

# Curriculum Overview – Design Technology 2023-24

Year Group	Area of Study	Key Skills	Knowledge	Vocabulary
Year 3	<p><u><a href="#">Sculpture – Create a 3D Bird/Investigate Totem Poles</a></u></p> <p>What is sculpture?</p> <p>What materials can be used to create sculptures/3D pieces of art?</p> <p>Can 3D art structures have deeper meanings?</p> <p>Mediums used: Watercolours, oil pastels, wax crayons, coloured pencils</p>	<ul style="list-style-type: none"> <li>• Practise sketching skills in a sketchbook</li> <li>• Practise using different mediums to create ideas for use in a finished sculpture</li> <li>• Select and use appropriately, a variety of materials and painting/fixing techniques in order to create their finished work</li> <li>• Be able to say what they like or dislike about their work in order to improve it</li> <li>• Be able to relate totem images to themselves and their family</li> </ul> <p>Materials used: Paper, card, feathers, pipe cleaners, scissors, glue, sheet of designs ideas created during lesson</p>	<ul style="list-style-type: none"> <li>• Know some of the world's most famous sculptures</li> <li>• Know that sculptures can be made from many different materials and objects</li> <li>• Understand that totem poles are part of the Native American culture in the USA and Canada</li> <li>• Know that the images carved into totem poles have meanings attached to them</li> </ul>	<p>2-dimensional 3-dimensional mediums indigenous</p>
	<p><u><a href="#">Packaging – Design Packaging for an Imaginary Product</a></u></p> <p>What is the purpose of packaging? What materials make the best packaging?</p> <p>Can some products we buy be over-packaged?</p> <p>Have materials used for packaging changed?</p> <p>Gain knowledge about nets and about how simple and complex 3D shapes can be made by using a net</p> <p>Look at re-cycling – are manufacturers are being encouraged to use materials that can be recycled?</p> <p>Develop designing skills by investigating, disassembling and evaluating a range of commercial packaging</p> <p>What information can be found on a grocery package?</p>	<ul style="list-style-type: none"> <li>• Make nets using Polydron of simple and complex 3D shapes</li> <li>• Use net knowledge to accurately draw cube net</li> <li>• Accurate measuring, cutting, scoring, folding and sticking</li> <li>• Assemble a cube net</li> <li>• Evaluation of finished cube - does it fit together properly? If not, how could problems be rectified?</li> <li>• Use knowledge of recycling symbols to correctly sort packaging</li> <li>• Look at features often found on a cereal box and annotate pictures with labels</li> <li>• Disassemble and reassemble a box carefully so that a new design can be created on the outside</li> <li>• Use research of packaging and annotated photographs to include features on their own packaging for an imaginary product</li> </ul>	<ul style="list-style-type: none"> <li>• Name some 3D shapes</li> <li>• Know that 3D shapes are created using nets</li> <li>• Know the materials most commonly used for packaging</li> <li>• Know recycling symbols and be able to sort packaging into recyclable/non-recyclable groups</li> <li>• Understand the reasons for some of the information found on packaging</li> </ul>	<p>net assemble disassemble annotate</p>

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	<p>Mediums used: Coloured pencils, coloured pens</p>	<p>Materials used: Cardboard boxes, scissors, sellotape, glue, Polydron shapes</p>		
	<p><b><u>Picture Frames – Create a Picture Frame for Yourself or a Named Person</u></b></p> <p>Design a picture frame for personal use or as a gift for a particular person Investigate a variety of commercially made photo frames focussing on their structure and how they stand up</p> <p>Ask the questions – do all picture frames have to stand up? How well have these frames been designed and made?</p> <p>What materials have been used in their construction?</p> <p>Can you name the component parts of a picture frame</p> <p>Discuss ways in which picture frames can be decorated and personalised</p> <p>Mediums used: Paint, coloured pencils, coloured pens</p>	<ul style="list-style-type: none"> <li>• Draw a de-constructed picture frame (front, back, side) and label</li> <li>• Produce a success criteria for their intended frame</li> <li>• Follow step by step instructions for stand construction</li> <li>• Accurately fold and cut</li> <li>• Generate ideas for their own picture frame – draw and label</li> <li>• Practise quilling as a possible way to decorate frames</li> <li>• Manipulate tissue paper to create flowers for possible decoration</li> <li>• Select appropriate embellishments for their frame based on their success criteria and intended recipient</li> <li>• Be able to plan the order of their work before starting</li> <li>• Refine and evaluate work during and after the make against the original success criteria</li> </ul> <p>Materials used: Card, coloured paper, sugar paper, tissue paper, sequins, wool, string, small pasta shapes, beads, pipe cleaners, pom poms, masking tape, glue, acetate sheets</p>	<ul style="list-style-type: none"> <li>• Know picture frames can be made from many materials</li> <li>• Understand that some can be free standing</li> <li>• Know how to make a strong, stable stand</li> <li>• Name the parts of a picture frame</li> </ul>	<p>component quilling embellishments</p>
<b>Year Group</b>	<b><u>Area of Study</u></b>	<b><u>Key Skills</u></b>	<b><u>Knowledge</u></b>	
<b>Year 4</b>	<p><b><u>Books with Pop-Ups and Moving Mechanisms</u></b></p> <p>Research the content and design of books with pop-ups and moving mechanisms</p> <p>What is the target market for these type of books?</p>	<ul style="list-style-type: none"> <li>• Use a sketchbook to formulate possible ideas for creating a book demonstrating different pop-ups and mechanisms</li> <li>• Follow step by step instructions</li> <li>• Use scissors and craft materials carefully and safely</li> </ul>	<ul style="list-style-type: none"> <li>• Be able to tell someone else three types of mechanism that could be used when creating this type of book and say how they work</li> <li>• Be able to make decisions as to which mechanisms or pop-ups suit their page ideas the best</li> </ul>	<p>inkage pivot split pin lever hinge joint mechanism</p>

