

Banister Primary School
DT Progression
EYFS, Key Stage 1 & 2

EYFS						
	Autumn 1 Junk Modelling	Autumn 2 Hibernation Boxes	Spring 1 Boats	Spring 2 Soup	Summer 2 Bookmarks	End point
Vocabulary	Join Stick Cut Bend Slot Scissors Measure Materials Fix	Hibernate Season Autumn Food Fat Energy Warmth Rest Cardboard Design Model	Waterproof Absorb Prediction Variable Experiment Investigation Float Sink Junk	Fruit Vegetables Safety Knife Blade Tool Edge Handle Chop Slice Cut Saucepan Blender Chopping board Hob Boil Blend Mix Packaging Recyclable Metal Plastic Reusable	Thread Weave Pattern Sew Sewing needle Embroider Design Evaluate	Children are introduced to 3 strands of the DT curriculum (Structures, Cooking and Nutrition and Textiles) Structures: Main Skill – Children can safely use and explore a variety of materials and tools. Cooking and Nutrition: Main Skill – Children can chop pre-boiled vegetables with support Textiles: Main Skill – Children can practice threading and weaving

Design	<p>Making verbal plans and material choices.</p> <p>Developing a junk model.</p>	<p>Draw a hibernation box design.</p>	<p>Designing a junk model boat.</p> <p>Using knowledge from exploration to inform design.</p>	<p>Designing a soup recipe as a class.</p> <p>Designing soup packaging.</p>	<p>Discussing what a good design needs.</p> <p>Designing a simple pattern with paper.</p> <p>Designing a bookmark.</p> <p>Choosing from available materials.</p>	<p>Children at this stage will also be developing ELG in:</p> <p>Speaking</p> <p>Managing self</p> <p>The Natural World</p> <p>Creating with Materials</p>
Make	<p>Improving fine motor/scissor skills with a variety of materials.</p> <p>Joining materials in a variety of ways (temporary and permanent).</p> <p>Joining different materials together.</p> <p>Describing their junk model, and how they intend to put it together.</p>	<p>Gather natural resources and create a box.</p>	<p>Making a boat that floats and is waterproof, considering material choices.</p>	<p>Chopping plasticine safely.</p> <p>Chopping vegetables with support.</p>	<p>Developing fine motor/cutting skills with scissors.</p> <p>Exploring fine motor/threading and weaving (under, over technique) with a variety of materials.</p> <p>Using a prepared needle and wool to practise threading.</p>	

<p>Evaluate</p>	<p>Giving a verbal evaluation of their own and others' junk models with adult support.</p> <p>Checking to see if their model matches their plan.</p> <p>Considering what they would do differently if they were to do it again.</p> <p>Describing their favourite and least favourite part of their model.</p>	<p>Verbally evaluate whether the box is warm and dry enough for an animal.</p>	<p>Making predictions about, and evaluating different materials to see if they are waterproof.</p> <p>Making predictions about, and evaluating existing boats to see which floats best.</p> <p>Testing their design and reflecting on what could have been done differently.</p> <p>Investigating the how the shapes and structure of a boat affect the way it moves.</p>	<p>Tasting the soup and giving opinions.</p> <p>Describing some of the following when tasting food: look, feel, smell and taste.</p> <p>Choosing their favourite packaging design and explaining why.</p>	<p>Reflecting on a finished product and comparing to their design.</p>	
<p>Technical Knowledge</p>	<p>To know there are a range to different materials that can be used to make a model and that they are all slightly different.</p> <p>Making simple suggestions to fix their junk model.</p>	<p>To know some animals hibernate during the colder months of the year.</p> <p>To know that some materials are better for containing warmth.</p>	<p>To know that 'waterproof' materials are those which do not absorb water.</p> <p>To know that some objects float and others sink.</p>	<p>To know that soup is ingredients (usually vegetables and liquid) blended together.</p> <p>To know that vegetables are grown.</p>	<p>To know that a design is a way of planning our idea before we start.</p> <p>To know that threading is putting one material through an object.</p>	

