

# Design & Technology Progression of Pitch (EYFS – KS2)

	<b>Autumn 1</b> What makes me, me?	<b>Autumn 2</b> How do we celebrate?	<b>Spring 1</b> Who can help us?	<b>Spring 2</b> Was it a happily ever after?	<b>Summer 1</b> What is lurking at the bottom of the garden?	<b>Summer 2</b> Where can we travel?
<b>Cutting and Joining skills</b>	<p>Cutting Skills: using one handed tools and equipment, make snips in paper/ paper straws with scissors</p> <p>Joining skills: join using glue and masking tape</p>	<p>Cutting Skills: Use scissors to cut along a line – holding paper with one hand and snipping with the other</p> <p>Joining skills: join using glue, and Sellotape</p>	<p>Cutting skills: use scissors to cut along an outline e.g., a self-drawn line</p> <p>Joining skills: join using tape and hole punching</p>	<p>Cutting skills: Use scissors to cut along an outline (cut an image out successfully).</p> <p>Joining skills: join different materials – problem solving to find solutions</p>	<p>Cutting skills: use scissors independently and successfully</p> <p>Joining skills: self- select tools to join and attach media</p>	
<b>Creating ( Ongoing throughout the year)</b>	<ul style="list-style-type: none"> <li>• Explore different materials freely, to develop their ideas about how to use them and what to make</li> <li>• Develop own ideas and then decide which materials to use to express them.</li> </ul>					
<b>ELG: ( Creating with materials : Expressive Arts and Design)</b>	<ul style="list-style-type: none"> <li>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>• Share their creations, explaining the process they have used.</li> <li>• Make use of props and materials when role playing characters in narratives and stories.</li> </ul>					

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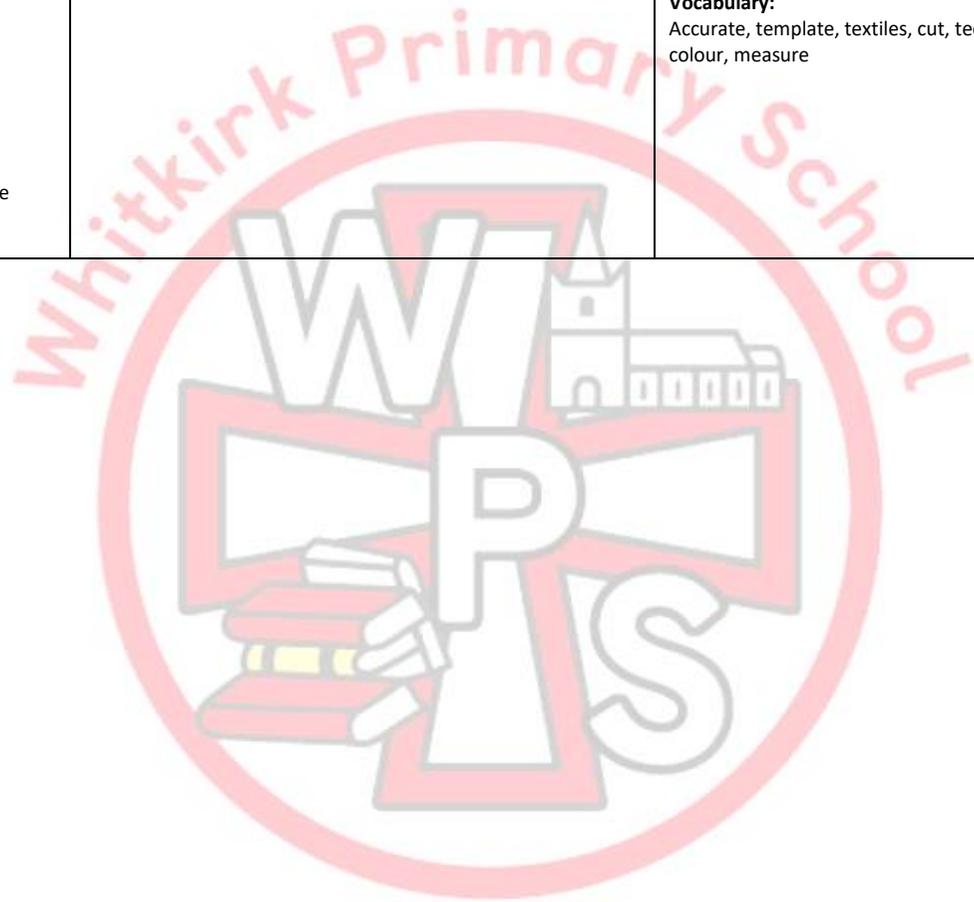
	<b>Cooking and Nutrition</b> <b>Am I a fruit or a vegetable?</b> 	<b>Structures</b> <b>Windmill</b> 	<b>Textiles</b> <b>Why do we wear poppies?</b> 	<b>Curriculum Day</b> <b>Mechanisms</b> <b>Moving picture</b> 
<b>Year 1</b>	<p><b>Product:</b> Fruit and Vegetable Smoothie  <b>Design brief: (purpose / user)</b>            Pupils at Whitkirk Primary School need a healthy and nutritious start to their day. Can you help by measuring, cutting, peeling or grating ingredients to create a snack in a safe and hygienic way?</p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know if a food is a fruit or a vegetable.</li> <li>• Know where and how fruits and vegetables grow.</li> <li>• Know how to measure using cups.</li> <li>• Know what the word hygienic means.</li> </ul> <p><b>Cutting and knife skills:</b>  <b>With close supervision</b></p> <ul style="list-style-type: none"> <li>• Bridge hold to cut harder foods, e.g. apple (serrated knife)</li> <li>• Claw grip to cut soft foods, e.g. tomato (serrated knife)</li> <li>• Peel soft veg, e.g. cucumber (peeler)</li> </ul> <p><b>Independently:</b></p> <ul style="list-style-type: none"> <li>• Drain away liquids</li> <li>• Lemon squeezer</li> </ul> <p><b>Vocabulary:</b>            Hygienic, measure, peel, grate</p>	<p><b>Product:</b> Model windmill  <b>Design brief: (purpose / user)</b>            Listen to the song: A mouse who lived in house in Amsterdam            The mouse wants a windmill to live in. Can you create a stable structure for him to live in?</p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know the importance of a clear design criteria</li> <li>• Know to include individual preferences and requirements in a design</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Making stable structures from card, tape and glue</li> <li>• Following instructions to cut and assemble the supporting structure of a windmill</li> <li>• Making functioning turbines and axles which are assembled into a main supporting structure</li> </ul> <p><b>Vocabulary:</b>            Design, requirement, assemble, supporting, cut, stable, join</p>	<p><b>Product:</b> Poppy/ Macmillan yellow flower  <b>Design brief: (purpose / user)</b>            This year due to Covid-19. Supermarkets haven't sold as many poppies. Can you use a template to cut out a poppy accurately?