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	<p>Look at the construction and assembly of a range of simple mechanisms commonly used in books with moving parts</p> <p>Can you describe how they work?</p> <p>Produce a piece of work to a high standard with pages that incorporate moving parts</p> <p><b>Mediums used:</b> Coloured pencils, coloured pens, wax crayons</p>	<ul style="list-style-type: none"> <li>• Accurately measure, mark out, cut, score and fold paper and card</li> <li>• Effectively join materials using appropriate methods</li> <li>• Ability to evaluate work throughout the design and make process – test and modify if necessary</li> </ul> <p><b>Materials used:</b> Card, coloured paper, print outs of cartoon characters, scissors, split pins, glue, rulers</p>	<ul style="list-style-type: none"> <li>• Gain an understanding of the target market for these books -6mths – 11 years approx.</li> </ul>	score slider rotate/rotating
	<p><u><a href="#">Light It Up – Press Torches</a></u></p> <p>Look at how torches can be made for specific purposes</p> <p>Design and make a press torch using cells and a diode for a named group or person</p> <p>Consider your target market – it could be for a club you belong to or for a member of your family</p> <p><b>Mediums used:</b> Coloured pencils, coloured pens,</p>	<ul style="list-style-type: none"> <li>• Research a selection of lighting and discuss purposes, functions and where they have been designed for use</li> <li>• Produce a design criteria, order of work and a list of required materials for the project</li> <li>• Draw and label a design based on the design criteria</li> <li>• Accurately mark out and cut materials required</li> <li>• Test the circuit which uses a diode and adjust if necessary</li> <li>• Effectively join pieces together</li> <li>• On-going evaluation of design and make during the process</li> </ul> <p><b>Materials used:</b> Card, foam sheets, diodes, cells, glue, scissors</p>	<ul style="list-style-type: none"> <li>• Know the component parts of an electrical circuit</li> <li>• Be able to explain how an electrical circuit works</li> <li>• Understand that electrical circuits must be constructed in a particular way to make them work</li> <li>• Testing and development of a product is an essential part of the design process</li> </ul>	
<b>Year Group</b>	<b><u>Area of Study</u></b>	<b><u>Key Skills</u></b>	<b><u>Knowledge</u></b>	
<b>Year 5</b>	<p><u><a href="#">Design and Create a Biscuit</a></u></p> <p>Learn a little about the origins of biscuits as we know them today</p>	<ul style="list-style-type: none"> <li>• Begin to understand that biscuits are designed for specific target markets</li> <li>• Create a bar chart to represent the class biscuit tasting results</li> </ul>	<ul style="list-style-type: none"> <li>• Understand how certain ingredients can change the texture and flavour of a finished product</li> <li>• Know how to handle equipment safely</li> </ul>	

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	<p>Through the tasting and evaluation of commercially produced biscuits, students increase their understanding and knowledge of food and the skills needed to design and product of their own</p> <p>What is the class favourite biscuit?</p> <p>Students learn how to adapt a basic recipe to develop a product with specified criteria</p> <p>Equipment used: Bowls, spoons, knives, cups, weighing scales, baking paper, baking trays, oven gloves</p>	<ul style="list-style-type: none"> <li>• Be able to generate ideas for their own biscuit design based on their knowledge of the product after brainstorming session and tasting</li> <li>• Develop a clear idea of what has to be done, by planning using drawings and labels</li> <li>• Apply the rules for basic food hygiene and other safe practices in the kitchen</li> <li>• Follow a recipe, using scales and other equipment in an appropriate way</li> <li>• Add chosen ingredients understanding how they may change the basic mixture that has been made</li> <li>• Make positive criticism of the product with a view to improving/altering against the design criteria</li> </ul>	<p>Understand that when baking, it is important to follow a recipe exactly if the finished product is to be successful</p> <ul style="list-style-type: none"> <li>• Know how to read a scale on a set of weighing scales</li> <li>• Know and apply basic hygiene rules relating to the preparation and cooking of food</li> <li>• Explaphysical and chemical changes that occur in food when it is heated or cooled</li> </ul>	
	<p><u>Talking Textiles</u></p> <p>What is a textile?</p> <p>Explore how some textiles can have meaning/tell stories</p> <p>Take a look at the Bayeux Tapestry – what story does it tell? What is it made from? How and when was it made?</p> <p>Listen to part of a Norse saga to enable work later in the topic</p> <p>Introduce the style of Mola art from Panama</p> <p>Look at animals and birds that live in Scandinavian countries</p> <p>Create a piece of artwork in the style of Mola art</p> <p>Discuss the technique of tie-dye and create a simple example</p> <p>Print on fabric using fabric paints and rollers</p>	<ul style="list-style-type: none"> <li>• Use a sketchbook to draw and record ideas for a Viking tapestry</li> <li>• Accurately cut a paper template reducing it in size several times</li> <li>• Experiment with colour and pattern</li> <li>• Manipulate elastic bands and string around objects in material</li> <li>• Cut a template from sticky-backed plastic</li> <li>• On-going self-evaluation of work throughout the whole of this topic</li> <li>• Being able to adapt ideas as and when necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Use prior knowledge to explain where Norse sagas originated</li> <li>• Name some northern hemisphere animals</li> <li>• Know how to confidently use and exploit the potential of new and unfamiliar materials and mediums</li> </ul>	<p>sequence sequencing textile tapestry appliqué</p>