			<p>To know the different parts of a boat.</p>	<p>To recognise and name some common vegetables.</p> <p>To know that different vegetables taste different.</p> <p>To know that eating vegetables is good for us.</p> <p>To discuss why different packages might be used for different foods.</p>		
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Year 1

	Autumn 1 Fruit and Vegetables	Spring 1 Pouches	Summer 1 Moving Story Book	End point
Vocabulary	Blender Carton Fruit Healthy Ingredients Peel Peeler Recipe Slice (verb) Smoothie Vegetable	Accurate Fabric Knot Pouch Running-stitch Sew Shape Stencil Template Thimble	Assemble Design Design Criteria Evaluation Mechanism Model Sliders Stencil Target audience Template Test	Children are developing skills in 2 strands of the DT curriculum (Cooking and Nutrition and Textiles) and are introduced to a new strand (Mechanisms) Cooking and Nutrition: Main Skill – Children can chop fruit and vegetables independently
Design	Designing smoothie carton packaging by-hand or on ICT software.	Designing a pouch.	Explaining how to adapt mechanisms, using bridges or guides to control the movement. Designing a moving story book for a given audience.	Textiles: Main Skill – Children can independently demonstrate a Running Stitch.
Make	Chopping fruit and vegetables safely to make a smoothie.	Selecting and cutting fabrics for sewing. Decorating a pouch using fabric glue or running stitch. Threading a needle. Sewing running stitch, with evenly spaced, neat, even stitches to join fabric.	Following a design to create moving models that use levers and sliders.	Mechanisms: Main Skill – Children can understand and use Levers (Basic) and Sliders.

		Neatly pinning and cutting fabric using a template.		
Evaluate	<p>Tasting and evaluating different food combinations.</p> <p>Describing appearance, smell and taste.</p> <p>Suggesting information to be included on packaging.</p>	<p>Troubleshooting scenarios posed by teacher.</p> <p>Evaluating the quality of the stitching on others' work.</p> <p>Discussing as a class, the success of their stitching against the success criteria.</p> <p>Identifying aspects of their peers' work that they particularly like and why.</p>	<p>Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.</p> <p>Reviewing the success of a product by testing it with its intended audience.</p>	
Technical Knowledge	<p>Understanding the difference between fruits and vegetables.</p> <p>To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber).</p> <p>To know that a blender is a machine which mixes ingredients together into a smooth liquid.</p> <p>To know that a fruit has seeds and a vegetable does not.</p> <p>To know that fruits grow on trees or vines.</p>	<p>To know that sewing is a method of joining fabric.</p> <p>To know that different stitches can be used when sewing.</p> <p>To understand the importance of tying a knot after sewing the final stitch.</p> <p>To know that a thimble can be used to protect my fingers when sewing.</p>	<p>To know that a mechanism is the parts of an object that move together.</p> <p>To know that a slider mechanism moves an object from side to side.</p> <p>To know that a slider mechanism has a slider, slots, guides and an object.</p> <p>To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.</p> <p>To know that in design and technology we call a plan a 'design'.</p>	

	<p>To know that vegetables can grow either above or below ground.</p> <p>To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).</p>			
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Year 2