</p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know what a template is.</li> <li>• To know how to hold scissors safely.</li> <li>• To know what a poppy is and why we wear poppies.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Shape textiles using templates.</li> <li>• Demonstrate a range of cutting and shaping techniques</li> </ul> <p><b>Vocabulary:</b>            Accurate, template, textiles, cut, technique</p>	<p><b>Product:</b> Moving picture  <b>Design brief: (purpose / user)</b>            Paddington wants to visit the London attractions, but he can't due to Covid. Can you create a virtual tour by creating a scene of London and use a lever / slider mechanism for a virtual tour guide to show him around?</p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know what a lever is and how to create one using card.</li> <li>• To know what a slider is and how to create one using card.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Design products that have a clear purpose and an intended user.</li> <li>• Work towards creating products using levers and sliders</li> <li>• Explore how products have been created.</li> </ul> <p><b>Vocabulary:</b>            Mechanism, product, lever, slider</p>

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	<b>Cooking and Nutrition</b> <b>What is a balanced diet?</b> 	<b>Structures</b> <b>Baby bear's chair</b> 	<b>Textiles</b> <b>How to join materials?</b> 	<b>Curriculum Day</b> <b>Mechanisms</b> <b>Moving picture book</b> 
<b>Year 2</b>	<p><b>Product: A healthy soup</b>  <b>Design brief: (purpose / user)</b>            Kitchen staff at Whitkirk Primary School need ideas for a healthy and nutritious lunch. Can you help by assembling, measuring, cutting, peeling and cooking ingredients to make a soup?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know if a food is a fruit or a vegetable.</li> <li>• Know where and how fruits and vegetables grow.</li> <li>• Know how to measure or weigh using cups or scales.</li> <li>• Know what the word hygienic means.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know what a cooker is and how to be safe around hot food whilst cooking.</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Assemble or cook ingredients.</li> <li>• Slicing food safely using the bridge or claw grip.</li> </ul> <p><b>Cutting and knife skills:</b>  <b>With close supervision</b></p> <ul style="list-style-type: none"> <li>• Bridge hold to cut harder foods, e.g. potato (serrated knife)</li> <li>• Claw grip to cut soft foods, e.g. tomato (serrated knife)</li> <li>• Cut food into evenly sized largish pieces.</li> <li>• Use a hob to cook ingredients.</li> </ul>	<p><b>Product: Baby Bear's Chair</b>  <b>Design brief: (purpose / user)</b>            Baby bears chair is broken because Goldilocks' has sat on it. Can you design a new chair for baby bear using joints and card?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know the importance of a clear design criteria</li> <li>• Know to include individual preferences and requirements in a design</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know what a joint is and how they are used on existing products.</li> <li>• To know how to create joints using card.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Generating and communicating ideas using sketching and modelling</li> <li>• Learning about different types of structures, found in the natural world and in everyday objects</li> <li>• Making a structure according to design criteria</li> <li>• Creating joints and structures from paper / card and tape</li> </ul> <p><b>Vocabulary:</b>            Design, requirement, assemble, supporting, cut, stable, join, joint</p>	<p><b>Product: Blanket</b>  <b>Design brief: (purpose / user)</b>            Book Hook- Shh don't wake the Royal Baby?            The Royal baby cannot get to sleep. It keeps wailing and wailing. Can you use a comforting soft textured material to create a blanket for the Royal baby? Can you select a calming colour for your blanket? Can you cut you patches to the nearest cm and join using running stitch?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know how to hold scissors safely.