Yearly Overview **Subject: DT** **Year Group: 6**

DT Primary - Project on a page	Autumn 2	Summer 1	Summer 2
Unit of work	**Food - Celebrating culture and seasonality** https://drive.google.com/file/d/1fNbO0usqC-En8Fhuo_QmIqqhmnGnM8SM/view?usp=sharing	**Electrical Systems - More complex switches and circuits** https://drive.google.com/file/d/1uVFIBGGm7-msUlXTOdq243iZHcYtTGx6/view?usp=sharing	**Structures - Frame structures** https://drive.google.com/file/d/1eoOY4uX_n7E9eBzmGE9OkMISuRc_A5Bb/view?usp=sharing
NC Objectives (Linked to Programme of Study)	The national curriculum for design and technology aims to ensure that all pupils: • 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 and prototypes. • 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 their work. • apply their understanding of how to strengthen, stiffen and reinforce more complex structures. • 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. • understand and apply the principles of a healthy and varied diet • prepare and cook a savoury dishes using a range of cooking techniques • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.		
Project title	**Savoury Muffins**	**Electrical board game**	**Playground shelter**
Prior Knowledge	• Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. • Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients.	• Understanding of the essential characteristics of a series circuit and experience of creating a battery-powered, functional, electrical product. • Initial experience of using computer control software and an interface box or a standalone box, e.g. writing and modifying a program to make a light flash on and off.	• Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials. • Basic understanding of what structures are and how they can be made stronger, stiffer and more stable.

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Composite knowledge	Design, make and evaluate making muffins (product) for the family (user) for lunch (purpose)	Design, make and evaluate a board game (product) for the class(user) to assess understanding of a topic (purpose)	Design, make and evaluate a shelter (product) for the children in the playground (user) to protect them when it rains (purpose)
Learning objectives	1. To understand that ingredients can either be sourced locally or from overseas. 2. To research and design a healthy muffin. 3. To create a healthy muffin. 4. To evaluate their final product.	1. To research electrical board games and their key components. 2. To sketch and design an electrical board game. 3. To create an electrical board game. 4. To evaluate their final product.	1. To research different shelters and their uses. 2. To design a prototype shelter 3. To make the prototype shelter 4. To evaluate their final product
Key Questions	1. Who have the products been designed for and for what purpose? 2. What ingredients are sourced locally/in the UK/from overseas? 3. What are the key ingredients needed to make a particular product? 4. How have ingredients been processed? 5. What is the nutritional value of a product? 6. How can you improve the design?	1. Who have the products been designed for and for what purpose? 2. What key components are needed in an electrical board game? 3. What input devices have been used? 4. How can you improve the design?	1. Who have the products been designed for and for what purpose? 2. How well does the frame structure meet users' needs and purposes? 3. How would the framework be strengthened, reinforced and stiffened? 4. How does the shape of the framework affect its strength? 5. How can you improve the design?
Component / knowledge (Key Concepts)	**Technical knowledge and understanding** • Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary. **Designing** • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas and make design decisions to develop a final product linked to user and purpose. • Use words, annotated sketches and information and	**Technical knowledge and understanding** • Understand and use electrical systems in their products. • Know and use technical vocabulary relevant to the project. **Designing** • Generate and develop innovative ideas and share and clarify these through discussion. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. **Making** • Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. • Competently select and accurately assemble	**Technical knowledge and understanding** • Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project. **Designing** • Carry out research into user needs and existing products web-based resources. • Develop a simple design specification to guide the development of their ideas and products. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. **Making** • Formulate a clear plan, including a step-by-step list

	communication technology as appropriate to develop and communicate ideas. **Making** • Write a step-by-step recipe, including a list of ingredients, equipment and utensils • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Make, decorate and present the food product appropriately for the intended user and purpose. **Evaluating** • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.	materials, and securely connect electrical components to produce a reliable, functional product. **Evaluating** • Continually evaluate and modify the working features of the product to match the initial design specification. • Test the system to demonstrate its effectiveness for the intended user and purpose. • Investigate famous inventors who developed ground-breaking electrical systems and components. (Science)	of what needs to be done and lists of resources to be used. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** • Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.
Vocabulary	Gluten, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, pour, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart	frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, design brief, design specification, prototype, innovation, functional
Cross-curricular links	**PSHE - Healthy lifestyle**	**Science - Electricity**	**Sustainability**