



Design and Technology (DT)



Year Group Topics linked to DT	Aspect of DT Curriculum	Area of DT Covered
Year 1	Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing)	Make a swing from a set of given instructions. Select tools/equipment to cut, shape, join, finish and explain choices.
Our Local Area		
Clothes	Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups. Evaluate their ideas and products against design criteria.	Design, make and evaluate a playground from Duplo and Craft materials against given design criteria. Use own ideas, explain what product is and how it will work. Use pictures and words to plan. Talk about work and begin to say what was good about it.
Growing		
Fantasy Worlds	Explore and evaluate a range of existing products.	Explore and evaluate different examples of tabbed clothing for dolls. Talk about existing products and say what is good and what isn't and how they work. Begin to make suggestions to how it can be made better. Design a range of tabbed outfits to fit a 2D teddy/doll. Explore and evaluate different stands used for dolls, teddies etc. Make the teddy/doll become 3D by joining components to make a stand. Evaluate their product against design criteria. Suggest ways to make material/product stronger.
	Design purposeful, functional, appealing products for themselves and other users based on design criteria. Build a structure and explore how it can be made stronger, stiffer and more stable.	Design, make and evaluate clay flower pots based on design criteria by having own ideas and explaining what is to be made. Use clay tools to aid making and simple clay techniques. Talk about what has been made and what was asked to be made. Begin to talk about what could make the product better.
	Design purposeful, functional, appealing products for themselves and other users based on design criteria. Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). Evaluate their ideas and products against design criteria.	Design and make a Superhero (use junk materials). Select from a wide range of materials and components according to their characteristics. Measure mark out, cut and shape with support. Use a range of tools and techniques (Sellotape, glue and scissors). Use pictures and words to plan.
		Understand what a slider mechanism is and talk about what one is and its purpose. Use a slider mechanism to make a superhero pop out of a hat.

	<p>Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups. Select from and use a wide range of materials and components, including construction materials and textiles.</p> <p>Explore and use mechanisms (sliders) in their products.</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes.</p>	<p>Cooking and Nutrition:</p> <p>Make a variety of simple salads. Talk about healthy choices for salads. Talk about the textures of salad products. Understand the need for hygiene when preparing food. Cut, peel and grate safely with support. Talk about different ways to present the salads.</p>
<p>Year 2</p> <p>Homes</p> <p>Space</p> <p>Africa</p> <p>The common and healthy living</p>	<p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups. Select from and use a wide range of materials and components, including construction materials and textiles. Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing).</p> <p>Explore and use mechanisms (wheels and axles) in their products. Select from and use a wide range of materials and components, including construction materials and textiles. Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). Evaluate their products against set criteria.</p>	<p>Design the outside of a house by having own ideas and labelling parts explaining the purpose of the product. Make a 3D models of the home they have designed using a wide range of materials. Measure, mark out and cut and shape materials. Use scissors, and Stanley knife (with support) to cut materials. Choose best tools and materials and explain choices.</p> <p>Explore the wheel and axle mechanism and understand how to use them. Understand how pneumatics work and what they are used for. Use a range of materials and components to make a balloon moon buggy from a set of given instructions. Measure, mark out, cut and shape materials and components with support. Describe the different characteristics of the materials being used. Join components together in different ways using sellotape, masking tape, glue and glue gun with support. Use scissors, Stanley knife (with support) to cut materials. Explain when a Stanley knife is more useful than scissors. Use the wheel and axle mechanism in their moon buggy product. Use pneumatics to make the moon buggy move. Evaluate product against set criteria by saying what went well. Explain what could be done differently if product was to be made again</p> <p>Explore different masks and talk about how they are made – what material are they made from, how do they fix to the head, do all fix to the head. Look at examples of African masks and collate similarities and differences. Discuss how each mask works and</p>