</li> <li>• To know how to cut material safely.</li> </ul> <p><b>New Knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know how to measure to the nearest cm</li> <li>• To know what the running stitch is</li> <li>• To know how to join textiles together using the running stitch</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Cut materials safely using tools provided.</li> <li>• Measure and mark out to the nearest centimetre.</li> <li>• Join textiles using running stitch. Colour and decorate textiles using a number of</li> </ul>	<p><b>Product: Moving picture book</b>  <b>Design brief: (purpose / user)</b>            Reception are trying to find engaging new books for their children. Can you create a product using leavers, wheels and winding mechanisms to inspire a love for reading in reception?            Can you create a simple market research survey to identify their likes and dislikes?</p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know what a lever is and how to create one using card.</li> <li>• To know what a slider is and how to create one using card.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know what a wheel is and how to create one using card.</li> <li>• To know how to create a simple survey.</li> </ul> <p><b>Skills:</b></p>

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<p><b>With moderate supervision</b></p> <ul style="list-style-type: none"> <li>• Peel soft veg, e.g. cucumber (peeler)</li> <li>• Melon baller to core an apple.</li> <li>• Grate soft food, e.g. cheese</li> </ul> <p><b>Independently</b></p> <ul style="list-style-type: none"> <li>• Mash cooked food.</li> <li>• Drain away liquids using a sieve, e.g. tuna</li> <li>• Lemon squeezer</li> </ul> <p><b>Vocabulary:</b> Hygienic, measure, peel, grate, hob, assemble</p>		<p>techniques (such as dyeing, adding sequins or printing).</p> <p><b>Vocabulary:</b> Accurate, template, textiles, cut, technique, dye, colour, measure</p>	<p>Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs.</p> <p>Create products using levers and wheels.</p> <p><b>Vocabulary:</b> Mechanism, product, lever, slider, wheel, survey</p>
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	<p><b>Cooking and Nutrition</b> How do we control temperature?</p> 	<p><b>Structures</b> Bird box</p> 	<p><b>Textiles</b> What is a seam?</p> 	<p><b>Curriculum Day</b> Mechanisms Moving Car</p> 
<p><b>LKS2</b> <b>Cycle</b> <b>1</b></p>	<p><b>Product:</b> A sweet treat (cookie/muffin/ cake) <b>Design brief: (purpose / user)</b></p> <p>Miss Quarmby is currently working long hours and deserve a treat to help boost morale. Can you help by preparing and cooking ingredients hygienically, using appropriate utensils and controlling the temperature of the oven?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>Knowing how to prepare themselves and a workspace to cook safely in.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>Know how to control temperature on a hob.</li> <li>Know how to measure temperature.</li> <li>Know what temperature is measured in.</li> <li>Know how to measure accurately to the nearest gram.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Prepare ingredients hygienically using appropriate utensils. Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</li> </ul> <p><b>Vocabulary:</b> Prepare, cook, hygienically, temperature, control, measure, utensils</p>	<p><b>Product:</b> Bird House <b>Design brief: (purpose / user)</b></p> <p>We want to attract more songbirds to our school gardens. Can you begin by partaking in a fact-finding mission to find out about the best birdboxes in the market, drawing a range of information from current products to create your own product?</p> <p>Can you design a bird box to withstand strong winds?</p> <p>Can you design a net on Purple Mash?</p> <p>Can you carefully select materials which will strengthen the product, ensuring you refine your work and technique and continually evaluate your design?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what a net is and how they are used to create 3D products.</li> <li>To know how to use Purple Mash to create nets.</li> <li>To name products that are made with a net e.g cereal box.