

**The national curriculum for design and technology aims to ensure that all pupils:**

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

**Foundation Stage**

Pupils should be taught to:

- Use what they have learnt about materials in original ways, thinking about uses and purposes.
- Represent their own ideas, thoughts and feelings through design and technology.
- Handle equipment and tools effectively.
- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

**Key Stage 1**

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 [for example, 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 [for example, levers, sliders, wheels and axles], in their products.

**Cooking and Nutrition**

- Use the basic principles of a healthy and varied diet to prepare dishes
- Understand where food comes from.

**Key Stage 2**

When designing and making, pupils should be taught to:

**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 [for example, 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 [for example, gears, pulleys, cams, levers and linkages]
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- Apply their understanding of computing to program, 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.

	<b>Nursery Designer</b>	<b>Reception Designer</b>	<b>Year 1 Designer</b>	<b>Year 2 Designer</b>
<b>Progression and Assessment Criteria</b>	<p><b>(30-50 months)</b></p> <p><b>Children: (All themes)</b></p> <ul style="list-style-type: none"> <li>Use various construction materials.</li> <li>Begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces.</li> <li>Join construction pieces together to build and balance.</li> <li>Realise tools can be used for a purpose.</li> <li>Notice what adults do, imitating what is observed and then doing it spontaneously when the adult is not there.</li> <li>Show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.</li> <li>Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</li> <li>Use one-handed tools and equipment, e.g. makes snips in paper with child scissors.</li> </ul> <p><b>Adults:</b></p> <ul style="list-style-type: none"> <li>Make suggestions and ask questions to extend children's ideas of what is possible, for example, "I wonder what would happen if...".</li> <li>Support children in thinking about what they want to make, the processes that may be involved and the materials and resources they might need, such as a photograph to remind them what the climbing frame is like.</li> <li>Support and extend the skills children develop as they become familiar with simple equipment, such as twisting or turning a knob.</li> <li>Teach children the skills they need to use equipment safely, e.g. cutting with scissors or using tools.</li> <li>Explain why safety is an important factor in handling tools, equipment and materials, and have sensible rules for everybody to follow.</li> </ul> <p><b>Environments:</b></p> <ul style="list-style-type: none"> <li>Provide a place where work in progress can be kept safely.</li> <li>Demonstrate and teach skills and techniques associated with the things children are doing, for example, show them how to stop the paint from dripping or how to balance bricks so that they will not fall down.</li> </ul>	<p><b>(40-60 months)</b></p> <p><b>Children: (All themes)</b></p> <ul style="list-style-type: none"> <li>Construct with a purpose in mind, using a variety of resources. (Y, RS)</li> <li>Use simple tools and techniques competently and appropriately. (Y,RS)</li> <li>Select appropriate resources and adapt work where necessary. (Y, RS)</li> <li>Select tools and techniques needed to shape, assemble and join materials they are using. (Y, RS)</li> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (Y, RS)</li> <li>Represent their own ideas, thoughts and feelings through design and technology. (Y, RS)</li> <li>Use simple tools to effect changes to materials. (Y, RS)</li> <li>Handle tools, objects, construction and malleable materials safely and with increasing control.(Y, RS)</li> </ul> <p><b>Adults:</b></p> <ul style="list-style-type: none"> <li>Encourage children to speculate on the reasons why things happen or how things work.</li> <li>Teach children the skills they need to use equipment safely, e.g. cutting with scissors or using tools.</li> <li>Explain why safety is an important factor in handling tools, equipment and materials, and have sensible rules for everybody to follow.</li> </ul> <p><b>Environments:</b></p> <ul style="list-style-type: none"> <li>Provide resources for mixing colours, joining things together and combining materials, demonstrating where appropriate.</li> <li>Have a 'holding bay' where models and works can be retained for a period for children to enjoy, develop, or refer to.</li> <li>Make materials accessible so that children are able to imagine and develop their projects and ideas while they are still fresh in their minds and important to them.</li> <li>Provide children with opportunities to use their skills and explore concepts and ideas through their representations.</li> <li>Provide opportunities indoors and outdoors and support the different interests of children, e.g.in roleplay of a builder's yard, encourage narratives to do with building and mending.</li> </ul>	<p><b>Design, Make and Evaluate</b></p> <ul style="list-style-type: none"> <li>Use my own ideas to make something. (S, DP, MZ)</li> <li>Make a simple plan before making. (S, DP, MZ)</li> <li>Choose appropriate resources and tools. (S, DP, MZ)</li> <li>Explain to someone else how I want to make my product. (S, DP, MZ)</li> </ul> <p><b>Technical Knowledge</b></p> <ul style="list-style-type: none"> <li>Describe how something works. (MZ)</li> <li>Make a product which moves. (MZ)</li> <li>Make my model stronger. (MZ)</li> </ul> <p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>Know the difference between healthy and unhealthy food. (S)</li> <li>Know the importance of my washing hands before cooking and eating. (S)</li> <li>Cut and prepare food safely. (S)</li> </ul>	<p><b>Design, Make and Evaluate</b></p> <ul style="list-style-type: none"> <li>Think of an idea and plan what to do next. (GFL, TTT, LA)</li> <li>Choose tools and materials and explain why I have chosen them. (GFL, TTT, LA)</li> <li>Measure materials to use in a model or structure. ( TTT, LA)</li> <li>Explain what went well with my work. (GFL, TTT, LA)</li> <li>Explain why I have chosen specific materials. ( TTT, LA)</li> </ul> <p><b>Technical Knowledge</b></p> <ul style="list-style-type: none"> <li>Explain how something works. (TTT, LA)</li> <li>Make a product which uses mechanical components e.g. levers to move. (TTT, LA)</li> <li>Join materials and components in different ways. (TTT, LA)</li> </ul> <p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>Talk about and explain the reason for the ingredients I am using. (GFL)</li> <li>Know how to follow a make a simple recipe. (GFL)</li> <li>Sort foods into the five main food groups (GFL)</li> </ul>

