

## Milestones

### Design Technology (DT)

#### Cycle B

It is our aim that children in Year 4 will be achieving at the Basic level as they begin their journey of experiencing these areas of the Design Technology curriculum. Year 5 children will achieve the 'Basic' to 'Expected' levels and Year 6 children will be achieving at the 'Expected' and 'Deep' level.

<b>Mechanical Systems (Levers &amp; Linkages)</b>	<b>Basic :</b>	<b>Expected:</b>	<b>Deep:</b>
<b>Prior Learning/ Experiences</b>			
Explored and used mechanisms such as flaps, sliders and levers.			
Gained experience of basic cutting, joining and finishing techniques with paper and card.			
<b>Designing</b>			
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.			
<b>Making</b>			
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.			
<b>Evaluating</b>			
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.			
<b>Technical knowledge and understanding</b>			
Understand and use lever and linkage mechanisms.			
Distinguish between fixed and loose pivots.			
Know and use technical vocabulary relevant to the project.			
<b>Textiles (Combining Fabrics &amp; CAD)</b>			
<b>Prior Learning/ Experiences</b>			
Experience of basic stitching, joining textiles and finishing techniques.			
Experience of making and using simple pattern pieces.			
<b>Designing</b>			
Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.			

Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.			
Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.			
<b>Making</b>			
Produce detailed lists of equipment and fabrics relevant to their tasks.			
Formulate step-by-step plans and, if appropriate, allocate tasks within a team.			
Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.			
<b>Evaluating</b>			
Investigate and analyse textile products linked to their final product.			
Compare the final product to the original design specification.			
Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.			
Consider the views of others to improve their work.			
<b>Technical knowledge and understanding</b>			
A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.			
Fabrics can be strengthened, stiffened and reinforced where appropriate.			
<b>Electrical Systems (Simple Programming &amp; Control)</b>	<b>Basic:</b>	<b>Expected:</b>	<b>Deep:</b>
<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.			