</li> <li>To know how to saw wood</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to strength materials.</li> <li>To name previous designers of bird houses.</li> <li>To know how to make a complexed net on Purple Mash.</li> </ul>	<p><b>Product:</b> Decoration <b>Design brief: (purpose / user)</b></p> <p>To help raise funds for Whitkirk Primary School, can you cut materials accurately, safely and join textiles with a running stitch to create a decoration to sell? You need to understand the need for a seam allowance and measure out to the nearest mm.</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to measure to the nearest cm</li> <li>To know what the running stitch is</li> <li>To know how to join textiles together using the running stitch</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what a seam is</li> <li>To know how to measure to the nearest mm.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Understand the need for a seam allowance. Select the most appropriate techniques to decorate textiles.</li> <li>Measure and mark out to the nearest millimetre. Apply</li> </ul>	<p><b>Product:</b> Moving toy <b>Design brief: (purpose / user)</b></p> <p>Toy companies are trying to make more money by designing an innovative new car toy. Can you use your scientific knowledge to design and make a moving car with an appropriate mechanism, such as leavers, winding mechanisms, pulleys or gears?</p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to cut materials safely using a saw.</li> <li>To know how a pulley works and how to create a pulley mechanism.</li> <li>To understand how forces transfer to create movement.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what an axel is.</li> <li>To know how to create a winding mechanism</li> <li>To know how to create 3D models on the screen using Purple Mash</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Improve upon existing designs, giving reasons for choices. Disassemble</li> </ul>

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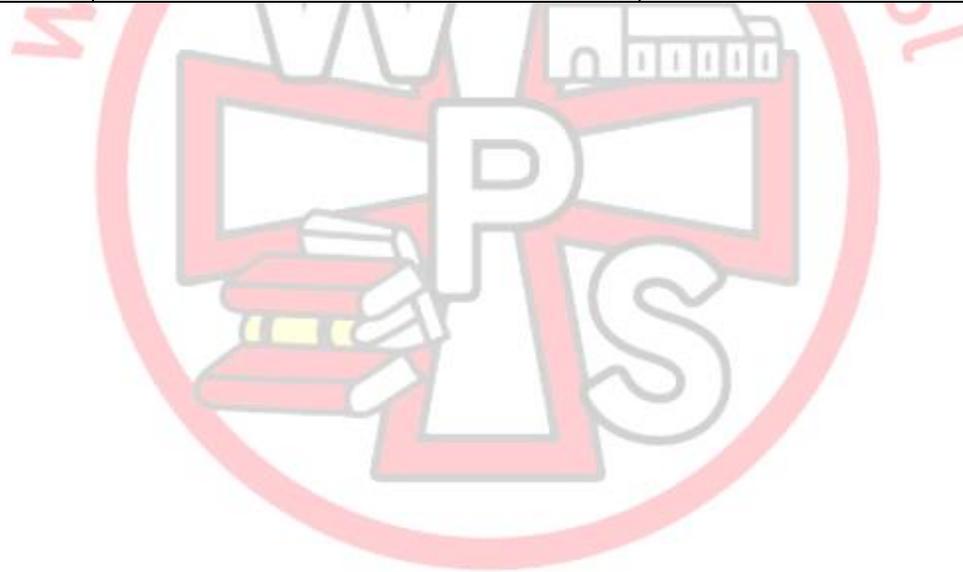
		<ul style="list-style-type: none"> <li>To know how to join wood together using wood glue and a vice.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Strengthen materials using suitable techniques.</li> <li>Make products by working efficiently (such as by carefully selecting materials). Refine work and techniques as work progresses, continually evaluating the product design. Use software to design and represent product designs.</li> <li>Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</li> </ul> <p><b>Vocabulary:</b> Net, design, product, vice, saw, refine, technique, designer, software, strengthen</p>	<p>appropriate cutting and shaping techniques.</p> <p><b>Vocabulary:</b> Accurate, template, textiles, cut, technique, measure, blanket stitch, Seam, millimetre</p>	<p>products to understand how they work</p> <ul style="list-style-type: none"> <li>Cut materials accurately and safely by selecting appropriate tools. Select appropriate joining techniques.</li> <li>Begin to use scientific knowledge of the transference of forces to choose appropriate winding mechanisms for a product</li> <li>To design using purple mash software designed for this purpose.</li> <li>Choose suitable techniques to construct products or to repair items.</li> </ul> <p><b>Vocabulary:</b> Mechanism, product, survey, winding mechanism, axel, forces</p>
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	<p><b>Cooking and Nutrition</b> <b>How do we measure accurately?</b></p> 	<p><b>Structures</b> <b>Desk tidy</b></p> 	<p><b>Textiles</b> <b>Decoration</b> <b>How can we raise money for Whitkirk Primary School?</b></p> 	<p><b>Curriculum Day</b> <b>Mechanisms</b> <b>Moving toy</b></p> 
