

Key Stage Two – Design and Technology

<u>Planned Outcome</u>	<u>Design</u>	<u>Make</u>	<u>Evaluate</u>
<u>Pine Class (Years 3 & 4)</u>			
Christmas Decorations (Link – ART) Vocabulary – Cutting, sewing, fabric, thread, materials, quilting, tying off, knot, stitching	<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 groups) -Can generate, develop, model and communicate their ideas through discussion -Can design products that are functional and designed for purpose -Can create a cross-sectional drawing of their design 	<ul style="list-style-type: none"> -Can join fabrics using wider range of stitches e.g. back stitch, chain stitch -Can choose the most appropriate joining technique to add a decoration to a piece of fabric -Can use given resources to embellish design. 	<ul style="list-style-type: none"> -Can explain strengths and weaknesses of existing products -Can evaluate work against own design criteria -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
Creating a shoe box room (Linked with Science – Electricity) Vocabulary Cardboard, glue gun, cutting, sawing, wheels	<ul style="list-style-type: none"> -Can generate, develop, model and communicate their ideas through discussion. -Can design products that are functional and designed for purpose ensuring key skills are included -Plan how they are going to use electrical systems in their products e.g. circuits including lights, buzzers, motors etc. -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). 	<ul style="list-style-type: none"> -Can include simple electrical circuit in products that produces one outcome e.g. light or sound. -Select from and use a wider range of tools and equipment to perform practical tasks e.g. shoe boxes. -Making items to scale. -Select from and use a wider range of materials and components, including construction materials, according to their functional properties. 	<ul style="list-style-type: none"> -Investigate and analyse a range of existing products they could have used. -Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. -Explain strengths and weaknesses in their final product. -Did the electrical features work as expected? -Was the product suitable and appropriate for the age group targeted?
Roman Catapults (Linked with History - Romans) Vocabulary	<ul style="list-style-type: none"> -Can discuss and describe well known designers and inventors and their work e.g. Romans -Can analyse a range of catapults to understand mechanisms. 	<ul style="list-style-type: none"> -Can choose appropriate materials and equipment to create design, considering safety, precision and accuracy. -Can use simple mechanical systems in products e.g. levers. 	<ul style="list-style-type: none"> -Test product to see how effective their design is. -Evaluate their finished product against their original design. -Suggest any improvements that could be made and implement these if possible.

<p>Levers, magnify, catapult, components, precision, accuracy,</p>	<ul style="list-style-type: none"> -Can generate, develop, model and communicate their ideas through discussion -Can design products that are functional and designed for purpose -Can annotate sketches and exploded diagrams e.g. magnify images 	<ul style="list-style-type: none"> -Can use a range of materials and components including construction materials. -Can strengthen and stiffen and reinforce complex structures 	
<p>Balanced Diet Making a seasonal soup (Could be linked with forest school) Vocabulary Slicing, cutting, chunks, measure, consistency, smooth, thick</p>	<ul style="list-style-type: none"> -Analyse different flavours and textures of a range of soups. -Describe what they like and dislike considering their own preferences. -Understands the principles of a healthy diet and all sections of the Eat Well plate. -Design an appropriate step by step recipe. -Understands that food is processed into different ingredients e.g. milk into butter. - Design and understand seasonality dish and know where and how a variety of ingredients are grown. 	<ul style="list-style-type: none"> -Can use the right tools to slice, mix, spread. -Can weigh ingredients to an appropriate level of accuracy. -Use tools and equipment e.g. cuttings, slicing, finish -Can follow their step-by-step recipe with a degree of accuracy. 	<ul style="list-style-type: none"> -Analyse a range of products e.g. supermarket canned soup -Consider the views of others and who they can improve their work e.g. taste and flavour -Evaluate whether it was fit for purpose -Investigate additional ingredients that may not have been available due to season
<p>Packaging – (Link with maths week) (Computing based task) Vocabulary Program, net, packaging, monitor, purpose</p>	<ul style="list-style-type: none"> -Use research to develop design criteria to inform innovative design. -Design products that are fit for purpose, aimed at particular individuals or groups -Can use given shapes on computer program to create design e.g. use a computer aided design program to create a net for packaging. 	<ul style="list-style-type: none"> ☑-Apply their understanding of how to strengthen, stiffen and reinforce more complex Structures e.g. material used for packaging -Apply their understanding of computing to program, monitor and control their products 	<ul style="list-style-type: none"> -Evaluate whether it is fit for purpose -Consider how they could have improved on their design -Discuss and describe how the product met the needs of pupils’ audience e.g. parents -Was it cost effective to make and sell? (maths week)
<p>Picture Frame (Wooden based task) Vocabulary Wood, card, reinforcement, strengthen, rigid, stiff, joining</p>	<ul style="list-style-type: none"> -Generate, develop, model and communicate their ideas through discussion, annotated -Design and make prototypes and patterned pieces for corners -Exploded diagrams e.g. corner joining -Use research and develop design criteria to inform the design of innovative -Can design products that are functional and designed for purpose 	<ul style="list-style-type: none"> -Can create structures and find ways to strengthening these e.g. using wood, hot glue-gun, card (appropriate materials) -Can measure and mark a square section and dowelling/wood to the nearest cm. -apply their understanding of how to strengthen, stiffen and reinforce more complex structures e.g. card corners, card back. 	<ul style="list-style-type: none"> -Investigate how other products strengthened their products -Evaluate ideas against their design e.g. did children have to change due to strengthening their products -Evaluate whether it was fit for purpose