	Autumn 2 Baby Bear's Chair	Spring 2 Wheels and Axles	Summer 2 A Balanced Diet	End point
Vocabulary	Function Man-made Mould Natural Stable Stiff Strong Structure Test Weak	Accurate Axle Design Fix Mechanic Mechanism Axle holder Chassis Model Test Wheel	Alternative Diet Balanced diet Evaluation Expensive Healthy Ingredients Nutrients Packaging Refrigerator Sugar	Children are developing skills in 3 strands of the DT curriculum (Structures, Mechanisms and Cooking and Nutrition and Textiles) Structures: Main Skill – Children can use Card and Tape to build a structure.
Design	Generating and communicating ideas using sketching and modelling. Learning about different types of structures, found in the natural world and in everyday objects.	Designing a vehicle that includes wheels, axles and axle holders, that when combined, will allow the wheels to move. Creating clearly labelled drawings that illustrate movement.	Designing a healthy wrap based on a food combination which work well together.	Mechanisms: Main Skill – Children can understand and use Wheels and Axles. Cooking and Nutrition: Main Skill – Children can slice using the bridge/claw grip
Make	Making a structure according to design criteria. Creating joints and structures from paper/card and tape. Building a strong and stiff structure by folding paper.	Adapting mechanisms, when: <i>they do not work as they should.</i> <i>to fit their vehicle design.</i> <i>to improve how they work after testing their vehicle.</i>	Slicing food safely using the bridge or claw grip. Constructing a wrap that meets a design brief.	

<p>Evaluate</p>	<p>Exploring the features of structures.</p> <p>Comparing the stability of different shapes.</p> <p>Testing the strength of own structures.</p> <p>Identifying the weakest part of a structure.</p> <p>Evaluating the strength, stiffness and stability of own structure.</p>	<p>Testing wheel and axle mechanisms, identifying what stops the wheels from turning, and recognising that a wheel needs an axle in order to move.</p>	<p>Describing the taste, texture and smell of fruit and vegetables.</p> <p>Taste testing food combinations and final products.</p> <p>Describing the information that should be included on a label.</p> <p>Evaluating which grip was most effective.</p>	
<p>Technical Knowledge</p>	<p>To know that shapes and structures with wide, flat bases or legs are the most stable.</p> <p>To understand that the shape of a structure affects its strength.</p> <p>To know that materials can be manipulated to improve strength and stiffness.</p> <p>To know that a structure is something which has been formed or made from parts.</p> <p>To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</p>	<p>To know that wheels need to be round to rotate and move.</p> <p>To understand that for a wheel to move it must be attached to a rotating axle.</p> <p>To know that an axle moves within an axle holder which is fixed to the vehicle or toy.</p> <p>To know that the frame of a vehicle (chassis) needs to be balanced.</p> <p>To know some real-life items that use wheels such as wheelbarrows, hamster wheels and vehicles.</p>	<p>To know that 'diet' means the food and drink that a person or animal usually eats.</p> <p>To understand what makes a balanced diet.</p> <p>To know where to find the nutritional information on packaging.</p> <p>To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.</p> <p>To understand that I should eat a range of different foods from each food group, and roughly how much of each food group.</p>	

	<p>To know that a 'strong' structure is one which does not break easily.</p> <p>To know that a 'stiff' structure or material is one which does not bend easily.</p> <p>To know that natural structures are those found in nature.</p> <p>To know that man-made structures are those made by people.</p>		<p>To know that nutrients are substances in food that all living things need to make energy, grow and develop.</p> <p>To know that 'ingredients' means the items in a mixture or recipe.</p> <p>To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy.</p> <p>To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.</p>	
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Year 3

	Autumn1 Cross Stitch and Applique (Cushions)	Spring 1 Electronic Charm	Summer 1 Eating Seasonally	End point
Vocabulary	Accurate Applique Cross-stitch Cushion Decorate Detail Fabric Patch Running-stitch Seam Stencil Stuffing Target audience Target customer Template	Analogue Badge CAD Control Design requirements Develop Digital Digital revolution Digital world Display Electronic Electronic products Fasten Feature Function Initiate Key features Layers Loops Micro: bit Monitor Net Point of sale Product Product design Program Sense Simulator	Climate Dry climate Exported Imported Mediterranean climate Nutrients Polar climate Recipe Seasonal food Temperate climate Tropical climate	Children are developing skills in 2 strands of the DT curriculum (Textiles and Cooking and Nutrition) and are introduced to a new strand (Digital World) Textiles: Main Skill – Children can independently demonstrate a Cross Stitch. Digital World: Main Skill – Children can understand and use 2D CAD. Cooking and Nutrition: Main Skill – Children can follow instructions in a recipe.