<p><b>LKS2</b> <b>Cycle 2</b></p>	<p><b>Product: A sweet treat (cookie/muffin/ cake)</b> <b>Design brief: (purpose / user)</b> Miss Tomlinson and Miss Dougall are currently working long hours and deserve a treat to help boost morale. Can you help by measuring to the nearest gram and following a recipe to a great scrumptious treat? <b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>Knowing how to prepare themselves and a workspace to cook safely in</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>Know how to measure accurately to the nearest gram</li> <li>Know what ingredients make a sweet treat, considering the taste, texture, smell and appearance of the dish</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Following the instructions within a recipe</li> <li>Measure ingredients to the nearest gram accurately.</li> </ul> <p><b>Vocabulary:</b> Hygienic, measure, peel, grate, hob, assemble, control, utensils, whisk</p>	<p><b>Product: Desk Tidy</b> <b>Design brief: (purpose / user)</b> Miss Dougal / Miss Tomlinson’s desk is extremely untidy. She needs a product to keep it organised. Can you disassemble a variety of different boxes to understand how they work? Can you design the net of your product using Purple Mash? <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>Know the importance of a clear design criteria</li> <li>Know to include individual preferences and requirements in a design</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what a net is and how they are used to create 3D products.</li> <li>To know how to use Purple Mash to create nets.</li> <li>To name products that are made with a net e.g cereal box.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work.</li> <li>Choose suitable techniques to construct products or to repair items.</li> </ul> <p><b>Vocabulary:</b> Net, design, product, construct, repair</p>	<p><b>Product: Decoration</b> <b>Design brief: (purpose / user)</b> To help raise funds for Whitkirk Primary School, can you cut materials accurately, safely and join textiles with blanket stitch to create a decoration to sell? <b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to measure to the nearest cm</li> <li>To know what the running stitch is</li> <li>To know how to join textiles together using the running stitch</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what the blanket stitch is</li> <li>To know how to join textiles together using the blanket stitch</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Cut materials safely using tools provided.</li> <li>Measure and mark out to the nearest centimetre.</li> <li>Join textiles using blanket stitch.</li> </ul> <p><b>Vocabulary:</b> Accurate, template, textiles, cut, technique, measure, blanket stitch</p>	<p><b>Product: Moving toy</b> <b>Design brief: (purpose / user)</b> Toy companies are trying to make more money at Easter time as they make all of their profit at Christmas. Can you use your scientific knowledge to design and make an Easter chick toy with an appropriate mechanism, such as leavers, winding mechanisms, pulleys or gears? <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what a lever is and how to create one using card.</li> <li>To know what a slider is and how to create one using card.</li> <li>To know what a wheel is and how to create one using card.</li> <li>To know how to create a simple survey.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to cut materials safely using a saw.</li> <li>To know how a pulley works and how to create a pulley mechanism.</li> <li>To know how to create 2D design the screen using Purple Mash</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work</li> </ul>

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				<ul style="list-style-type: none"><li>• Cut materials accurately and safely by selecting appropriate tools. Select appropriate joining techniques.</li><li>• Begin to use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers and pulleys)</li><li>• To design using purple mash software designed for this purpose.</li><li>• Choose suitable techniques to construct products or to repair items.</li></ul> <p><b>Vocabulary:</b> Mechanism, product, pulley, joining, repair, forces, transference survey,</p>
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# Design & Technology Progression of Pitch (EYFS – KS2)

	<b>Cooking and Nutrition</b> <b>How do we refine a recipe?</b> 	<b>Structures</b> <b>Photo frame</b> 	<b>Textiles</b> <b>Stuffed Toys</b> 	<b>Curriculum Day</b> <b>Mechanisms</b> <b>Installation</b> 
