

# Hockliffe Lower School Progression of Knowledge and Skills - Design and Technology

#### Early Years Foundation Stage

## **Physical Development**

#### **Fine Motor Skills**

- Children use a range of small tools
- Begin to show accuracy and care when drawing

### **Expressive Art and Design**

#### **Creating with Materials**

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.
- Make use of props and materials when role playing characters in narratives and stories.

	Key Stage 1	Lower Key Stage 2
Design	<ul> <li>use their knowledge of existing products and their own experience to help generate their ideas;</li> </ul>	<ul> <li>identify the design features of their products that will appeal to intended customers;</li> </ul>
	<ul> <li>design products that have a purpose and are aimed at an intended user;</li> </ul>	<ul> <li>use their knowledge of a broad range of existing products to help generate their ideas;</li> </ul>
	<ul> <li>explain how their products will look and work through talking and simple annotated drawings;</li> </ul>	<ul> <li>design innovative and appealing products that have a clear purpose and are aimed at a specific user;</li> </ul>
	<ul> <li>design models using simple computing software;</li> </ul>	<ul> <li>explain how particular parts of their products work;</li> </ul>
	<ul> <li>plan and test ideas using templates and mock-ups;</li> </ul>	<ul> <li>use annotated sketches and cross-sectional drawings to develop and communicate their ideas;</li> </ul>
	<ul> <li>understand and follow simple design criteria;</li> <li>work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.</li> </ul>	when designing, explore different initial ideas before coming up
		with a final design;
		<ul> <li>when planning, start to explain their choice of materials and components including function and aesthetics;</li> </ul>
		<ul> <li>test ideas out through using prototypes;</li> </ul>
		<ul> <li>use computer-aided design to develop and communicate their ideas (see note on p. 1);</li> </ul>
		<ul> <li>develop and follow simple design criteria;</li> <li>work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment.</li> </ul>
Make	Planning	Plan
	<ul> <li>with support, follow a simple plan or recipe;</li> <li>begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer;</li> <li>select from a range of materials, textiles and components</li> </ul>	<ul> <li>with growing confidence, carefully select from a range of tools and equipment, explaining their choices;</li> </ul>
		<ul> <li>select from a range of materials and components according to their functional properties and aesthetic qualities;</li> </ul>
	according to their characteristics;	<ul> <li>place the main stages of making in a systematic order;</li> </ul>

	Practical skills and techniques	Practical skills and techniques
	<ul> <li>learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures;</li> </ul>	<ul> <li>learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures;</li> </ul>
	<ul> <li>use a range of materials and components, including textiles and food ingredients;</li> </ul>	<ul> <li>use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components;</li> </ul>
	<ul> <li>with help, measure and mark out;</li> <li>cut, shape and score materials with some accuracy;</li> <li>assemble, join and combine materials, components or ingredients;</li> <li>demonstrate how to cut, shape and join fabric to make a simple product;</li> <li>manipulate fabrics in simple ways to create the desired effect;</li> <li>use a basic running stich;</li> <li>cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups;</li> <li>begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations</li> </ul>	<ul> <li>with growing independence, measure and mark out to the nearest cm and millimetre;</li> <li>cut, shape and score materials with some degree of accuracy;</li> <li>assemble, join and combine material and components with some degree of accuracy;</li> <li>demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product;</li> <li>join textiles with an appropriate sewing technique;</li> <li>begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.</li> </ul>
Evaluate	<ul> <li>explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations;</li> <li>explain positives and things to improve for existing products;</li> <li>explore what materials products are made from;</li> <li>talk about their design ideas and what they are making;</li> <li>as they work, start to identify strengths and possible changes they might make to refine their existing design;</li> <li>evaluate their products and ideas against their simple design criteria;</li> <li>start to understand that the iterative process sometimes involves repeating different stages of the process.</li> </ul>	<ul> <li>explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose;</li> <li>explore what materials/ingredients products are made from and suggest reasons for this;</li> <li>consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product;</li> <li>evaluate their product against their original design criteria;</li> <li>evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.</li> </ul>
Technical Knowledge	<ul> <li>build simple structures, exploring how they can be made stronger, stiffer and more stable;</li> <li>talk about and start to understand the simple working characteristics of materials and components;</li> <li>explore and create products using mechanisms, such as levers, sliders and wheels.</li> </ul>	<ul> <li>understand that materials have both functional properties and aesthetic qualities;</li> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products;</li> <li>understand and demonstrate how mechanical and electrical systems have an input and output process;</li> <li>make and represent simple electrical circuits, such as a series and parallel, and components to create functional products;</li> </ul>

		<ul> <li>explain how mechanical systems such as levers and linkages create movement;</li> <li>use mechanical systems in their products.</li> </ul>
Cooking and Nutrition	<ul> <li>explain where in the world different foods originate from;</li> <li>understand that all food comes from plants or animals;</li> <li>understand that food has to be farmed, grown elsewhere (e.g. home) or caught;</li> <li>name and sort foods into five nutrition groups</li> <li>understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why;</li> </ul>	<ul> <li>start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world;</li> <li>understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically;</li> <li>with support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven;</li> <li>use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking;</li> <li>explain that a healthy diet is made up of a variety and balance of different food and drink, and be able to apply these principles when planning and cooking dishes;</li> <li>understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body;</li> <li>prepare ingredients using appropriate cooking utensils;</li> <li>measure and weigh ingredients to the nearest gram and millilitre;</li> <li>start to independently follow a recipe;</li> <li>start to understand seasonality.</li> </ul>