

## Design Technology (DT)

### Milestone LKS2

### Cycle 2023-2024

The expected level on this milestone represents the required level for a Year 4 child.

Structures (Shell Structures including CAD)	Basic:	Expected:	Deep:
<b>Prior Learning/ Experiences</b>			
Experience of using different joining, cutting and finishing techniques with paper and card.			
A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science.			
Familiarity with general purpose software that can be used to draw accurate shapes, such as Microsoft Word, or simple computer-aided design (CAD)			
<b>Designing</b>			
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.			
<b>Making</b>			
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.			
<b>Evaluating</b>			
Investigate and evaluate a range of 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.			
<b>Technical knowledge and understanding</b>			
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.			

**Design Technology (DT)**

**Milestone LKS2**

**Cycle 2023-2024**

<b>Food (Healthy and Varied Diet)</b>	<b>Basic:</b>	<b>Expected:</b>	<b>Deep:</b>
<b>Prior Learning/ Experiences</b>			
Knows some ways to prepare ingredients safely and hygienically.			
Have some basic knowledge of and understanding of healthy eating and the eat well plate.			
Have used equipment or some equipment and utensils and prepared and combined ingredients to make a product.			
<b>Designing</b>			
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.			
<b>Making</b>			
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 products thinking about sensory characteristics.			
<b>Evaluating</b>			
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.			
<b>Technical knowledge and understanding</b>			
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 and vocabulary appropriately.			

**Design Technology (DT)**

**Milestone LKS2**

**Cycle 2023-2024**

<b>Electrical Systems (Simple Circuits &amp; Switches)</b>	<b>Basic:</b>	<b>Expected:</b>	<b>Deep:</b>
<b>Prior Learning/ Experiences</b>			
Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers.			
Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.			
<b>Designing</b>			
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.			
<b>Making</b>			
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.			
<b>Evaluating</b>			
Investigate and analyse a range of existing battery-powered products.			
Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.			
<b>Technical knowledge and understanding</b>			
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.			

**Design Technology (DT)**

**Milestone LKS2**

**Cycle 2023-2024**

Electrical Systems (Simple Programming & Control)	Basic:	Expected:	Deep:
<b>Prior Learning/ Experiences</b>			
Constructed a simple series electrical circuit, using bulbs, batteries, switches and buzzers.			
Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.			
<b>Designing</b>			
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.			
<b>Making</b>			
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.			
<b>Evaluating</b>			
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.			
<b>Technical knowledge and understanding</b>			
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.			

**Design Technology (DT)**

**Milestone LKS2**

**Cycle 2023-2024**