<b>Year 5</b>	<p><b>Product:</b> A sweet treat (cookie/muffin/cake)  <b>Design brief: (purpose / user)</b></p> <p>There are many different preferences when it comes to taste here at Whitkirk Primary school. Can you help the kitchen staff design a new desert that will be popular? Can you follow a basic recipe and refine the recipe through taste? Can you create a market research survey to discover the most popular flavour? Can you use your research to create your own recipe including ingredients, method, cooking times and temperature?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>Knowing how to prepare themselves and a workspace to cook safely in</li> <li>Know how to measure accurately to the nearest gram</li> <li>Know what ingredients make a sweet treat, considering the taste, texture, smell and appearance of the dish <ul style="list-style-type: none"> <li>Know how to control temperature on a hob</li> <li>Know how to control temperature</li> <li>Know what temperature is measured in</li> </ul> </li> </ul> <p><b>New knowledge:</b></p>	<p><b>Product:</b> Photo frame (Christmas)  <b>Design brief: (purpose / user)</b></p> <p>Your teachers will be taking class photos for Christmas. To make this extra special for your parents and carers, can you design, make a frame to treasure this memory. Can you create an innovative design on tinker cad that improves on existing design?</p> <p>Can you use a range of practical skills including cutting, filing, sanding, screwing, drilling and nailing?</p> <p>Can you ensure you product has a high-quality finish by using your artistic skills where appropriate?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what a net is and how they are used to create 3D products.</li> <li>To know how to use Purple Mash to create nets.</li> <li>To know how to saw wood.</li> <li>To know how to strength materials.</li> <li>To name previous designers of bird houses.</li> <li>To know how to make a complexed net on Purple Mash.</li> <li>To know how to join wood together using wood glue and a vice.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to safely use a drill.</li> </ul>	<p><b>Product:</b> Decoration  <b>Design brief: (purpose / user)</b></p> <p>The reception children have taken all their soft toys outside and they have been ruined. Can you design a questionnaire to find out what properties they prefer in a soft toy? Can you use your understanding of the qualities of materials to select suitable materials to cut and shape? Can you decorate using suitable, visual and tactile effects?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to measure to the nearest cm</li> <li>To know what the running stitch is</li> <li>To know how to join textiles together using the running stitch</li> <li>To know what a seam is</li> <li>To know how to measure to the nearest mm.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to create a questionnaire.</li> <li>To know how to sew a button to fabric.</li> <li>To know which materials are suitable for soft toys and which materials are not.</li> </ul> <p><b>Skills:</b></p> <p>Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles.</p> <p><b>Vocabulary:</b></p> <p>Accurate, template, textiles, cut, technique, measure, blanket stitch, Seam, millimetre, suitability, tactile, questionnaire</p>	<p><b>Product:</b> Installation  <b>Design brief: (purpose / user)</b></p> <p>Magna (A science museum) want to create an installation for a new interactive display. Can you create an installation for Magna about space exploration, including a rotary motion system using linear cams? Can you design your model on Purple Mash and create an innovative design that improves on existing designs?</p> <p><b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>To know how to cut materials safely using a saw.</li> <li>To know how a pulley works and how to create a pulley mechanism.</li> <li>To understand how forces transfer to create movement.</li> <li>To know what an axel is.</li> <li>To know how to create a winding mechanism</li> <li>To know how to create 3D models on the screen using Purple Mash</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>To know what cam is and how they work.</li> </ul>