	Nursery Designer	Reception Designer	Year 1 Designer	Year 2 Designer
Progression and Assessment Criteria	<ul style="list-style-type: none"> <li>When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back.</li> <li>Provide activities that give children the opportunity and motivation to practise manipulative skills, e.g. cooking, painting, clay and playing instruments.</li> <li>Teach children skills of how to use tools and materials effectively and safely and give them opportunities to practise them.</li> <li>Provide a range of left-handed tools, especially left-handed scissors, as needed.</li> <li>Provide a range of construction toys of different sizes, made of wood, rubber or plastic, that fix together in a variety of ways, e.g. by twisting, pushing, slotting or magnetism.</li> </ul> <p>In nursery children will be using enquiry skills in their everyday play within their local environment throughout the year.</p>	<ul style="list-style-type: none"> <li>Provide a range of materials and objects to play with that work in different ways for different purposes, e.g. egg whisk, torch, other household implements, pulleys, construction kits and tape recorder.</li> <li>Provide activities that give children the opportunity and motivation to practise manipulative skills, e.g. cooking, painting, clay and playing instruments.</li> <li>Teach children skills of how to use tools and materials effectively and safely and give them opportunities to practise them.</li> <li>Provide a range of left-handed tools, especially left-handed scissors, as needed.</li> <li>Provide a range of construction toys of different sizes, made of wood, rubber or plastic, that fix together in a variety of ways, e.g. by twisting, pushing, slotting and magnetism.</li> </ul> <p>In reception children will be using enquiry skills in their everyday play within their local environment throughout the year.</p>		
Themes	<ul style="list-style-type: none"> <li>Why do you love me so much? (LM)</li> <li>Where does snow go? (Sn)</li> <li>Why can't I have chocolate for breakfast? (CB)</li> <li>How many colours in a rainbow? (CR)</li> <li>Can I have a dog? (D)</li> </ul>	<ul style="list-style-type: none"> <li>Do you want to be friends? (F)</li> <li>Why do squirrels hide their nuts? (Sq)</li> <li>Are we there yet? (Y)</li> <li>Will you read me a story? (RS)</li> <li>Why do zebras have stripes? (ZS)</li> </ul>	<ul style="list-style-type: none"> <li>Superheroes (S)</li> <li>Enchanted Woodlands (EW)</li> <li>Paws, Claws and Whiskers (PCW)</li> <li>Dinosaur Planet (DP)</li> <li>Moon Zoom (MZ)</li> </ul>	<ul style="list-style-type: none"> <li>Street Detectives (SD)</li> <li>The Great Fire of London (GFL)</li> <li>Baddies, Towers and Tunnels (BTT)</li> <li>Land Ahoy (LA)</li> <li>Scented Garden (SG)</li> </ul>
	Year 3 Designer	Year 4 Designer	Year 5 Designer	Year 6 Designer
	<p><b>Design, Make and Evaluate</b></p> <ul style="list-style-type: none"> <li>Prove that my design meets some set criteria. (GM, T, TT, F)</li> <li>Design a product and make sure that it looks attractive. (GM, T, TT, F)</li> <li>Choose a material for both its suitability and its appearance. (GM, T, TT, F)</li> <li>Follow a step-by-step plan, choosing the right equipment and materials. (GM, T, TT, F)</li> <li>Select the most appropriate tools and techniques for a given task. (GM, T, TT, F)</li> <li>Work accurately to measure, make cuts and make holes. (GM, T, TT, F)</li> <li>Identify how I could improve my product. (GM, T, TT, F)</li> </ul>	<p><b>Design, Make and Evaluate</b></p> <ul style="list-style-type: none"> <li>Use ideas from other people when I am designing. (IW, TR, Po)</li> <li>Produce a plan and explain it. (IW, BBB, TR, Po)</li> <li>Present a product in an interesting way. (IW, BBB, TR, Po)</li> <li>Measure and join accurately. (IW, TR)</li> <li>Persevere and adapt my work when my original ideas do not work. (IW, BBB, TR, Po)</li> <li>Evaluate and suggest improvements for my designs. (IW, BBB, TR, Po)</li> <li>Evaluate products for both their purpose and appearance. (IW, BBB, TR, Po)</li> <li>Explain how I have improved my original design. (IW, BBB, TR, Po)</li> </ul>	<p><b>Design, Make and Evaluate</b></p> <ul style="list-style-type: none"> <li>Come up with a range of ideas after collecting information from different sources. (AI, Ph, SM, A)</li> <li>Produce a detailed, step-by-step plan. (AI, Ph, SM, A)</li> <li>Suggest alternative plans; outlining the positive features and draw backs. (AI, Ph, SM, A)</li> <li>Explain how a product will appeal to a specific audience. (AI, Ph, SM, A)</li> <li>Use a range of tools and equipment competently. (AI, Ph, SM, A)</li> <li>Make a prototype before making a final version. (AI, SM)</li> <li>Evaluate appearance and function against original criteria. (AI, Ph, SM, A)</li> </ul>	<p><b>Design, Make and Evaluate</b></p> <ul style="list-style-type: none"> <li>Use market research to inform my plans and ideas. (BH, CW, HM)</li> <li>Follow and refine my plans. (BH, CW, HM)</li> <li>Justify my plans in a convincing way. (BH, CW, HM)</li> <li>Show that I consider culture and society in my plans and designs. (BH, CW, HM)</li> <li>Show that I can test and evaluate my products. (BH, CW, HM)</li> <li>Work within a budget. (BH, HM)</li> <li>Evaluate my product against clear criteria. (BH, CW, HM)</li> </ul>

