Whitefield Primary School – Long Term Curriculum Overview – Key Stage 2

DT – Year 6

All DT should follow 4 stages:

- RESEARCH - artists, designers, make notes, take photos, explore likes, dislikes, (this will inspire own ideas)
- DEVELOP OWN IDEAS – practise skills and own ideas, try things out
- MAKE FINAL IDEA
- EVALUATE – successes? changes ? improvements?

	Autumn 1	Autumn 2	Spring 1 DT	Spring 2 DT	Summer 1	Summer 2 DT
Year 6			*LC – Could You Be The Next Nintendo Apprentice?* **Electrical systems-more complex switches and circuits** **Design, make and evaluate a game for children to play** Use Projects on a page Y5/6 – Electrical systems **RESEARCH AND KNOWLEDGE** Discuss a range of relevant products that respond to change in the environment using a computer control program e.g. automatic lights alarm systems security lighting vehicle alarms Discuss: who have the products been designed for?	*LC – What Was It Like To Be An Ancient Egyptian?* **Mechanical systems- pulleys or gears** How were the pyramids built? **Design, make and evaluate a pulley system to move an object.** Use Projects on a page Y5/6 – Mechanical systems **RESEARCH AND KNOWLEDGE** Research and discuss a range of existing everyday products and toys that use pulley or gear systems. Use videos or photos of products that cannot be explored through firsthand experience. Use observational drawings, annotated notes and questions to evaluate these products in sketchbook. Discuss: how innovative is the product?		*LC – How did WW2 Affect The Lives Of Liverpool People?* **Food** Explore healthy and nutritious food. Design, make and evaluate a pastry based product – a Woolton pie after Lord Woolton a pastry dish of vegetables widely served in Britain in WW11 when rationing and shortages made other dishes hard to prepare. **RESEARCH AND KNOWLEDGE**

			Why have the products been designed, for what purpose? How and why is a computer control program used to operate the products? What are the input devices used? (e.g. switches, sensors) What are the output devices? (e.g. bulbs, buzzers) Research and investigate electrical sensors e.g. LDRS- light dependent resistors, different switches. How does the user operate them? Know and use technical vocabulary relevant to this project. Recap dangers of mains electricity. Research a famous inventor - THOMAS EDISON and invention of the light bulb. **DEVELOP OWN IDEAS** Practise skills and ideas by trying things out. Recap through demonstration and explanation, measuring, marking out, cutting and joining skills with construction materials, so children can start to create their own electrical products. Practise methods for securing electrical connections e.g. using wire	What type of movement can be seen? What mechanical components can be seen? Where are the mechanical components in the product? Identify the input, process and output of the system. Does the product work well? What materials have been used in the making of the product? Is it designed well? What is the purpose of the pulley or gear system? Does it speed up, slow down or change the direction of movement in the product? Know and use technical vocabulary relevant to this project. Research, if possible visit engineering and manufacturing companies relevant to product they are making e.g. JCB **DEVELOP OWN IDEAS** Practise skills and ideas by trying things out. Use construction kits to investigate combinations of two different sized pulleys to learn about direction and speed of rotation e.g. How many times does the smaller pulley turn each time the larger pulley turns once? Do the pulleys move in the same direction? How can you reverse the direction of rotation?		Research rationing during the Second World War. Questions to consider: What was it? When and why was it introduced? Who did it affect? How was it organised? How did people respond to rationing? What foods were rationed? How were different foods rationed? How long did it last? Was it a success? Advantages/disadvantages? Research different wartime rationing dishes and recipes. Record in DT book and responses to them. Research the Woolton pie and how it was made. **DEVELOP OWN IDEAS** Practise skills and ideas by trying things out. Create own recipe based on research and recipes investigated. **MAKE FINAL IDEA**

			strippers, twisting and taping electrical connections, screw connections Practise making different circuits, in series and parallel to control a product Learn about short circuits when using electrical equipment and how to avoid making them. After practising skills develop a design specification for own product identifying the purpose and needs of the user. Make annotated sketches, pictorial representations of circuits and show any changes made in the design process. Identify step by step plan for making final product. Identify in sketchbook a list of equipment, materials and tools needed. Identify any tasks or roles if working in a team. Take photos of steps involved and log in sketchbook and on Seesaw. **MAKE FINAL IDEA** Make a high quality product applying the knowledge, skills and understanding from previous strands. Competently select and accurately assemble materials and securely connect electrical components to	Record responses in sketchbook and on Seesaw. Take photos of investigation. Demonstrate use of tools and equipment, measuring, marking, cutting-, shaping and joining skills including junior hacksaws, G clamps, card triangles etc to construct wood frames as appropriate. Let children practise improving accuracy of using these tools. Take photos and evaluate throughout. After practising skills develop a design specification for own product identifying the purpose and needs of the user. Make annotated sketches, pictorial representations and show any changes made in the design process. Identify step by step plan for making final product. Identify in sketchbook a list of equipment, materials and tools needed. Identify any tasks or roles if working in a team. Take photos of steps involved and log in sketchbook and on Seesaw. **MAKE FINAL IDEA** Make a high quality well finished product applying the knowledge, skills and understanding from previous strands.		Know the importance of hygiene and working safely following instructions. Make a Woolton pie to be served at a VE party using rationed wartime food. Prepare ingredients. Make a list of ingredients and utensils needed. Accurately measure ingredients and assemble product using a range of food preparation skills and utensils. Evaluate throughout the process and make modifications as necessary. **EVALUATE** Critically evaluate throughout the making process and refer to the design plan. Take photos as the product is made and record in sketchbook and on Seesaw. Make observations about appearance, smell, texture and taste.

			produce a reliable and functional product. Critically evaluate throughout the making process and refer to the design plan. Take photos as the product is made and record in sketchbook and on Seesaw. **EVALUATE** Continually evaluate and modify product to match the design specification. Test the system to demonstrate its effectiveness for the user and its purpose. Does it successfully meet the project title? **DESIGN AN ELECTRICAL GAME FOR CHILDREN TO PLAY** (using more complex switches and circuits)	Add any decorative finishing techniques to final product. Critically evaluate throughout the making process and refer to the design plan. Take photos as the product is made and record in sketchbook and on Seesaw. **EVALUATE** Evaluate throughout and the final product in use. How does it compare to the original design specification? Is the design high quality? Does the product function effectively?		What went well and what might be changed to improve the final product?