YEAR 6

DT Progression Overview

	Shell Structures	Cooking and Nutrition	Systems Mechanical
Big Idea	Agents for change Asia - palm oil and the vegetation belt	Ancient Ancestors The Ancient Greeks	Through the ages History on our Doorstep (WW2)
Project on a page	Frame structures (progression link -shell structures Y3)	Celebrating culture and seasonality (cooking/ nutrition progression Y3,4 and 5)	Monitoring and Control (progression from circuits and switches in Y3)
Suggested activities	• Structures- Survival Tents	• Celebrating Culture and Seasonality - Greek food	• Design and make a functional product that responds automatically to changes in the environment. - Air raid siren / shelter
Famous in the Field	Knowledge of different tent designs/designers	Origins of chilli/ south american cookery/chefs	Look at famous alarm systems
Design	• Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.	• 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 communication technology as appropriate to develop and communicate ideas.	• Develop a design specification for a functional product that responds automatically to changes in the environment. • Generate, develop and communicate ideas through discussion, annotated sketches and pictorial representations of electrical circuits for circuit diagrams.
Make	• Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and 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.	• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and Components. • Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. • Create and modify a computer control program to enable their electrical product to respond to changes in the environment.
Evaluate	• 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. • Research key events and individuals relevant to frame structures.	• 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. • Understand how key chefs have influenced eating habits to promote varied and healthy diets.	• 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.
Technical Knowledge and Understanding	• Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project.	• 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.	• Understand and use electrical systems in their products. • Understand the use of computer control systems in products. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project.
Prior Learning	• 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.	• 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.	• Initial experience of using computer control software and an interface box, a standalone box or microcontroller, e.g. Crumble. • Some experience of writing and modifying a program to make a light turn on or flash on and off. • Understanding of the essential characteristics of a series circuit and experience of creating a battery-powered, functional, electrical product.
Key Vocabulary	frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble design specification,	reed switch, toggle switch, push-to-make switch, push-to-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 function, innovative, design specification, design brief, user, purpose

		innovative, research, evaluate, design brief	