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	<ul style="list-style-type: none"> <li>To know what market research is.</li> <li>To know how to create a survey.</li> <li>To name different flavours that can be used to refine a recipe (chocolate, Carmel, strawberry, vanilla)</li> <li>To know how to use a timer whilst cooking.</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>Demonstrate a range of baking and cooking techniques. Create and refine recipes, including ingredients, methods, cooking times and temperatures</li> </ul> <p><b>Vocabulary:</b> Prepare, cook, hygienically, temperature, refine, control, measure, temperature</p>	<ul style="list-style-type: none"> <li>To know how to use a hammer to nail into wood.</li> <li>To know how to sand wood to give it a high-quality finish.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Begin to develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</li> <li>Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Ensure products have a high-quality finish, using art skills where appropriate.</li> <li>Create innovative designs that improve upon existing products.</li> </ul> <p><b>Vocabulary:</b> Net, design, product, vice, saw, refine, technique, designer, software, strengthen, drill, nail, file, sand</p>		<ul style="list-style-type: none"> <li>To know how to convert rotary motion into linear using a cam.</li> <li>To know how to create 3D moving model using Purple Mash.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>Convert rotary motion to linear using cams.</li> <li>Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Ensure products have a high-quality finish, using art skills where appropriate.</li> <li>Create innovative designs that improve upon existing products.</li> </ul> <p><b>Vocabulary:</b> Mechanism, product, axel, forces, cams, linear, rotary, innovative</p>
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	<p><b>Cooking and Nutrition</b> What are the advantages and disadvantages of microorganisms?</p>	<p><b>Structures</b> Bridge</p>	<p><b>Textiles</b> How can we remember the friends we have made at Whitkirk?</p>	<p><b>Curriculum Day</b> Mechanisms Fairground ride</p>
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<p><b>Year 6</b></p>	<p><b>Product: Bread</b> <b>Design brief: (purpose / user)</b> Kitchen staff are dissatisfied with the current selection of bread provided by the canteen. Due to the strict protocols that have to be followed around food. You must ensure correct storage, hygienic handling of ingredients paying particular attention to the benefits and disadvantages of microorganisms. Can you measure accurately and calculate ratios of ingredients to scale up or down from a recipe? <b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>• Knowing how to prepare themselves and a workspace to cook safely in</li> <li>• Know how to measure accurately to the nearest gram</li> <li>• Know what ingredients make bread considering the taste, texture, smell and appearance of the dish <ul style="list-style-type: none"> <li>• Know how to control temperature on an oven</li> <li>• Know how to control temperature</li> <li>• Know what temperature is measured in</li> </ul> </li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know what a microorganism is</li> <li>• To know how to handle microorganisms safely</li> <li>• To know how to calculate a ratio</li> </ul> <p><b>Skills:</b> Understand the importance of correct storage and handling of ingredients (using knowledge of</p>	<p><b>Product: Bridge</b> <b>Design brief: (purpose / user)</b> Show images before/after the 1906 San Francisco Earthquake. Can you design a prototype by cutting, measuring, sanding and joining materials accurately that will withstand force? <b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know how to saw wood</li> <li>• To know how to strength materials.</li> <li>• To know how to join wood together using wood glue and a vice.</li> <li>• To know how to safely use a drill.</li> <li>• To know how to use a hammer to nail into wood.</li> <li>• To know how to sand wood to give it a high-quality finish.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know what a prototype is and how they are used.