	<p>Explore and evaluate a range of existing products.</p> <p>Design purposeful, functional, appealing products for themselves and others based on design criteria. Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes.</p> <p>Understand where food comes from.</p>	<p>understand the overriding design criteria of each (cover face, usually holes to enable you to see etc). Understand how paper can be made stiffer to make it stronger (paper mache - glue and layering and rolling and folding). Plan own African Mask using picture and words. Label plan to show the techniques that will be used to strengthen paper. Use paper strengthening techniques (paper mache and rolling) to make African mask. Design mask for myself and others following design criteria. Explain what is being made and why it fits the purpose. Use finishing techniques to make the product look good. Evaluate how good the existing masks are.</p> <p>Cooking and Nutrition:</p> <p>Know the basics elements of a healthy meal (protein, carbohydrates, vitamins, dairy and veg) and understand there are groups of foods and the importance of a varied diet. Understand and explain the phrase '5 a day.' Know that food comes from plants or from animals/fish/shellfish and name some examples of each. Identify where in the world some of the main sources of food come from. Prepare some simple healthy snacks e.g. smoothies, salads with cheese, chicken or fish. Cut, peel and grate with increasing confidence. Explain hygiene and the need for a hygienic kitchen.</p>
<p>Year 3</p> <p>Crocodiles</p> <p>The Caribbean</p> <p>The Iron Man</p>	<p>Investigate and analyse a range of existing products. Generate, develop and communicate their ideas through discussion and annotated sketches. Select from and use a wider range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining, and finishing, accurately. Select from and use a wider range of material and components, including construction materials and textiles, according to their</p>	<p>Look at a range of different types of puppets and analyse them against how well they have been made, materials used, whether they work, how they have been made, are they fit for purpose. Begin to understand by whom, when and where products were designed. Learn about some puppet designers and their particular preference for style of puppets and why. Discuss types of puppets that could be made to best suit characters in Krindlekrax. Design own glove puppet against set design criteria. Create a plan which shows labelled sketch, order, equipment needed and tools required. Describe the purpose of the product. Understand that a 3D textile structure can be made from 2 identical fabric shapes. Explain how product will work. Make puppets by choosing appropriate tools, equipment and materials. Work through plan in</p>

	<p>functional properties and aesthetic qualities.</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p> <p>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Generate, develop and communicate their ideas through discussion and annotated sketches.</p> <p>Select from and use a wider range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining, and finishing, accurately.</p> <p>Select from and use a wider range of material and components, including construction materials and textiles, according to their functional properties and aesthetic qualities.</p>	<p>order. Use a needle and thread for a running stitch to join fabric together to create a glove puppet.</p> <p>Cooking and Nutrition:</p> <p>Make some simple Caribbean foods e.g. tropical smoothies, rice dishes. Carefully select food ingredients that would work together to make the smoothies and rice dishes. Use equipment safely (blender) to make smoothies. Understand making food look attractive is important and why. Discuss ways to make smoothies and rice dishes look attractive by adding a whole fruit or garnishing. Think about how to grow plants to use in cooking particularly ones that can be used for garnish e.g. mint, parsley. Begin to understand food comes from the UK and the wider world. Grow in confidence using the following techniques: peeling, chopping, slicing, grating. Identify typical products grown in the Caribbean. Look at a farming calendar for fruits and vegetables in the Caribbean and discuss the different fruits that grow there and why.</p> <p>Know structures in real life have to be strengthened, stiffened and reinforced. Identify structures in the real world that demonstrate they are strengthened and identify how. Talk about different strengthening techniques e.g. tabs, triangle, tubing, diagonal brace structures. Use a strengthening technique e.g. create tabs to help something stand up, triangle structures etc. Design and make an Iron Man structure and use a strengthening technique. Show design meets a range of requirements eg must be strong, must stand up. Have at least one idea about how to create the product. Make design decisions. Work accurately to make cuts and holes. Begin to assemble, join and combine materials with some accuracy. Begin to measure, mark out, cut and shape materials with some accuracy. Select suitable tools and explain choice reasons. Talk with friend and evaluate iron man made against own design criteria and consider the views of friend. Say what could be changed to make design better.</p>
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	Evaluate their products against their own design criteria and consider the views of others to improve their work.	
<p>Year 4</p> <p>Ancient Civilisation</p> <p>On the move</p> <p>Down on the farm</p>	<p>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 annotated sketches. Select from and use a wider range of materials and components, according to their functional properties and aesthetic qualities. Select from and use a wider range of tools and equipment to perform practical tasks accurately. Evaluate their products against the set design criteria.</p> <p>Understand and use mechanical systems.</p> <p>Investigate and analyse a range of existing products. Understand how key inventions, events or individuals in DT have helped shape the world</p>	<p>Research patterns used on the tiles of the squares from the ancient board game: The Royal Game of Ur. Produce design criteria, as a class, needed to make the tile. Design own clay tile in the style of one of the squares from the ancient board game: The Royal Game of Ur. Produce an annotated sketch in the ordered plan of activities needed to be carried out and explain it to others and say how realistic the plan is. Make a clay tile in the style of one of the squares from the ancient board game: The Royal Game of Ur. Explain how their one tile will work with the others tiles made to form the board game. Work through the plan in order adjusting it if necessary. Measure carefully, mark out, cut and shape materials with some accuracy using wire clay cutter. Apply a varnish as a finishing technique and a strengthening technique and discuss its advantage in this product. Select suitable clay tools to shape the clay to get the desired effect. Evaluate the tile produced against the design criteria and show the design meets the range of requirements and is fit for purpose. Explain alterations that were made to the planned order. Design and Make a clay counter based of research of original counters from the ancient board game: The Royal Game of Ur. Discuss how Ancient Sumerians would have used levers to move materials to build cities.</p> <p>Investigate the purpose of cat's eyes or traffic lights and how they work and how they are fit for purpose. Collate inventions that have helped shape the world of transport such as traffic lights, cat's eyes, motor cars & electric cars. Understand how the inventions or individuals have helped shaped the world we live in today. Discuss by whom, when and where the products/inventions of cat's eyes and 3-point traffic lights were designed. Know about the inventors Percy Shaw and Garrett Morgan.</p> <p>Cooking and Nutrition: Identify types of food that can be grown or reared on a farm and establish the different types of farms there are e.g. arable farming (crops), pastoral farming (animals) and mixed farming (crops and animals). Know types of produce that is produced on farms and foods this goes on to make. Understand the difference between fresh, pre-cooked and processed and name some foods that fit each</p>

