Laughton All Saints C of E Primary School LKS2 Design & Technology
Progression Grid

	Disciplinary Knowledge				
	Mechanisms (choose 1)	**Structures (CAD)**	**Food**	**Textiles**	**Electrical Systems**
Lower Key Stage 2	**Designing** • 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 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 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.	**Designing** • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. • Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas. **Making** • Plan the order of the main stages of making. • Select and use appropriate tools and software 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 computer-generated finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and evaluate a range of shell structures including the materials,	**Designing** • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. **Making** • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Select from a range of ingredients to make appropriate food	**Designing** • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Produce annotated sketches, prototypes, final product sketches and pattern pieces. **Making** • Plan the main stages of making. • Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. • Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. **Evaluating** • Investigate a range of 3-D textile products relevant to the project. • Test their product against the original	**Designing** • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making (Simple Circuits & Switches)** • Order the main stages of making. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. **Making (programming and control** • 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. **Evaluating** • Investigate and analyse a range of existing battery-powered products.

	.	components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose.	products, thinking about sensory characteristics. **Evaluating** • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.	design criteria and with the intended user. • Take into account others' views. • Understand how a key event/individual has influenced the development of the chosen product and/or fabric.	• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.
	Substantive Knowledge				
	Mechanisms	**Structures (CAD)**	**Food**	**Textiles**	**Electrical Systems**
	Levers and Linkages • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project **Pneumatics** Understand and use pneumatic mechanisms. • Know and use technical vocabulary relevant to the project.	• Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Develop and use knowledge of how to construct strong, stiff shell structures. • Know and use technical vocabulary relevant to the project.	• Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately	• Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project.	**Simple circuits and switches** Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project. **Programming and Control** 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.

	Vocabulary				
	Mechanisms	**Structures (CAD)**	**Food**	**Textiles**	**Electrical Systems**
	Levers and Linkages Mechanism Lever Linkage Slot Guide or bridge Loose pivot Fixed pivot System **Pneumatics** Compressed Input Output Pivot Lever Pneumatic Hydraulic Pressure Inflate Deflate Syringe System	**CAD – Computer-Aided Design** Shell structure Edge Face Vertex Font Net Cuboid Prism	Appearance Texture Sensory evaluation – Preference test Strawberry huller Processed food	Appliqué Pattern/Template Seam Seam Allowance Prototype Aesthetics	**Simple circuits and switches** Circuit Conductor Insulator Prototype Push-to-break switch Push-to-make switch Reed switch Toggle switch System Output devices Input devices **Programming and Control** Program Microcontroller Light emitting diode (LED) System Output devices Input devices Process