<p>Forest school – link with Victorians (Wheel Spinner)</p> <p>Vocabulary Wood, drill, tight holes, loose holes, disc, vice and saw horses</p>	<p>-Generate, develop, their ideas through discussion regarding link with Victorian games -Research natural materials appropriate for use e.g. logs to slice and can we stand a drilled hole -Design and make prototypes with card</p>	<p>-Can use a hand drill to make tight holes and loose holes. -Can cut using a saw ensuring the diameter supports plan -Whittle the wood to shape it as well as sand the wood to smooth</p>	<p>- Investigate and analyse a range of existing products they could have used e.g. relevant to this day and age -Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work -Explain strengths and weaknesses in their final product. Think about natural resources available etc did children have everything they needed? -Discuss the level of difficulty when drilling the holes and whittling. Did they have more than one attempt?</p>
<p><u>Oak Class (Years 5 & 6)</u></p>			
<p>Using textiles to create applique Christmas cards (Links with Art)</p> <p>Key Vocabulary: casting off, applique, tying off, knot, thread, strand, cross stitch, back stitch, running stitch.</p>	<p>Research existing designs and use this to inform plan. Consider use of resources to help create design, for example, card templates. Can consider effective design choices when planning. Can create a prototype of their design.</p>	<p>Can use a glue gun with purpose and confidence. Can use applique to decorate by gluing and stitching. Can create own simple sewing pattern to use in designs. Can select the most appropriate way to join or secure materials within their design.</p>	<p>Whilst creating design, recognise the need to modify their design accordingly. Can evaluate existing products in relation to their purpose and audience. Can collect feedback from others to find out how to improve their product.</p>
<p>Creating and making a shaduf (Links with Science and History)</p> <p>Key Vocabulary: force, mechanism, lever, pulley, gears, fulcrum, effort</p>	<p>Research and understand what a shaduf was and how/why it was used. To use existing knowledge of mechanisms such as pulley, levers and gears. Design shaduf specifying materials and mechanisms they will need. Plan choice of materials and tools appropriately. Can design products that are innovative and appeal to individuals or groups.</p>	<p>Can build frameworks using a range of materials eg wood, card etc. Can select the most appropriate joint for their design. Use the most appropriate materials and tools. Can use more complex mechanical systems in products eg pulleys and linkages. Can select the most appropriate way to join or secure materials within their design and use</p>	<p>Whilst creating design, recognise the need to modify their design accordingly. Can evaluate existing products in relations to their purpose and audience. Can collect feedback from others to find out how to improve their product.</p>

	<p>Can create a prototype of their design. Can create a detailed diagram of their design.</p>	<p>techniques to strengthen and stabilise the structure.</p>	
<p>Design and create own baked product</p> <p>Key Vocabulary: scales, ingredients, knead, spatula, whisk, sieve, consistency, quantity</p>	<p>Allow children to try different types of baked products to distinguish flavours of sweet and savoury and explain own preferences. Research and compare ingredients in different recipes. Understand the processes involved in baking such as allowing dough to rise. Can plan and write own recipe using research to inform.</p>	<p>Can estimate and weigh amount of ingredients to an appropriate level of accuracy. Can use the right tools to slice, mix, spread, bake and knead.</p>	<p>Whilst creating design, recognise the need to modify their design accordingly. Can evaluate existing products in relations to their purpose and audience. Can collect feedback from others to find out how to improve their product.</p>
<p>Design and create own buzz game (Links with Science – Electricity)</p> <p>Key Vocabulary: Electrical circuit Components: cell, battery, wire, switch, buzzer, bulb, drill, hacksaw</p>	<p>Understand how a simple circuit works, including components such as bulb, buzzer, switch. Can explore existing products which include a simple electrical switch circuit. Can design products that are innovative and appeal to individuals or groups. Can create an exploded diagram of their design. Plan steps needed to make our product.</p>	<p>Apply scientific knowledge of electrical circuits to create a product for a specific audience and theme. Assemble a simple circuit to check all components work effectively. Identify, select and use a range of tools to help assemble the circuit and structure of game, for example, pliers, wire cutters, saws, sandpaper, drill, considering safety.</p>	<p>Whilst creating design, recognise the need to modify their design accordingly. Can evaluate existing products in relation to their purpose and audience. Can collect feedback from others to find out how to improve their product.</p>
<p>Design and create own bird box</p> <p>Key Vocabulary: accurately, framework, dowel, prototype, exploded diagram, internal,</p>	<p>Have an understanding of local wildlife to ascertain the sizing of the product. Understand the needs of local wildlife at different times of the year. Can design products that are innovative and appeal to individuals or groups. Make a detailed plan of their design including measurements and specifications. Can create an exploded diagram of their design.</p>	<p>Can build frameworks using a range of materials eg wood. Can use a glue gun with purpose and confidence. Can cut internal shapes. Can select the most appropriate joint for their design. Can use a screwdriver to secure materials with accuracy. Can cut accurately: strip wood, dowel and square section.</p>	<p>Whilst creating design, recognise the need to modify their design accordingly. Can evaluate existing products in relation to their purpose and audience. Can collect feedback from others to find out how to improve their product.</p>

<i>joint, screwdriver, drill,</i>	Can think about colours and design for camouflage purposes.	Can select the most appropriate way to join or secure materials within their design.	
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