	<p>Understand and apply the principles of a healthy and varied diet.</p> <p>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Prepare and cook a variety of savoury dishes using a range of techniques.</p> <p>Understand and use mechanical systems.</p>	<p>category. Discuss that farms produce different foods in the different seasons and thus begin to understand seasonality. Look at some farming calendars and see how the crops grown change according to the season. Identify principles of a healthy and varied diet. Prepare some vegetable-based dishes e.g. coleslaw, potato salad, stir fry using different techniques e.g. boiling, chopping, frying, slicing, grating, mixing. Use the skills of frying and boiling to prepare foods and know the difference. Prepare and cook some dishes safely and hygienically. Think about presenting products in interesting/attractive ways.</p> <p>Know what pneumatics are and what existing products use them.</p> <p>Use pneumatics to create movement by making a minibeast that open and closes its mouth.</p>
<p>Year 5</p> <p>Anglo-Saxons, Scots and Vikings</p> <p>Ancient Greece</p> <p>The Wonder of Nature</p> <p>A Tale of Two Cities (London and Paris)</p>	<p>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. Investigate and analyse a range of existing products. Generate, develop, model and communicate their ideas through annotated sketches and cross-sectional diagrams. . Select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, according to their</p>	<p>Use internet to research design ideas for an Anglo-Saxon purse. Identify the techniques (sewing) needed to make a drawstring purse. Identify the stitch type used in a drawstring purse. Practise a variety of stitches on material or binca. Create own design criteria for making an Anglo-Saxon drawstring purse. Plan own drawstring purse design using annotated sketches and cross-sectional diagrams and include using a number of different stitches. Produce a list of tools and equipment needed to make the design. Produce and follow a step by step plan for the product. Choose appropriate needles and thread for the desired effect. Explain plan to others. Use own template to make the outline of the Anglo- Saxon drawstring purse. Think about user and aesthetics when choosing textiles. Accurately measure, mark out, cut and shape textiles. Take the users view into account when designing. Use different sized needles</p>

