



Design and Technology MTP – Year 5-6 Spring

Wooden key holders

National Curriculum	Wk.	NC coverage	Knowledge and Skills	Key Vocab	Activity Outline
To evidence D&T, a project booklet needs to be created.					
<p>Purpose of study: Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.</p> <p>Aims The national curriculum for design and technology aims to ensure that all pupils:</p>	1	investigate and analyse a range of existing products	Develop a technical vocabulary appropriate to the project.	Safety Personal Protective Equipment (PPE) Tool handling	TBQ: What is woodworking? Introduce students to the different tools they will use throughout the project, such as saws, hammers, screws, sandpaper, and wood glue. Discuss the importance of safety when using tools, covering personal protective equipment (PPE) like goggles and aprons. Teach proper handling of tools and demonstrate basic cutting, sanding, and measuring techniques. Students will observe safety demonstrations and practice using hand tools in a controlled environment, supervised by the teacher.
	2	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	Use models, kits and drawings to help formulate design ideas.	Design Sketching Dimension	TBQ: What is our design process? Discuss the importance of planning and designing before starting to make the key holder. Show examples of key holder designs, explaining the functionality and aesthetic aspects. Students will create their own sketches, considering dimensions and any decorative elements (e.g., hooks or a painted background). Provide guidance on making measurements, choosing shapes, and using design software or paper templates to map out their ideas.
	3	use research and develop design criteria to inform the design of innovative, functional, appealing	Sketch and model alternative ideas.	Measurement Marking	TBQ: Why do I mark the wood? Demonstrate how to measure and mark the wood accurately, focusing on using a ruler, square, and pencil.



<ul style="list-style-type: none"> • 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. <p>Key stage 2 Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:</p> <p>Design:</p> <ul style="list-style-type: none"> • 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 		products that are fit for purpose, aimed at particular individuals or groups		Accuracy	<p>Students will learn how to take measurements from their design to mark the wood for cutting.</p> <p>Discuss the importance of precise measurements in woodworking for ensuring the final product fits together well.</p> <p>Students will begin measuring and marking their pieces of wood (for the back panel, hooks, and frame) based on their design sketches.</p>
	4	select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	Cut accurately and safely to a marked line.	<p>Sawing</p> <p>Coping saw</p> <p>Precision</p>	<p>TBQ: How do I use a saw?</p> <p>Demonstrate safe and correct sawing techniques. Show how to cut along the marked lines using a coping saw or junior hacksaw.</p> <p>Emphasize the importance of using both hands and working carefully to make straight, even cuts.</p> <p>Students will cut the pieces of wood for their key holders, focusing on staying within the marked lines and cutting accurately.</p> <p>Remind students of the importance of patience and focus when using saws.</p>
	5	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	Use appropriate finishing techniques for the project.	<p>Sanding</p> <p>Grain</p> <p>Abrasive</p>	<p>TBQ: Why do I need to sand?</p> <p>Demonstrate the sanding process, showing how to use sandpaper to smooth rough edges and surfaces after cutting.</p> <p>Discuss different types of sandpaper (e.g., coarse, medium, fine) and how to choose the appropriate grit for each step of the sanding process.</p> <p>Students will use sandpaper to smooth their wood pieces, ensuring there are no sharp edges or splinters.</p> <p>Remind students to sand in the direction of the wood grain to achieve a smoother finish.</p>



