



St Cuthbert's C of E Primary School

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St Cuthbert's C of E Primary School Skills Progression for Design and Technology

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	<p>Use senses to explore a wide range of familiar products.</p> <p>Take simple products (think about components) apart and talk about their parts and how they work.</p> <p>Talk about and/or use construction materials, pictures and words to plan and design.</p> <p>Talk about what has been done/made in simple terms.</p>	<p>Use knowledge of existing products to support plans for a similar product.</p> <p>Describe, explore and investigate products that have been disassembled (think about components).</p> <p>Use construction kits, pictures, templates, mock ups and captions to plan and design.</p> <p>Talk about and describe the tools and materials needed in order complete the key tasks within a plan.</p>	<p>Use knowledge of a range of products to inform plans and designs. Chocolate</p> <p>Talk about and disassemble products (think about components) and describe their function. Chocolate</p> <p>Use simple prototypes, labelled sketches and detailed instructions in plans and designs. Stone Age</p> <p>Talk in depth about ideas, plans and reasons for choices. all</p>	<p>Use research to develop design criteria that are fit for purpose.</p> <p>Disassemble products (think about components) and describe in detail their functions.</p> <p>Use annotated sketches, cross-sectional, exploded diagrams and increasingly complex prototypes.</p> <p>Support discussions about ideas, plans and designs with relevant information.</p>	<p>Generate plans and designs based on research and ideas that take account of the users' views and the intended purpose.</p> <p>Produce detailed designs and plans using prototypes, commentary and diagrams that include accurate measurements.</p> <p>Link discussions about ideas, plans and designs to the investigation, disassembly and evaluation of a range of products describing in detail their parts and their function.</p>	<p>Clarify and justify plans, designs and ideas by drawing upon and using a range of relevant sources of information.</p> <p>Produce increasingly detailed designs and plans using prototypes, commentary and diagrams that include accurate measurements.</p> <p>Discuss ways in which ideas, plans and designs are formed and modify to ensure that the design criteria are met effectively.</p>