		<p>Smart wearables</p> <p>Stand</p> <p>Technology</p> <p>Template</p> <p>Test</p> <p>User</p>		
Design	<p>Designing and making a template from an existing cushion and applying individual design criteria.</p>	<p>Problem solving by suggesting potential features on a Micro: bit and justifying my ideas.</p> <p>Developing design ideas for a technology pouch.</p> <p>Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge.</p>	<p>Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish.</p>	
Make	<p>Following design criteria to create a cushion.</p> <p>Selecting and cutting fabrics with ease using fabric scissors.</p> <p>Threading needles with greater independence.</p> <p>Tying knots with greater independence.</p> <p>Sewing cross stitch to join fabric.</p> <p>Decorating fabric using appliqué.</p>	<p>Using a template when cutting and assembling the pouch.</p> <p>Following a list of design requirements.</p> <p>Selecting and using the appropriate tools and equipment for cutting, joining, shaping and decorating a foam pouch.</p> <p>Applying functional features such as using foam to create soft buttons.</p>	<p>Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination.</p> <p>Following the instructions within a recipe.</p>	

	Completing design ideas with stuffing and sewing the edges (Cushions)	Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm.		
Evaluate	Evaluating an end product and thinking of other ways in which to create similar items.	Analysing and evaluating an existing product. Identifying the key features of a pouch.	Establishing and using design criteria to help test and review dishes. Describing the benefits of seasonal fruits and vegetables and the impact on the environment. Suggesting points for improvement when making a seasonal tart.	
Technical Knowledge	To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. To know that when two edges of fabric have been joined together it is called a seam. To know that it is important to leave space on the fabric for the seam. To understand that some products are turned inside out after sewing so the stitching is hidden.	To understand that, in programming, a 'loop' is code that repeats something again and again until stopped. To know that a Micro:bit is a pocket-sized, codeable computer. To know what the 'Digital Revolution' is and features of some of the products that have evolved as a result. To know that in Design and technology the term 'smart' means a programmed product.	Understand seasonality, and know where and how fruit and vegetables come from and are grown. To know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth. To know that vegetables and fruit grow in certain seasons. To know that cooking instructions are known as a 'recipe'.	

		<p>To know the difference between analogue and digital technologies.</p> <p>To understand what is meant by 'point of sale display.'</p> <p>To know that CAD stands for 'Computer-aided design'.</p>	<p>To know that imported food is food which has been brought into the country.</p> <p>To know that exported food is food which has been sent to another country..</p> <p>To understand that imported foods travel from far away and this can negatively impact the environment.</p> <p>To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre.</p> <p>To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health.</p> <p>To know safety rules for using, storing and cleaning a knife safely.</p> <p>To know that similar coloured fruits and vegetables often have similar nutritional benefits.</p>	
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Banister Primary School
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EYFS, Key Stage 1 & 2

Year 4

	Autumn 2 Torches	Spring 2 Pavilions	Summer 2 Moving Monster	End point
Vocabulary	Battery Bulb Cell Conductor Copper Electrical item Electricity Insulator Series circuit Switch Torch Wire	Cladding Design criteria Structure Innovative 3D shapes Natural Reinforce	Evaluation Input Lever Linear motion Linkage Mechanical Mechanism Motion Oscillating motion Output Pivot Reciprocating motion Rotary motion Survey	Children are developing skills in 2 strands of the DT curriculum (Structures and Mechanical Systems) and are introduced to a new strand (Electrical Systems) Electrical Systems: Main Skill – Children can incorporate Switches and Bulbs into final product.. Structures: Main Skill – Children can build and reinforce Frame Structures.
Design	Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.	Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. Building frame structures designed to support weight.	Creating a class design criteria for a moving monster. Designing a moving monster for a specific audience in accordance with a design criteria.	Mechanical Systems: Main Skill – Children can understand and use Levers (Advanced) and Linkages.
Make	Making a torch with a working electrical circuit and switch. Using appropriate equipment to cut and attach materials.	Creating a range of different shaped frame structures. Making a variety of free standing frame structures of different shapes and sizes.	Making linkages using card for levers and split pins for pivots. Experimenting with linkages adjusting the widths, lengths and thicknesses of card used.	

