

# Design & Technology Progression

## By the end of Year 6 children will:

- understand the impact of design and technology on daily life and the wider world (past and present)
- use research and develop design criteria to inform the designing and making of products that are fit for purpose, aimed at particular individuals or groups
- use a range of techniques and equipment confidently, making informed choices based on the suitability and effectiveness of different processes
- test, evaluate and refine ideas and products against a specification
- use and combine a variety of approaches to generate creative ideas
- look closely and methodically when analysing a product, considering why it was made, what it is made from, how well it is made and finished, and how well it meets the needs of the consumer
- understand the principles of a healthy and varied diet
- know how to create simple dishes, applying the principles of nutrition and healthy eating

### EYFS links:

#### **Expressive Arts and Design**

##### **In Reception**

- Return to and build on their previous learning, refining ideas and developing their ability to represent them
- Create collaboratively sharing ideas, resources and skills

#### **Physical Development**

##### **In Reception**

- Develop their small motor skills so that they can use a range of tools competently, safely and confidently - suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons

#### **Creating with Materials ELG**

- Safely use and explore a variety of materials, tools and techniques
- Share their creations, explaining the process they have used; - Make use of props and materials when role playing characters in narratives and Stories

#### **Fine Motor Skills ELG**

- Use a range of small tools, including scissors, paint brushes and cutlery

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Projects</b>	<p>1. Sliders and levers class/group storybook poster display greetings card class/group information book storyboard.</p> <p>2. Preparing Fruit and Vegetables.</p>	<p>1. TEXTILES-Templates and Joining. Make a cape for superhero Teddy.</p> <p>Wheels and axles. Fire engine.</p>	<p>MECHANICAL SYSTEMS. Levers and Linkages Show how limbs pivot on the human body.</p> <p>Shell structures. Presentation/display packaging for Egyptian artefacts.</p>	<p>ELECTRICAL SYSTEMS. Simple Circuits and Switches. Christmas lantern.</p> <p>Healthy and varied diet. Roman snack.</p>	<p>Mechanical systems and cams. Viking rowing boat.</p> <p>Textiles. Combining different fabrics.</p>	<p>Mechanical systems using pulleys. (Link to Inventions and Discoveries.)</p>
<b>Design</b>	<ul style="list-style-type: none"> <li>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>• Develop, model and communicate their ideas through drawings and mock-ups with card and paper.</li> <li>• Design appealing products for a particular user based on simple design criteria.</li> <li>• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li> <li>• Communicate these ideas through talk and drawings.</li> </ul>	<ul style="list-style-type: none"> <li>• Design a functional and appealing product for a chosen user and purpose based on simple design criteria.</li> <li>• Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.</li> <li>• Generate initial ideas and simple design criteria through talking and using their own experiences.</li> <li>• Develop and communicate ideas through drawings and mock-ups.</li> </ul>	<p>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.</p> <p>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.</p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.</li> <li>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.</li> </ul>	<p>Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.</p> <ul style="list-style-type: none"> <li>• Develop a simple design specification to guide their thinking.</li> <li>• Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.</li> <li>• Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.</li> <li>• Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.</li> <li>• Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.</li> <li>• Develop a simple design specification to guide their thinking.</li> <li>• Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.</li> </ul>
<b>Make</b>	<ul style="list-style-type: none"> <li>• Plan by suggesting what to do next.</li> <li>• Select and use tools, explaining their choices, to cut, shape and join paper and card.</li> <li>• Use simple finishing techniques suitable for the product they are creating.</li> </ul>	<ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.</li> <li>• Select from and use textiles according to their characteristics.</li> </ul>	<p>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.</p>	<p>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.</p>	<ul style="list-style-type: none"> <li>• Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>• Select from and use a range of tools and</li> </ul>	<ul style="list-style-type: none"> <li>• Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>• Select from and use a range of tools and equipment to make products that are</li> </ul>

	<ul style="list-style-type: none"> <li>• Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</li> <li>• Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.</li> </ul>	<ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.</li> <li>• Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.</li> </ul>	<p>Order the main stages of making.</p> <p>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.</p>	<ul style="list-style-type: none"> <li>• Plan the main stages of a recipe, listing ingredients, utensils and equipment.</li> <li>• Select and use appropriate utensils and equipment to prepare and combine ingredients.</li> <li>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> </ul>	<p>equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</p> <ul style="list-style-type: none"> <li>• Produce detailed lists of equipment and fabrics relevant to their tasks.</li> <li>• Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>• 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.</li> </ul>	<p>accurately assembled and well finished. Work within the constraints of time, resources and cost.</p>
Evaluate	<p>Explore a range of existing books and everyday products that use simple sliders and levers.</p> <p>Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.</p> <p>Taste and evaluate a range of fruit and vegetables</p> <p>Evaluate ideas and finished products against design criteria, including intended user and purpose.</p>	<ul style="list-style-type: none"> <li>• Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li>• Evaluate their ideas throughout and their final products against original design criteria.</li> <li>• Explore and evaluate a range of products with wheels and axles.</li> <li>• Evaluate their ideas throughout and their products against original criteria.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</li> <li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li> <li>• Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.</li> <li>• Test and evaluate their own products against design criteria and the intended user and purpose.</li> </ul> <p>Explain how they would improve their product if repeated.</p>	<ul style="list-style-type: none"> <li>• Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</li> <li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li> <li>• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.</li> <li>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li> </ul> <p>Explain how they would improve their product if repeated.</p>	<ul style="list-style-type: none"> <li>• Compare the final product to the original design specification.</li> <li>• Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> <li>• Investigate famous manufacturing and engineering companies relevant to the project.</li> <li>• Investigate and analyse textile products linked to their final product.</li> <li>• Compare the final product to the original design specification.</li> <li>• Test products with intended users and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> </ul>	<ul style="list-style-type: none"> <li>• Compare the final product to the original design specification.</li> <li>• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> </ul>

