buggy, a vehicle for transporting a particular load.</i></p> <p><b>Sustainable Travel Research suggestions – children to make their vehicle energy-smart</b></p> <ul style="list-style-type: none"> <li>• Energy-smart inventions: <a href="http://www.alliantenergykids.com/EnergyandTheEnvironment/Energy-SmartInventions/">http://www.alliantenergykids.com/EnergyandTheEnvironment/Energy-SmartInventions/</a></li> <li>• Car inventors: <a href="http://www.thekidswindow.co.uk/News/History_Of_Cars.htm">http://www.thekidswindow.co.uk/News/History_Of_Cars.htm</a></li> <li>• Carriages and bikes: <a href="http://primaryhomeworkhelp.co.uk/victorians/carriages.html">http://primaryhomeworkhelp.co.uk/victorians/carriages.html</a></li> <li>• Hot air balloons: <a href="http://inventors.about.com/od/astartinventions/ss/airship_2.htm">http://inventors.about.com/od/astartinventions/ss/airship_2.htm</a></li> <li>• Samuel Cody – Aviation: <a href="http://www3.hants.gov.uk/aldershot-museum/local-history-aldershot/samuel-franklin-cody/kites-and-flying-machines.htm">http://www3.hants.gov.uk/aldershot-museum/local-history-aldershot/samuel-franklin-cody/kites-and-flying-machines.htm</a></li> </ul>	<p><b>Resources</b></p> <ul style="list-style-type: none"> <li>• examples of a variety of controllable toy vehicles</li> <li>• construction kits</li> <li>• wire, crocodile leads, switches, aluminium foil</li> <li>• batteries, battery holders, battery snaps</li> <li>• motors, motor mounting clips</li> <li>• pulleys (large and small), elastic bands</li> <li>• square section wood, doweling, wheels, card triangles, glue</li> <li>• plastic tubing</li> <li>• thin and thick card, corrugated plastic</li> <li>• materials for finishing <i>e.g. coloured papers, foil, fabric, coloured pens, paint</i></li> <li>• scissors, snips, saws, cutting jigs <i>e.g. bench hooks, mitre blocks</i></li> <li>• gluing jigs for square section wood, wire strippers</li> </ul> <p><b>Assessment</b></p> <ul style="list-style-type: none"> <li>• Can use research to inform ideas that have a particular purpose</li> <li>• Can generate ideas and communicate them in appropriate forms</li> <li>• Can select tools and equipment appropriately for the task and reasons given for choices</li> <li>• Can perform skills successfully</li> <li>• Can select materials to meet the design and give reasons for choices</li> <li>• Can evaluate finished task against existing products and make comparisons</li> <li>• Can articulate ways of improving designs</li> <li>• Can understand of the impact that key designers have made</li> </ul>