	<p>Assembling a torch according to the design and success criteria.</p>	<p>Selecting appropriate materials to build a strong structure and cladding.</p> <p>Reinforcing corners to strengthen a structure.</p> <p>Creating a design in accordance with a plan.</p> <p>Learning to create different textural effects with materials.</p>	<p>Cutting and assembling components neatly.</p>	
Evaluate	<p>Evaluating electrical products.</p> <p>Testing and evaluating the success of a final product.</p>	<p>Evaluating structures made by the class.</p> <p>Describing what characteristics of a design and construction made it the most effective.</p> <p>Considering effective and ineffective designs.</p>	<p>Evaluating own designs against design criteria.</p> <p>Using peer feedback to modify a final design.</p>	
Technical Knowledge	<p>To understand that electrical conductors are materials which electricity can pass through.</p> <p>To understand that electrical insulators are materials which electricity cannot pass through.</p> <p>To know that a battery contains stored electricity that can be used to power products.</p>	<p>To understand what a frame structure is.</p> <p>To know that a 'free-standing' structure is one which can stand on its own.</p> <p>To know that a pavilion is a decorative building or structure for leisure activities.</p> <p>To know that cladding can be applied to structures for different effects.</p>	<p>To know that mechanisms are a collection of moving parts that work together as a machine to produce movement.</p> <p>To know that there is always an input and output in a mechanism.</p> <p>To know that an input is the energy that is used to start something working.</p>	

	<p>To know that an electrical circuit must be complete for electricity to flow.</p> <p>To know that a switch can be used to complete and break an electrical circuit.</p> <p>To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens.</p> <p>To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison.</p>	<p>To know that aesthetics are how a product looks.</p> <p>To know that a product's function means its purpose.</p> <p>To understand that the target audience means the person or group of people a product is designed for.</p> <p>To know that architects consider light, shadow and patterns when designing.</p>	<p>To know that an output is the movement that happens as a result of the input.</p> <p>To know that a lever is something that turns on a pivot.</p> <p>To know that a linkage mechanism is made up of a series of levers.</p> <p>To know some real-life objects that contain mechanisms.</p>	
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Banister Primary School
DT Progression
EYFS, Key Stage 1 & 2

Year 5

	Autumn1 Doodlers	Spring 1 What Could Be Healthier?	Summer 1 Stuffed Toys	Summer 2 Monitoring Devices	End point
Vocabulary	motor motorised product analysis series circuit circuit component current investigate product analysis problem-solve configuration develop stable target user DIY (do it yourself) hobby	Beef Cross-contamination Diet Ethical issues Farm Healthy Ingredients Method Nutrients Packaging Reared Recipe Research Substitute Supermarket Vegan Vegetarian Welfare	Design Template Model Stuffed toy Fabric Running stitch Cross-stitch Appliqué	Alert Ambient Boolean Consumables Decompose Development Device Duplicate Durable Electronic Inventor Lightweight Man-made Manipulate Manoeuvre Microplastics Model Monitor Monitoring device Moulded Plastic Plastic pollution Programming comment Programming loop Reformed Replica Research Sensor	Children are developing skills in 4 strands of the DT curriculum (Electrical Systems, Cooking and Nutrition, Textiles and Digital World) Electrical Systems: Main Skill – Children can incorporate Motors into final product. Cooking and Nutrition: Main Skill – Children can cut and prepare safely. Textiles: Main Skill – Children can independently demonstrate a Blanket stitch. Digital World:

