



Year 3 and 4

Design Technology Curriculum

Unit Overviews

Questions to Develop Children's Spirituality in Design Technology:	What does it mean if an object has worth or value? Can the value be different from one person to another? How can an object tell a story? Does it mean more to someone if you have made the gift yourself? Is home-made or factory made best? Do we value what people have made for us? If we believe that God has made us, what does that reveal about our views about our value for God?
Development of the child:	Wonder, consideration and appreciation.

<p>Topic: How Does Your Garden Grow? (Y3/4) Subject: DT</p>	<p>Prior Knowledge/Links: ‘The Great Outdoors’ (Y1/2) Moving on to ‘Beside the Seaside’ (Y5/6) Children should already know: Build structures, exploring how they can be made stronger, stiffer and more stable.</p>
<p>National Curriculum Objectives</p>	<p>Key Knowledge and Vocabulary</p>
<p>Technical knowledge – apply their knowledge of how to strengthen, stiffen and reinforce more complex structures.</p>	<p>Know similar products to the one to be made to give starting points for a design. Know how to draw/sketch products to help analyse and understand how products are made. Know what the structure needs to achieve – how it is to be used, where it is to be sited, who is going to use it, to prepare a design brief that outlines the requirements. Know how garden designers choose the shape, size and materials for planters. Know how to use annotated sketches to record their ideas as they develop. Know how to develop simple prototypes of their ideas to take forward. Know how to plan the making process to consider the stages of making and choice of appropriate tools and skills Know how to create shell or frame structures. Know how to strengthen frames with diagonal struts. Know how to make structures more stable by giving them a wide base. Know how to measure and mark square section, strip and dowel accurately to one centimetre (work with accuracy). Know how to evaluate and test against the design criteria, improving or adjusting where necessary.</p>

<p>Topic: Sparks Might Fly (Y3/4) Subject: DT</p>	<p>Prior Knowledge/Links: ‘Explorers’ (Y1/2) Children should already know: Explore and use mechanisms e.g. levers, sliders, wheels and axles in their products</p>
<p>National Curriculum Objectives</p>	<p>Key Knowledge and Vocabulary</p>
<p>Technical knowledge – understand and use electrical systems in their products e.g. series circuits, incorporating switches, bulbs, buzzers and motors Apply their understanding of computing to program, monitor and control their products.</p>	<p>Know existing products that use electrical systems. Know how a product is appropriate for the intended user, considering purpose, function and aesthetic appeal. Know how an electrical system functions, using flow charts to explain. Know what electrical components are used in an electrical system. Know how to complete a simple series circuit, incorporating on working component e.g. light, bulb, buzzer, motor. Know methods of creating a switch (breaker) in the circuit. Know relevant ICT programming to incorporate relevant ICT equipment into the circuit. Know that size, function, components, incorporation of circuitry into the container and the panel, need to be considered in the design criteria. Know that their final product needs to be functional and appealing</p>

<p>Topic: Hunted (Y3/4) Subject: DT</p>	<p>Prior Knowledge/Links: 'Growth and Green Fingers' (Y1/2) Moving on to 'Food, Glorious Food!' (Y5/6) Children should already know: Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.</p>
<p>National Curriculum Objectives</p>	<p>Key Knowledge and Vocabulary</p>
<p>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.</p>	<p>Know existing products from investigating actual examples of individual food items and dishes. Know the essential elements of the Eatwell Plate to make healthy eating choices. Know which foods might be found/grown on a desert island. Know how to secure protein e.g. meat, fish. Know what different fruits/root vegetables taste, look and smell like. Know how to alter the texture of foods by preparing them differently. Know sensory vocabulary using smell, taste, texture and feel. Know how to analyse the taste, texture, smell and appearance of predominantly savoury foods. Know how to draw/sketch products and annotate drawings to analyse and understand how products are made. Know how to draw up appropriate design criteria for a simple meal. Know the sequence of actions needed to make a dish. Know how to follow instructions/recipes. Know the tools to prepare ingredients and how to use them safely. Know how to prepare food by baking and boiling. Know that adult supervision is required when baking and boiling. Know the ingredients needed to achieve their design ideas. Know how to join and combine a range of ingredients. Know how to meet aesthetic qualities of a dish, ensuring it tastes, looks and smells appetising (finishing, serving, presentation techniques). Know how to improve the product in light of how successful the dish meets the design criteria.</p>