	<p>functional properties and aesthetic qualities. Evaluate their products against their own design criteria and consider the views of others to improve their work.</p> <p>Apply understanding of computing to programme, monitor and control their products.</p> <p>Understand and use mechanical systems in a product. Understand how key events and individuals in design and technology have helped shape the world.</p> <p>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.</p>	<p>and different thickness of thread to sew hem, sides and create a drawstring. Explain how parts of the product will work. Use success criteria produced to evaluate own design and identify features to improve from views of others. Use purpose and appearance as a focus for evaluating the product. Use Amazon to investigate price of drawstring material purse like the one they have created and discuss prices and whether they feel they are correct giving reasons why. Test product made and identify if it was fit for purpose.</p> <p>Begin to look at computer aided design to produce 3D images. Use Tinkercard to produce name and shape in 3D. Show all angles of the 3D image from front, top, right, left positions.</p> <p>Know what a pulley is. Understand how, since their possible invention in Ancient Greek times, pulleys have helped shape the world, as to what they can do. Identify products in everyday life that use a pulley technique. Know the main types of pulleys and their functions. Understand that Archimedes was possibly the first person to use a compound pulley. Make a simple pulley from given instructions.</p> <p>Cooking and Nutrition: Know all the different food groups and examples of foods that belong to them. Know the benefits each group has for the body. Explain how there are different substances in food/drink needed for health. Describe an 'eat well plate' and how a healthy diet equals variety/balance of food and drink. Understand the effects unbalanced diets can have on our bodies. Know how to prepare food safely eg washing hands, using a knife, using a chopping board. Understanding the hygiene regime needed for using chopping boards. Discuss the difference between some of the basic cooking techniques: boiling, roasting, frying, sautéing, simmering. Use peeling, chopping, slicing, grating. Prepare potatoes using as many as the techniques as possible and taste them. Compare the difference in terms of preparation and taste and describe had different preparation techniques can change the appearance, taste, texture and aroma of the potato.</p> <p>Discuss what design features make the Eiffel Tower a strong structure. Recap paper strengthening techniques talked about in Y3 e.g. tabs, triangle, tubing and diagonal brace structures. Use paper</p>
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	<p>Apply understanding of how to strengthen, stiffen and reinforce more complex structures.</p>	<p>strengthening techniques and paper straws (to create arc like structure in Eiffel Tower) to make an Eiffel Tower. Measure accurately to ensure precision. Reinforce a 3D frame to make it stronger. Ensure product is strong and fit for purpose.</p>
<p>Year 6</p> <p>Africa in the Past</p> <p>Circuits</p> <p>The Science of Survival</p> <p>Changes</p>	<p>Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose.</p> <p>Select from and use a range of tools and equipment to perform practical tasks accurately.</p> <p>Select from and use a wider range of materials and components including textiles and ingredients according to their functional properties and aesthetic qualities.</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p>	<p>Research from pictures types of jewellery worn in Benin. Draw on market research by asking teachers design preferences for necklace lengths and size of pendants to inform design produced. Produce design criteria from research to demonstrate typical Benin jewellery. Create own design criteria having done market research for design. Use annotated sketches, cross-sectional planning and exploded diagrams for Benin jewellery design. Explain how parts of the design will work and how they are fit for purpose. Create, follow and adapt a step by step plan for Benin jewellery design. Identify the unique feature of the design that will appeal to user having done market research. Make a list of resources needed to make Benin jewellery design. Select resources from a range produced to suit purpose and explain choices. Make the product attractive and strong. Use wire cutters precisely. Evaluate jewellery against criteria set and explain how the product will appeal to the audience. Test and evaluate final product considering how well it's been made, use of materials, is it fit for purpose. Use Amazon to research the cost of necklaces and resources to make them and suggest suitable price to sell if it was going to market. Discuss possible ways to best sell the product if it was mass produced and went to market. Research and discuss how sustainable the resources are that the jewellery was made from eg metal, plastic, wood. Discuss the impact of the product they have made beyond their intended purpose.</p> <p>Investigate and analyse a range of existing products that have an electrical circuit e.g. The game operation.</p>

	<p>Understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors)</p> <p>Apply their understanding of computing to programme, monitor and control products. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer aided design. Use research and develop design criteria to inform the design of functional appealing products that are fit for purpose. Select from and use a wider range of materials and components including textiles and ingredients according to their functional properties and aesthetic qualities.</p> <p>Explore and use mechanisms, in their products.</p>	<p>Research how to make classroom games and activities using circuits e.g. moving clown, wire loop game, birthday cards, and a quiz. Use annotated sketches, cross-sectional planning and exploded diagrams for electrical circuit game. Create, follow and adapt a step by step plan.</p> <p>Design and make a product that incorporates an electrical circuit e.g. wire loop game, toy car, quiz, birthday card. Incorporate a buzzer/motor/switch in their product. Produce a step Think of the benefits adding a circuit to their product creates.</p> <p>Understand what floor robots are and how they are programmed and controlled.</p> <p>Generate and develop ideas through discussion to design a game.</p> <p>Research how different materials affect the movement and control of floor robots.</p> <p>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 by planning an adventure map. Use appropriate materials according to their functional properties and aesthetic qualities to create an adventure map using materials selected for their properties. Apply their understanding of computing to program, monitor and control their products by programming and monitoring floor robots on finalised adventure map.</p> <p>Explore different types of cams. Know what cams are and what they do.</p> <p>Create an animal cam toy.</p> <p>Cooking and Nutrition:</p> <p>Explain what seasonality means and know when different fruit and vegetables are in season in the United Kingdom. Explain where, when and how a variety of ingredients are reared, caught and processed. Learn about food processing methods. Taste and evaluate seasonal foods and recognise that sometimes we need to try a new food a few times to find out if we like it. Explain the importance of protein as a proportion of a healthy varied diet and know the foods that are high in protein. Explain how to correctly store and handle meat and fish. Work as a group to generate, evaluate and refine recipe ideas.</p> <p>Understand a recipe can be adapted by adding/substituting ingredients. Plan a meal to cook at home identifying techniques that are going to be used e.g. boiling, peeling, chopping, slicing, and grating.</p>
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	<p>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed in the UK. Understand and apply the principles of a healthy and varied diet. Select from a wider range of ingredients, according to their functional properties and aesthetic qualities.</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p> <p>Apply understanding of computing to programme, monitor and control their products.</p>	<p>Prepare, cook and evaluate a healthy seasonal meal (children to this at home). Prepare loaves of bread by kneading and baking (cooking to be done at home, kneading at school.)</p> <p>Use Tinkercard (free web programme) to explore how you can use a computer to produce a computer generated designs. Create own computer generated design.</p>
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