<p>Make</p>	<p>Use the senses to explore and talk about materials.</p> <p>Use simple tools and materials with support,</p> <p>Cut paper/card using scissors.</p> <p>Join with tape or glue.</p> <p>Roll paper and card to form a tube.</p> <p>Add paper and card shapes to products.</p> <p>Apply simple finishes e.g. paint, PVA glue glaze.</p> <p>Follow procedures for safety and hygiene.</p>	<p>Explore and talk about the characteristics of an increasing range of materials.</p> <p>Select and use simple tools to cut and join a range of materials.</p> <p>Use a straight edge to mark lines for cutting.</p> <p>Join edge to edge using glue.</p> <p>Curl paper.</p> <p>Use a hole punch and stapler.</p> <p>Select from a range a finish to improve the appearance of a product.</p> <p>Follow procedures for safety and hygiene.</p>	<p>Select materials and components according to known characteristics and functions. Stone Age</p> <p>Select and use an increasing range of tools to cut, shape and join materials and components. Brilliant Britain</p> <p>Use a ruler to measure and mark lines for cutting. Brilliant Britain, Pyramid puzzle</p> <p>Make and use gluing tabs. Pyramid puzzle</p> <p>Make simple paper models, mock-ups and templates. Stone Age, Pyramid puzzle</p> <p>Select an appropriate way to improve the appearance of a product. Brilliant Britain</p> <p>Follow procedures for safety and hygiene. Brilliant Britain, Chocolate</p>	<p>Select from and use a wide range of materials and components according to both functional and aesthetic qualities.</p> <p>Select and use tools and equipment to measure, mark out and shape materials and components.</p> <p>Insert paper fasteners for card linkages.</p> <p>Make increasingly complex paper models, mock-ups and templates.</p> <p>Select the most effective finish to enhance the appearance of a product.</p> <p>Follow procedures for safety and hygiene.</p>	<p>Select a range of appropriate tools to cut, shape and join materials and components effectively.</p> <p>Select and use tools and equipment to measure, mark out and shape materials and components accurately.</p> <p>Join and combine materials and components in permanent and temporary ways.</p> <p>Make a range of complex paper models, mock-ups and templates.</p> <p>Produce a well-finished product that fulfils the functional and aesthetic design criteria.</p> <p>Use a hack saw and bench hook safely.</p> <p>Follow procedures for safety and hygiene.</p>	<p>Select a range of appropriate tools to cut, shape and join materials and components with accuracy and precision.</p> <p>Use an increasing range of tools and equipment to measure, mark out and shape materials and components accurately.</p> <p>Join and combine a range of materials and components using the most effective permanent and temporary way.</p> <p>Identify and apply an appropriate finishing technique to ensure a high quality end product which meeting the design criteria.</p> <p>Follow procedures for safety and hygiene.</p>
<p>Evaluate</p>	<p>Use the senses to explore a wide range of familiar products.</p> <p>Talk about familiar products and what they do.</p> <p>Talk about what has been made and the steps taken to achieve the outcome.</p>	<p>Talk about and describe key features of a range of products.</p> <p>Explore and evaluate a range of existing products.</p> <p>Begin to evaluate the success of the product in terms of function and aesthetic criteria.</p>	<p>Use knowledge of a range of products to inform plans and designs. Chocolate</p> <p>Talk about and disassemble products (think about components) and describe their function. Chocolate</p> <p>Use simple prototypes, labelled sketches and detailed instructions in plans and designs. Stone Age</p> <p>Talk in depth about ideas, plans and reasons for choices. Stone Age</p>	<p>Investigate and begin to analyse a range of existing products.</p> <p>Use knowledge of similarities and differences between products with the same function to support identification of most effective product.</p> <p>Evaluate ideas and products against own design criteria, taking into account the views of others.</p>	<p>Investigate and use analysis of existing products to inform own work.</p> <p>Identify from a range the key features and functions needed to create an effective and efficient working product.</p> <p>Give reasons, supported by factual evidence for the success of aspects of a product.</p>	<p>Use analysis of existing products supported by accurate factual information to inform own work.</p> <p>Give reasons, supported by factual evidence for the success of aspects of a product and provide considered solutions to resolve those parts that could be improved.</p>

	Explore and talk about products made by famous inventors, designers, engineers, chefs and manufacturers, e.g. the vacuum cleaner.	Gain an understanding of the way in which the work of famous inventors, designers, engineers, chefs and manufacturers have impacted on the development of product design and function, e.g. Dyson use to inform and support evaluation and further development of own product.				
Axles, Pulleys and Gears	Use junk modelling materials to build boxes.	Deconstruct and reconstruct boxes accurately. Attach wheels to a chassis using an axle, e.g. cotton reels and dowel. Use pencils or tubes as rollers to move an object across the floor.	Construct cubes of different sizes from a net. Robots Construct a simple pulley using rope over a horizontal bar to raise an object off the ground. Raging Rivers	Construct cuboids of different sizes from a net.	Describe in detail the way in which an axle and chassis help a vehicle to move. Use a range of different ways to attach an axle to a chassis, e.g. card triangles, drilled holes, cable clips and clothes pegs. Identify, describe and evaluate products that contain pulleys and drive belts.	
Electrical and Mechanical Components		Use remote controlled devices, e.g. a remote controlled vehicle, Bee bot etc Talk how equipment can be used safely. Create a simple circuit using a battery, bulb and wires.		Describe how a simple battery powered circuit can be controlled by different kinds of switches. Talk about simple electrical safety. Create simple circuits incorporating a battery, bulb, switch, buzzer and wires.		Explore and describe how switches can be used in a range of circuits to control components, e.g. lights in a lighthouse, a movement sensor in a burglar alarm. Apply appropriate safety measures when constructing circuits. Explore and discuss ways in which electricity can be used to control movement. Explore and use an increasing range of complex control system, e.g., a light sensor.
Food Technology	Sort fruit and vegetables by taste, shape, size, colour, texture and simple food groups, e.g. meat, vegetables etc. Talk about the changes that take place when food is shaped and mixed. Use basic tools to cut, shape and mix, e.g. cutters and whisks.	Sort and classify food into food groups, e.g. vegetables, pulses, cereals, dairy etc. Talk about what happens when food is heated and cooled. Measure and weigh accurately using cups and spoons. Work safely and hygienically.	Sort and classify an increasing range of food according to specific food groups, e.g. proteins, carbohydrates, fats etc. PSHE Talk about what needs to be done in order to work safely and hygienically. Cadburys Measure and weigh using standard units and scales. Brilliant Britain scones	Gain an understanding of the ways in which specific food groups apply to the principles of a health and varied diet. Identify what needs to be done in order to work safely and hygienically when working on a range of tasks. Convert measure and weigh using standard and imperial units. Give reasons for the way in which food processing can	Understand seasonality, know where and how a variety of ingredients are grown, reared, caught and processed. Talk about and give reasons for the need to work safely and hygienically. Talk about the impact of changing proportions within a recipe and use knowledge of food and cooking to generate own recipes. Talk in scientific terms about the physical and chemical changes that take place when food is cooked, e.g. heated and cooled	Increasingly Talk about and give reasons for the need to work safely and hygienically. Select the appropriate methods and equipment for measuring, e.g. time, dry goods, liquids etc. Increasingly talk in scientific terms about the physical and chemical changes that take place when food is cooked, e.g. heated and cooled

