Adlington Primary School



Design and Technology End Points Curriculum Plan

This end points curriculum plan is designed to show the knowledge that will be covered in Design and Technology at Adlington Primary School. The curriculum combines both the conceptual and procedural knowledge within Design and Technology. Information on the organisation and delivery of Design and Technology can be found in the Design and Technology Progression.

At Adlington Primary School we want all of our children to develop the following Design and Technology characteristics during their time with us:

• The ability to use visual language skillfully and convincingly (for example, line, shape, pattern, colour, texture, form) to express emotions, interpret observations, convey insights and accentuate their individuality.

• The ability to communicate fluently in visual and tactile form.

• The ability to draw confidently and adventurously from observation, memory and imagination.

• The ability to explore and invent marks, develop and deconstruct ideas and communicate perceptively and powerfully through purposeful drawing in 2D, 3D or digital media.

• An impressive knowledge and understanding of other artists, craftmakers and designers.

• The ability to think and act like creative practitioners by using their knowledge and understanding to inform, inspire and interpret ideas, observations and feelings.

• Independence, initiative and originality which they can use to develop their creativity.

• The ability to select and use materials, processes and techniques skillfully and inventively to realise intentions and capitalise on the unexpected.

• The ability to reflect on, analyse and critically evaluate their own work and that of others.

• A passion for and a commitment to the subject.

Design and Technology End Points Curriculum Plan

		Early Years	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
To master practical skills	**Food**	Use a range of small tools, including scissors, paintbrushes and cutlery	• Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients.	• Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).	• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
To master techniques	**Materials**	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function.	• Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).	• Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques.	• Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).

	Textiles	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	• Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	• Understand the need for a seam allowance. • Create objects (such as a cushion) that employ a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles.	• Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).
	Electricals and electronics		• Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).	• Create series and parallel circuits.	• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).
	Computing		• Model designs using software.	• Control and monitor models using software designed for this purpose.	• Write code to control and monitor models or products.
	Construction	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	• Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.	• Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques.	• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).
	Mechanics		• Create products using levers, wheels and winding mechanisms.	• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	• Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs.
To design, make, evaluate and improve		Share their creations, explaining the process they have used.	• Design products that have a clear purpose and an intended user. • Make products, refining the	• Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting	• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages

			design as work progresses. • Use software to design.	materials). • Refine work and techniques as work progresses, continually evaluating the product design. • Use software to design and represent product designs.	of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
To take inspiration from design throughout history			• Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created.	• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work.	• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.

Design and Technology Opportunities

Key Stage 1	Key Stage 2
Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. When designing and making, pupils should be taught to:

When designing and making, pupils should be taught to: **Design** • design purposeful, functional, appealing products for themselves and other users based on design criteria. • generate develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. **Make** • select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping, joining and finishing. • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate** • explore and evaluate a range of existing products. • evaluate their ideas and products against design criteria. **Technical knowledge** • build structures, exploring how they can be made stronger, stiffer and more stable. • explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.	**Design** • use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make** • select from and use a wider range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing, accurately. • select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. **Evaluate** • investigate and analyse a range of existing products. • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. • understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** • apply their understanding of how to strengthen, stiffen and reinforce more complex structures. • understand and use mechanical systems in their products, such as gears,

Cooking and nutrition • use the basic principles of a healthy and varied diet to prepare dishes. • understand where food comes from.	pulleys, cams, levers and linkages. • understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors. • apply their understanding of computing to programme, monitor and control their products. **Cooking and nutrition** • understand and apply the principles of a healthy and varied diet. • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. • understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.