

Design and Technology Curriculum Milestone 2

Year 3

Area	Key Vocabulary	Sticky Knowledge	Essential Skills and knowledge to be covered
Food: Design chocolates Trade and Transport	Chocolate Assemble Weigh Ingredients Melt Truffles Coconut Dusting Coating Bain marie Greaseproof paper	<ul style="list-style-type: none"> Before cooking, we need to make sure our hands are clean and the work area is too. Chocolate is made from the cocoa beans which are grown in tropical countries. To make truffles, we need to melt chocolate over a saucepan of boiling water called a bain marie. Cream and butter are added to chocolate to make the truffles. They have to be chilled before they can be shaped. 	<ul style="list-style-type: none"> Design and make chocolates Prepare ingredients hygienically using appropriate utensils. Assemble the ingredients for their chocolates. Use knives when cutting safely. Control the temperature of the hob as needed. Follow a recipe. Measure ingredients with scales to the nearest gram.
Construction: Create packaging suitable for different products. Trade and Transport	Nets Layers Compartments Tabs Interior Flavour score	<ul style="list-style-type: none"> A net is a 2D plan of a 3D shape. I can use different nets to make a box depending on which 3D shape I want. To make sure the box fits together, I need to add tabs so they connect. Compartments or layers divide the interior up for different truffle flavours. Scoring is where a sharp object is used to make an indent in the card so it folds more easily. 	<ul style="list-style-type: none"> Design and Make a package for the chocolates with a closable lid. Measure and mark out to the nearest millimetre. Score card in order to shape it. Slot pieces of card together to make compartments. Disassemble products to see how they are made.
Construction and mechanics To make a pinball game	Levers Pulleys Forces Load	<ul style="list-style-type: none"> A lever is a simple machine which helps us to project objects. 	<ul style="list-style-type: none"> To make a pinball game using levers and pulleys Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys).

Makey Makey	Effort Project Incline gravity	<ul style="list-style-type: none"> The object you are lifting is called the load, and the force you apply to the arm to make the object move is called the effort. A pulley is a simple machine that makes it easier to lift or move a heavy object. It includes at least one wheel and a length of rope. In the pinball game, because the box is inclined (sloping), gravity slows the ball and then begins to speed it back down towards the flippers again. 	<ul style="list-style-type: none"> Apply our knowledge of forces to make the pinball machine work.
Textiles: Make felt Christmas decorations Christmas decorations	Seam Felt Stitching Running stitch Blanket Stitch Template	<ul style="list-style-type: none"> Running stitch is used to join two pieces of a fabric together. To fill out a design, you stitch most of the way around inside out, then turn it the right way around, fill it and sew the last part together. A seam allowance is the area between the fabric edge and the stitching. 	<ul style="list-style-type: none"> Make felt Christmas decorations Join textiles with appropriate stitching. Understand the need for seam allowance.
Computing Makey Makey	Equipment Makey Makey interface Control Electricity Device Wires Crocodile clips	<ul style="list-style-type: none"> The Makey Makey is a piece of equipment that allows me to control computers. I can connect everyday objects to make computer keyboards. Only materials, which are conductors, will work but these can be only slightly conductive to work. Some materials that will work include bananas, play doh, marshmallows and water. 	<p>Making a Banana Keyboard</p> <ul style="list-style-type: none"> Control and monitor models using software designed for this purpose. Learn how to control a computer using everyday objects. Use conductors to make a keyboard work.

Year 4			
Food Eurovision	Crepe Pancake Toss Frying pan	<ul style="list-style-type: none"> • Crepes are a French dessert. • They are similar to pancakes but thinner. • They are made using flour, milk and eggs mixed together then fried in a frying pan. • They can be tossed to cook on both sides. 	<ul style="list-style-type: none"> • Make crepes • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).
Structure and materials Using 3D shapes to make buildings and a tepee Buildings	Millimetres Saw Vertex apex Stable Base Angles Dowling Adjacent Isosceles Tripod hacksaw	<ul style="list-style-type: none"> • A saw is used to cut wood. • The angles at the vertex need to be equal to create a stable base. • Using three dowling rods make the structure more secure. • Each pair of adjacent dowling rods makes an isosceles triangle. • The tepee is made of three similar isosceles triangles. • It is more difficult to make a structure with a wide base topple over; the wider the base the more stable it is. • Triangles are good at making structures more stable. 	<ul style="list-style-type: none"> • Design and Make a tepee • Measure and mark out to within a mm of accuracy. • Select the most appropriate materials to make a stable structure. • Cut using saws accurately and safely. • Apply appropriate cutting and shaping techniques • Use string to hold rods together. • Strengthen materials using suitable techniques.
Electricals and Electronics Mechanics Art Bots	Prototype Criteria Battery Generate Bulb Motor Intruder alarm	<ul style="list-style-type: none"> • Potatoes and other vegetables generate electricity so can be used to power an electrical circuit without a battery. • A potato that is boiled for 8 minutes can make a battery that produces ten times more power than a raw one. • An art bot is an electronically operated toy which we can guide to make pictures. 	<ul style="list-style-type: none"> • Discovering how potatoes can make electricity. Make an Art Bot. • Create series and parallel circuits. • Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas.

Milestone 2 DT

		<ul style="list-style-type: none">• Circuits can be used to make objects move, light up and make noises.• An intruder alarm senses movement and sets off an alarm to raise people's awareness.• A series circuit comprises a path along which a current flows.• A parallel circuit comprises branches so that the current divides and only part of it flows through any branch.	<ul style="list-style-type: none">• Evaluate their own products and ideas against criteria and user needs, as they design and make.• 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.• Disassemble products to see how they work and put them back together.• Identify some of the great designers.
--	--	--	--

Design Technology Project Skills		
Milestone 2		
Master practical skills	Design, make, evaluate and improve	Inspiration from design in history
<p>Food</p> <ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). <p>Materials</p> <ul style="list-style-type: none"> • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques. <p>Textiles</p> <ul style="list-style-type: none"> • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles. <p>Electricals and electronics</p> <ul style="list-style-type: none"> • Create series and parallel circuits <p>Computing</p> <ul style="list-style-type: none"> • Control and monitor models using software designed for this purpose <p>Construction</p> <ul style="list-style-type: none"> • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. <p>Mechanics</p> <ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). 	<ul style="list-style-type: none"> • Design with purpose by identifying opportunities to design. • 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. 	<ul style="list-style-type: none"> • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work.