</li> <li>• To that the San Francisco Earthquake happened in 1906.</li> <li>• To know how to draw a cross sectional diagram.</li> </ul> <p><b>Skills:.</b></p> <ul style="list-style-type: none"> <li>• Develop a range of practical skills to create products (such as cutting, drilling</li> </ul>	<p><b>Product: Cushion</b> <b>Design brief: (purpose / user)</b> Can you create a leavers cushion to honour your time at Whitkirk Primary School with an embroider section? You must leave a seam allowance and join textiles with a combination of stitching techniques for decoration and functionality. <b>Prior knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know how to measure to the nearest cm</li> <li>• To know what the running stitch and blanket is</li> <li>• To know how to join textiles together using the running stitch</li> <li>• To know what a seam is</li> <li>• To know how to measure to the nearest mm.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know how to embroider fabric.</li> <li>• To know how to back stitch.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</li> </ul>	<p><b>Product: Fairground prototype</b> <b>Design brief: (purpose / user)</b> This year Leeds Christmas Markets were cancelled to the financial crisis. Next year they want to come back with new and exhilarating ideas. Can you take inspiration from designers throughout history (first merry go round) to suggest improvements to user’s experience? Can you use a combination of electronics and mechanics to design on purple mash and create a new an innovative fairground attraction? <b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know how to cut materials safely using a saw.</li> <li>• To know how a pulley works and how to create a pulley mechanism.</li> <li>• To understand how forces transfer to create movement.</li> <li>• To know what an axel is.</li> <li>• To know how to create a winding mechanism</li> <li>• To know what cam is and how they work.</li> <li>• To know how to convert rotary motion into linear using a cam.</li> <li>• To know how to create 3D moving model using Purple Mash.</li> </ul> <p><b>New knowledge:</b></p> <ul style="list-style-type: none"> <li>• To know how to write code to control and monitor a product.</li> <li>• To know how to draw a cross sectional diagram.</li> </ul>

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	<p>microorganisms). Measure accurately and calculate ratios of ingredients to scale up or down from a recipe</p> <p><b>Vocabulary:</b> Prepare, cook, hygienically, temperature, refine, control, measure, temperature, protocol, microorganism, ratio</p>	<p>and screwing, nailing, gluing, filling and sanding).</p> <ul style="list-style-type: none"> <li>• Make products through stages of prototypes, making continual refinements. Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.</li> <li>• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. Evaluate the design of products to suggest improvements to the user experience.</li> </ul> <p><b>Vocabulary:</b> Net, design, product, vice, saw, refine, technique, designer, software, strengthen, drill, nail, file, sand, cross sectional diagram</p>	<p><b>Vocabulary:</b> Accurate, template, textiles, cut, technique, measure, blanket stitch, Seam, millimetre, suitability, tactile, employ, combination, techniques, decoration, functionality</p>	<ul style="list-style-type: none"> <li>• To be able to name inspirational designers of rides such as Marcus C Illions 1926</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Write code to control and monitor models or products.</li> <li>• Use innovative combinations of electronics (or computing) and mechanics in product designs.</li> <li>• Make products through stages of prototypes, making continual refinements. Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.</li> <li>• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. Evaluate the design of products to suggest improvements to the user experience</li> </ul> <p><b>Vocabulary:</b> Mechanism, product, axel, forces, cams, linear, rotary, innovative, code, prototype, refinements, cross sectional diagrams</p>
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