<p>groups</p> <ul style="list-style-type: none"> generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately 	6	<p>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</p>	<p>Select from and use a wide range of tools</p>	<p>Assembly</p> <p>Glue</p> <p>Alignment</p>	<p>TBQ: How do I assemble my product?</p> <p>Demonstrate how to join pieces of wood together using wood glue and small nails or screws.</p> <p>Discuss the importance of ensuring the pieces are aligned correctly before securing them with glue or nails.</p> <p>Students will begin assembling the frame of their key holders by gluing and securing the sides to the back panel.</p> <p>Encourage students to check the angles and ensure the frame is square and level before the glue sets.</p>
<ul style="list-style-type: none"> 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 <p>Evaluate</p> <ul style="list-style-type: none"> 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 	7	<p>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p>	<p>Join materials using appropriate methods.</p>	<p>Hooks</p> <p>Screwdriver</p> <p>Attach</p>	<p>TBQ: How do I attach hooks?</p> <p>Introduce students to different types of hooks that can be used in woodworking projects (e.g., screw-in hooks, small nails, or pegs).</p> <p>Demonstrate how to measure and mark the positions where the hooks will be attached to the frame.</p> <p>Students will use a small drill or screwdriver to attach the hooks to their key holders.</p> <p>Remind students to space the hooks evenly and ensure they are securely fixed.</p>
<p>Technical Knowledge:</p> <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical 	8	<p>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	<p>Use different methods to strengthen or reinforce their designs.</p>	<p>Finish</p> <p>Varnish</p> <p>Stain</p>	<p>TBQ: How do I finish my frame?</p> <p>Demonstrate how to apply paint, varnish, or wood stain to protect and decorate the wooden key holder.</p> <p>Discuss different types of finishes and how they can change the look of the wood (e.g., matte vs. glossy).</p> <p>Students will choose a finish for their key holders and apply it carefully, ensuring an even coat. Allow students time to let their frames dry.</p>



<p>systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>• apply their understanding of computing to program, monitor and control their products.</p>	9	<p>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	<p>Use appropriate finishing techniques for the project.</p>	<p>Touch-up</p> <p>Coat</p> <p>Durability</p>	<p>TBQ: Why do I need to sand my product?</p> <p>After the first layer of finish has dried, students will lightly sand the frame to remove any imperfections or rough spots.</p> <p>Demonstrate how to apply a second coat of finish for a smoother, more durable surface.</p> <p>Students will reapply the finish to their frames and give them time to dry before proceeding.</p>
<p>Cooking and nutrition</p> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:</p> <p>• understand and apply the principles of a healthy and varied diet</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</p>	10	<p>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	<p>Refine their product – review and rework/improve.</p>	<p>Sturdy</p> <p>Adjustment</p> <p>Component</p>	<p>TBQ: How do I fix any issues?</p> <p>Students will check that all hooks are properly fixed, and the frame is sturdy.</p> <p>Discuss any issues that may have arisen, such as wobbling or loose hooks, and guide students in making necessary adjustments.</p> <p>Students will perform any final touch-ups or adjustments needed to complete their key holders.</p>
	11 - 12	<p>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p>	<p>Discuss how well the finished product meets the design criteria of the user. Test on the user!</p>	<p>Evaluation</p> <p>Reflection</p> <p>Peer-review</p>	<p>TBQ: Did I meet the design criteria?</p> <p>Students will fill out an evaluation sheet, reflecting on their design choices, the challenges they faced, and how well they executed their plans.</p> <p>Encourage students to identify what they would improve if they could do the project again.</p> <p>Provide time for peer reviews, where students give feedback on each other's key holders.</p>



ingredients are grown, reared, caught and processed.

Assessment

To evaluate students' understanding and skills in designing, making, and evaluating a wooden key holder. This assessment task will test practical skills, creativity, and reflection.

Part 1: Written Evaluation

Students will complete a written reflection on their project, addressing the following:

Design Process: Explain the inspiration behind their design, how they sketched their ideas, and how they ensured the design was functional and aesthetically pleasing.

Making Process: Describe the tools and techniques they used (e.g., sawing, sanding, gluing) and any challenges they faced. How did they ensure accuracy and safety?

Final Product Evaluation: Reflect on the final product, addressing these questions: Does the key holder meet the design brief? Is it functional and sturdy? What would you improve if you made this project again?

Students will participate in a peer review session, evaluating one classmate's key holder. They will use a checklist to provide constructive feedback, focusing on:

Design creativity.

Quality of construction.

Functionality and finish.



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