	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Stone Age to Iron Age	Stone Age to Iron Age	Ancient Civilisations - Shang Dynasty Focus	Four Ancient Civilizations: Shang, Egypt, Sumer, Indus Valley	Four Ancient Civilizations: Shang, Egypt, Sumer, Indus Valley	UK Study: The Northwest & Manchester
National Curriculum Learning Intentions	Design - 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. Make - 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. Evaluate - 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; • understand how key events and individuals in design and technology have helped shape the world Technical Knowledge - 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. Cooking and Nutrition - understand and apply the principles of a healthy and varied diet; • prepare and cook a variety of predominantly 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.					
DT Units	Shell Structures (Christmas Gift Box		Electrical Systems (Linked to Computing) Programmable Toy		Levers and Linkages Pop up Card	
Designing	Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas		Gather information about users' needs and wants, and develop design criteria to inform the design of products that are fit for purpose. Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.		Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. Use annotated sketches and prototypes to develop, model and communicate ideas.	
Making	Order the main stages of making. Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. Explain their choice of materials according to functional properties and aesthetic qualities. Use finishing techniques suitable for the product they are creating.		Order the main stages of making. Select from and use tools and equipment to cut, shape, join and finish with some accuracy. Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. Program a standalone control box, microcontroller or interface box to enhance the way the product works.		Order the main stages of making. Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. Select from and use finishing techniques suitable for the product they are creating.	
Evaluating	Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. Test and evaluate their own products against design criteria and the intended user and purpose.		Investigate and analyse a range of existing battery-powered products, including pre programmed and programmable products. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.		Investigate and analyse books and, where available, other products with lever and linkage mechanisms. Evaluate their own products and ideas against criteria and user needs, as they design and make	
Technical Knowledge	Develop and use knowledge of how to construct strong, stiff shell structures. Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. Know and use technical vocabulary relevant to the project		Understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers. Know and use technical vocabulary relevant to the project.		Understand and use lever and linkage mechanisms. Distinguish between fixed and loose pivots. Know and use technical vocabulary relevant to the project.	
Resources	collection of shell, structures for different, purposes and users. card, squared paper, coloured paper, adhesive tape, masking tape, PVA glue, glue spreaders, acetate sheet, pencils, felt-tip pens, rulers, scissors		Crumble Kits Chromebooks		books and other products with lever and linkage, mechanisms, lever and linkage, card strips, card rectangles, paper, masking tape, split pins, paper binders, stick glue, scissors, card drill	
Vocabulary	shell structure, three-dimensional (3-D), shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity		control, program, system, input device, output device, process		mechanism, lever, linkage, pivot, slot, input, process, output, user, purpose, function, prototype, design criteria, appealing	

Year 3 DT Skills and Knowledge Overview