

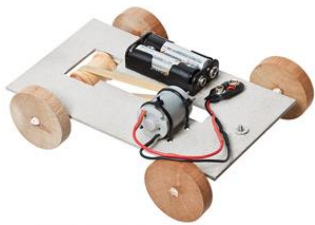
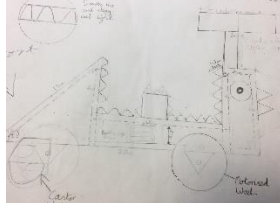
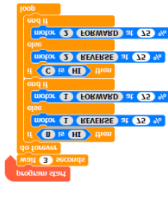

Design Technology

Programming and Mechanical Systems Year 6

National curriculum	Vocabulary
<p>KS2</p> <p>Design To 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. To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Make To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. To 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.</p> <p>Evaluate To investigate and analyse a range of existing products. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. To understand how key events and individuals in design and technology have helped shape the world</p>	<p>Control Program Crumble Gear Mechanism Motor Speed Force Energy Circuits Pneumatics Structure Strengthen Input Output USB port</p>

Investigate Technical knowledge	Design	Make	Evaluate
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Year 5 / 6

Generate ideas through brainstorming and identify a purpose for their product	Communicate their ideas through detailed labelled drawings	Select appropriate tools, materials, components and techniques Assemble components make working models Use tools safely and accurately	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests
			

Learning Objective	Lesson outline
<p>Lesson 1: Investigate/practical</p> <p>LO: To be able to critically evaluate the quality of the design, manufacture and fitness for the products as they design and make</p> <p>DT Skills: Develop a design specification</p>	<p>Look at videos of robot wars and explain the design criteria</p> <p>What features do you like?</p> <p>What must your robot do?</p> <p>How will you strengthen it? What weapons will it have?</p>
<p>Lesson 2: Investigate/practical</p>	<p>Gears and how they work- use electrical equipment to make a gear and show how it can be used to move an axel.</p> <p>A gear is a wheel with teeth, or cogs, around the edges. Gears are used in cars, watches,</p>

<p>LO: To be able to use electrical programmable circuits and gears</p> <p>DT Skills: Assemble components make working models</p>	<p>carousels, tin openers and more! Sometimes, gears are called 'cogs. As gears turn, energy is transferred. Gears are useful for changing speed or force.</p> <p>Recap pneumatics, crumble controllers, circuits, strengthening structures</p>	
<p>Lesson 3: Design</p> <p>LO: To design a vehicle with gears and other computer-controlled elements</p> <p>DT Skills: Communicate their ideas through detailed labelled drawings</p>	<p>Design a robot wars vehicle to meet the design criteria.</p> <p>There should be an overall design and an exploded diagram showing how the gear works.</p> <p>The design should also include measurements.</p>	
<p>Lesson 4/5: Making</p> <p>LO: To be able to make a high-quality product incorporating gears and a programmable electrical system</p> <p>DT Skills: Select appropriate tools, materials, components and techniques</p> <p>Assemble components make working models</p> <p>Use tools safely and accurately</p>	<p>Make the vehicle structure and gears</p> <p>Add extra components such as pneumatic moving parts, flashing lights etc</p>	
<p>Lesson 6: Evaluate</p> <p>LO: To be able to evaluate their ideas against an original design specification</p> <p>DT Skills: Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests</p>	<p>Evaluate and demonstrate vehicle</p>	
<p>Working towards</p>	<p>End of unit assessment</p> <p>Working at Age related expectations</p>	<p>Working at a greater depth</p>