			Discuss about the way in which food processing can affect the taste, appearance, texture and colour of food. Chocolate	affect the taste, appearance, texture and colour of food.		
Mechanisms		Construct a simple slider independently. Make a lever by joining card strips with paper fasteners.	Deconstruct a range of sliders and describe how they work. Pyramid Puzzle toy Construct increasing complex sliders. Pyramid Puzzle toy Join levers to make linkages to create moving parts. Pyramid Puzzle toy		Create a range of sliders and levers to produce horizontal and vertical movement. Vary the position of the pivot point to lift a load using a lever. Combine sliders and levers to produce a range of movements.	
Structures	Explore and investigate a range of simple, large scale construction materials, e.g. cardboard boxes. Explore building, bridges and towers using large and small-scale construction materials, e.g. Duplo, cardboard boxes. Make simple 2D structures using straws.	Construct a range of simple structures using simple construction kits. Make a structure more stable by widening the base. Make a square frame from strip wood using triangular card joints. Make a simple card hinge.	Deconstruct and assemble the net of basic 3D shapes. Pyramid Puzzle toy Strengthen 2D frames by adding diagonal bracing struts. Xmas craft Make a rectangular frame from strip wood. Xmas craft Use materials to make simple joints, glue, tape and paper clips. Pyramid Puzzle toy	Deconstruct and assemble the net of a range of basic 3D shapes. Join 2D frames to create 3D structures. Use a range of materials to make joints.	Create nets of increasingly complex 3D shapes which include the addition of gluing tabs. Reinforce and strengthen 3D framework using the concept of 'triangulation' . Use a range of materials to make joints e.g., card strips, elastic bands, thread and ties, and plastic tubing.	Create nets and templates accurately in a range of sizes. Use a range of increasing methods to strengthen 3D structures and frames.

<p>Textiles</p>	<p>Explore, sort and group textiles by texture and colour etc.</p> <p>Cut and stick fabrics together.</p> <p>Apply simple finishing techniques, e.g. fabric crayons, gluing on feathers etc.</p>	<p>Join fabrics using glue, staples and thread.</p> <p>Apply an increasing range of finishing techniques, e.g. painting and printing.</p>	<p>Cut and join fabrics using running stitch, buttons and bond web. Brilliant Britain</p> <p>Decorate fabric by applying beads and sequins. Brilliant Britain</p>	<p>Make and use a simple paper pattern.</p> <p>Join fabrics in a range of different ways using zips, tie clasp, toggles, press-studs and buttons.</p> <p>Use a wide range of simple finishing techniques.</p>		<p>Sew using a range of stitches including, backward running stitch and over sewing.</p> <p>Use a wide range of techniques to add colour, texture and pattern to fabric.</p>
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