<p>Topic: The Iron Man (Y3/4) Subject: DT</p>	<p>Prior Knowledge/Links: 'Fire! Fire!' (Y1/2) Moving on to 'Inventors and Inventions' (Y5/6) Children should already know: Explore and use mechanisms e.g. levers, sliders, wheels and axles in their products</p>
<p>National Curriculum Objectives</p>	<p>Key Knowledge and Vocabulary</p>
<p>Technical knowledge – understand and use mechanical systems in their products e.g. gears, pulleys, cams, levers and linkages.</p>	<p>Know examples of 'pop-up' mechanisms which use systems of levers and linkages to change direction, make a movement larger or make two movements interact. Know how to use mechanical systems such as levers and linkages, making diagrams of how they work. Know how different outputs can be achieved from varying or adapting mechanical systems Know how to use lolly sticks or card to make levers and linkages. Know how to use linkages to make movement larger or more varied. Know how to use tools with accuracy. Know how to cut slots. Know how to cut internal shapes. Know appropriate finishing techniques. Know how to stiffen and strengthen materials. Know how to select materials and tools that will meet the design criteria Know how their finished product meets the design criteria and how they could further improve it.</p>

<p>Topic: Passport to Europe Subject: DT</p>	<p>Prior Knowledge/Links: ‘Wind in the Willows’ (Y1/2) Moving on to ‘Amazon Adventure’ (Y5/6) Children should already know: Build structures, exploring how they can be made stronger, stiffer and more stable.</p>
<p>National Curriculum Objectives</p>	<p>Key Knowledge and Vocabulary</p>
<p>Technical knowledge – apply their understanding of how to strengthen, stiffen and reinforce materials and fastenings.</p>	<p>Know similar existing products from disassembling to investigate how pattern pieces have been made and fit together. Know the user and purpose of the passport holder. Know how the holder protects the passport e.g. from being crumpled. Know what stitches have been used. Know how fabric has been strengthened or stiffened to help protect the passport e.g. using card inserts or iron-on webbing. Know about seam allowance and how to join fabrics using a running stitch, over sewing or blanket stitch. Know how to prototype a product using J-cloths. Know fastenings and recreate some – sew on buttons and make loops. Know appropriate decoration techniques. Know how to evaluate against the design criteria and what might be done differently.</p>

<p>Topic: Healthy Humans (Y3/4) Subject: DT</p>	<p>Prior Knowledge/Links: ‘The Farm Shop’ (Y1/2) Moving on to ‘Heroes and Villains’ (Y5/6) Children should already know: Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.</p>
<p>National Curriculum Objectives</p>	<p>Key Knowledge and Vocabulary</p>
<p>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.</p>	<p>Know existing picnic products from investigating actual examples, including individual food items and dishes. Know how dishes suit the requirements of a picnic e.g. transportable, easy to eat, to give starting points for design. Know the essential elements of the Eatwell Plate to make healthy eating choices. Know which ingredients we could grow and where they come from. Know which dishes include protein. Know how meat and fish are reared and caught. Know how to analyse taste, texture, smell and appearance of a range of foods which are predominantly savoury. Know how to draw/sketch products with annotations to design a simple picnic dish. Know which cooking methods are involved in the food preparation. Know how to follow instructions and recipes. Know how to join and combine a range of ingredients, using tools safely. Know how to prepare food by baking and boiling ingredients. Know that adult supervision is required when baking and boiling. Know the order of their work and the tools and ingredients they will need at each stage. Know if their product will taste, look and smell good, based on the aesthetic qualities of the ingredients chosen Know appropriate finishing/serving/presentation techniques. Know how the finished product could be improved in light of how it meets the design criteria.</p>

Design Make and Evaluate National Curriculum Objectives apply to all units:

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