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	<p>Mediums used: Coloured pencils, fabric paint</p>	<p>Materials used: Coloured paper, squares of white fabric, baby wipes, small objects e.g. pebbles, elastic bands, string, rollers, paint trays, scissors, glue</p>		
Year Group	Area of Study	Key Skills	Knowledge	
Year 6	<p><u>Sewing – Cross-Stitch Christmas Card</u></p> <p>Complete a Christmas card using cross stitch</p> <p>Plan a symmetrical Christmas tree pattern on squared paper</p> <p>Materials used: Squared paper, coloured pencils/pens, binca, needles, selection of embroidery threads, scissors, needle threaders, coloured card</p>	<ul style="list-style-type: none"> <li>• Create and follow a design using crosses</li> <li>• Transfer a design from paper onto a piece of binca successfully</li> <li>• Sew a cross stitch accurately</li> <li>• Tie knots in thread at the start and finish of sewing</li> <li>• Manipulate a needle and thread successfully</li> <li>• Thread and re-thread a needle</li> <li>• Use appropriate lengths of thread for the amount of stitches to be sewn</li> </ul>	<ul style="list-style-type: none"> <li>• Know what the word symmetrical means</li> <li>• Look at finished work and know that it is symmetrical</li> </ul>	•
	<p><u>Design and Construct a Shelter</u></p> <p>How many shelters can you name?</p> <p>Using a range of sources, investigate varying types of shelter thinking about their intended use/purpose, materials used, how might they have been constructed</p> <p>Join and combine materials using a variety of joining techniques</p> <p>Investigate methods of reinforcing and strengthening structures</p> <p>Design, construct and evaluate a shelter</p>	<ul style="list-style-type: none"> <li>• Using photographic resources, be able to answer investigative questions</li> <li>• Practise joining methods using paper straws</li> <li>• Investigate ways of reinforcing and strengthening structures</li> <li>• Sketch and annotate designs</li> <li>• Work with others in a small group situation</li> <li>• Communicate ideas clearly within the group</li> <li>• Follow a design criteria</li> <li>• Problem solve when the need arises</li> <li>• Practise measuring skills</li> </ul>	<ul style="list-style-type: none"> <li>• Know different methods of joining materials together successfully</li> <li>• Know the best way to reinforce joints</li> <li>• Name materials most commonly used to construct shelters and why they have been chosen</li> <li>• Know the importance of accurate measurements when constructing a structure</li> <li>• Recognise possible hazards, assess consequent risk and know how to take steps to control risks</li> <li>• Know how to use woodworking tools safely</li> </ul>	•

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	<p>Materials used: Paper straws, elastic bands, pipe cleaners, tapes, glue, card of differing thicknesses, lengths wood, wood glue, tacks, hammers, G-clamps, cutting blocks and mats, hot glue, hacksaws, pencils, rulers</p>			
	<p><b><u>Design and Construct an Electrical Loop Game</u></b> Design and construct a loop game for an intended group of users</p> <p>Re-cap on symbols used when writing a circuit map</p> <p>Construct a circuit incorporating a light and then a buzzer</p> <p>Materials used: Paper, card of different thicknesses, pens/pencils, wire of differing thicknesses, tapes, corks, batteries, wires, lights, buzzers, bradawls, wire cutters, pliers, hot glue</p>	<ul style="list-style-type: none"> <li>• Construct a simple electrical circuit</li> <li>• Be able to add a light and a buzzer successfully</li> <li>• Develop a design criteria with a group of users in mind</li> <li>• Generate, develop, communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams</li> <li>• Evaluate ideas and products against their own design criteria and consider the views of others to improve their work</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to draw an electrical circuit map using the correct symbols</li> <li>• Know an electrical circuit has to be made in a certain way for it to work</li> <li>• Know the appropriate tools and components to use for this task to be successful</li> <li>• Understand how to use tools safely</li> <li>• Realise that the more complicated the wire loop the harder the game will be to complete without triggering the light or buzzer – an important fact to bear in mind designing for target group</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

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