

KS2 DT		Year 6 - Summer - Electrical Systems- Fairground rides	
Design		Make	Evaluate
- List tools needed before starting the activity. - Plan the sequence of work e.g. using a storyboard. - Record ideas using annotated diagrams. - Use models, kits and drawings to help formulate design ideas. - Combine modelling and drawing to refine ideas. - Devise step by step plans which can be read / followed by someone else. - Use exploded diagrams and cross-sectional diagrams to communicate ideas. - Sketch and model alternative ideas. - Decide which design idea to develop.		- Make prototypes. - Develop one idea in depth. - Use researched information to inform decisions. - Produce detailed lists of ingredients / components / materials and tools. - Use a computer to model ideas. - Select from and use a wide range of tools. - Cut accurately and safely to a marked line. - Select from and use a wide range of materials. - Use appropriate finishing techniques for the project. - Refine their product - review and rework/improve.	- Research and evaluate existing products (including book and web based research). - Consider user and purpose. - Identify the strengths and weaknesses of their design ideas. - Give a report using correct technical vocabulary. - Consider and explain how the finished product could be improved related to design criteria. - Discuss how well the finished product meets the design criteria of the user. Test on the user! - Understand how key people have influenced design.
Key Learning		Vocabulary	Inventor- Thomas Bradshaw
- Develop a technical vocabulary appropriate to the project. - Use mechanical systems such as cams, pulleys and gears. - Use electrical systems such as motors. - Program, monitor and control using ICT.		- reed switch, toggle switch, push-to-make switch, pushto-break switch, - light dependent resistor (LDR), tilt switch, light emitting diode (LED), - bulb, bulb holder, - battery, battery holder, USB cable, wire, insulator, conductor, - crocodile clip control, - program, system input device, output device, series circuit, parallel circuit	 Thomas Bradshaw was the inventor of the first steam-powered carousel in 1861, a groundbreaking development that transformed fairground rides by using a steam engine for power instead of manual or animal labour.
National Curriculum links:			

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- Critique, evaluate and test their ideas and products and the work of others

Design	Make	Evaluate	Technical knowledge
• 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 • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	• Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • 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	• Investigate and analyse a range of existing products • Evaluate their ideas and products against their own design criteria and consider the views of others to improve • Understand how key events and individuals in design and technology have helped shape the world shape the world	• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products.