<b>Progression and Assessment</b>	<p><b>Technical knowledge</b></p> <ul style="list-style-type: none"> <li>• Know how to strengthen, stiffen and reinforce structures. (GM, T, F)</li> <li>• Make a product using electrical or mechanical components. (GM, T, F)</li> </ul> <p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>• Know what makes a healthy and balanced diet. (?)</li> <li>• Describe how food ingredients come together. (?)</li> <li>• Know where food ingredients come from. (?)</li> </ul>	<p><b>Technical knowledge</b></p> <ul style="list-style-type: none"> <li>• Know how to strengthen, stiffen and reinforce materials and designs. (IW)</li> </ul> <p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>• Know the importance of and how to make healthy food choices. (BBB)</li> <li>• Know how to be both hygienic and safe when using and preparing food. (BBB)</li> <li>• Know how to store food safely. (BBB)</li> </ul>	<p><b>Technical knowledge</b></p> <ul style="list-style-type: none"> <li>• Make a product using both electrical and mechanical components. (AI, SM)</li> <li>• Make a product using computer programming, monitoring and control. (AI, SM)</li> </ul> <p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>• Know the different nutrients that are important to health and which foods contain these. (A, Ph)</li> <li>• Show that I can be both hygienic and safe in the kitchen. (A, Ph)</li> <li>• Know where different foods come from and how they may be changed to help preserve or make them safer or tastier. (A, Ph)</li> </ul>	<p><b>Technical knowledge</b></p> <ul style="list-style-type: none"> <li>• Make a product using electrical components and a variety of types of electrical circuits. (SW)</li> <li>• Make a product using computer programming, monitoring and control. (SW)</li> </ul> <p><b>Cooking and Nutrition</b></p> <ul style="list-style-type: none"> <li>• Use food labels to help choose the most healthy or appropriate ingredients and foods. (BH, HM)</li> <li>• Use my understanding of healthy eating, hygiene and food safety to make my own menu. (BH, HM)</li> <li>• Understand some of the ethical issues and social influences on the foods we choose to eat. (BH, HM)</li> </ul>
<b>Themes</b>	<ul style="list-style-type: none"> <li>• Tremors (T)</li> <li>• Tribal Tales (TT)</li> <li>• Mighty Metals (MM)</li> <li>• Urban Pioneers (UP)</li> <li>• Gods and Mortals (GM)</li> <li>• Flow (F)</li> </ul>	<ul style="list-style-type: none"> <li>• Burps, Bottoms and Bile (BBB)</li> <li>• I am Warrior (IW)</li> <li>• Traders and Raiders (TR)</li> <li>• Potions (Po)</li> <li>• Misty Mountain Sierra (MMS)</li> <li>• Playlists (PI)</li> </ul>	<ul style="list-style-type: none"> <li>• Off with her head (OWH)</li> <li>• Alchemy Island (AI)</li> <li>• Pharaohs (Ph)</li> <li>• Stargazers (S)</li> <li>• Scream Machine (SM)</li> <li>• Allotment (A)</li> </ul>	<ul style="list-style-type: none"> <li>• Darwin's Delights (DD)</li> <li>• Blood Heart (BH)</li> <li>• Frozen Kingdom (FK)</li> <li>• Child's War (CW)</li> <li>• Hola Mexico (HM)</li> </ul>