				<p>Strong Sustainability Synthetic Thermometer Thermoscope Value Variable Versatile Water-resistant Workplane</p>	<p>Main Skill – Children can understand and use 3D CAD.</p>
Design	<p>Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product.</p> <p>Developing design criteria based on findings from investigating existing products.</p> <p>Developing design criteria that clarifies the target user.</p>	<p>Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients.</p> <p>Writing an amended method for a recipe to incorporate the relevant changes to ingredients.</p> <p>Designing appealing packaging to reflect a recipe.</p>	<p>Designing a stuffed toy, considering the main component shapes required and creating an appropriate template.</p> <p>Considering the proportions of individual components.</p>	<p>Researching (books, internet) for a particular (user's) animal's needs.</p> <p>Developing design criteria based on research.</p> <p>Generating multiple housing ideas using building bricks.</p> <p>Understanding what a virtual model is and the pros and cons of traditional and CAD modelling.</p> <p>Placing and manoeuvring 3D objects, using CAD.</p> <p>Changing the properties of, or combining one or more 3D objects, using CAD.</p>	

<p>Make</p>	<p>Altering a product's form and function by tinkering with its configuration.</p> <p>Making a functional series circuit, incorporating a motor.</p> <p>Constructing a product with consideration for the design criteria.</p> <p>Breaking down the construction process into steps so that others can make the product.</p>	<p>Cutting and preparing vegetables safely.</p> <p>Using equipment safely, including knives, hot pans and hobs.</p> <p>Knowing how to avoid cross-contamination.</p> <p>Following a step by step method carefully to make a recipe.</p>	<p>Creating a 3D stuffed toy from a 2D design.</p> <p>Measuring, marking and cutting fabric accurately and independently .</p> <p>Creating strong and secure blanket stitches when joining fabric.</p> <p>Threading needles independently.</p> <p>Using appliqué to attach pieces of fabric decoration.</p> <p>Sewing blanket stitch to join fabric.</p> <p>Applying blanket stitch so the spaces between the stitches are even and regular.</p>	<p>Understanding the functional and aesthetic properties of plastics.</p> <p>Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature rises above or falls below a specified range.</p>	
<p>Evaluate</p>	<p>Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses.</p> <p>Determining which parts of a product affect its function and which parts affect its form.</p>	<p>Identifying the nutritional differences between different products and recipes.</p> <p>Identifying and describing healthy benefits of food groups.</p>	<p>Testing and evaluating an end product and giving point for further improvements.</p>	<p>Stating an event or fact from the last 100 years of plastic history.</p> <p>Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices.</p>	

	<p>Analysing whether changes in configuration positively or negatively affect an existing product.</p> <p>Peer evaluating a set of instructions to build a product.</p>			<p>Explaining key functions in my program (audible alert, visuals).</p> <p>Explaining how my product would be useful for an animal carer including programmed features.</p>	
<p>Technical Knowledge</p>	<p>To know that series circuits only have one direction for the electricity to flow. To know when there is a break in a series circuit, all components turn off.</p> <p>To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin.</p> <p>To know a motorised product is one which uses a motor to function.</p> <p>To know that product analysis is critiquing the strengths and weaknesses of a product.</p>	<p>To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues.</p> <p>To know that I can adapt a recipe to make it healthier by substituting ingredients.</p> <p>To know that I can use a nutritional calculator to see how healthy a food option is.</p> <p>To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.</p>	<p>To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric.</p> <p>To understand that it is easier to finish simpler designs to a high standard.</p> <p>To know that soft toys are often made by creating appendages separately and then attaching them to the main body.</p> <p>To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.</p>	<p>To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record.</p> <p>To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose.</p> <p>To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met.</p> <p>To understand key developments in thermometer history.</p> <p>To know events or facts that took place</p>	

	<p>To know that 'configuration' means how the parts of a product are arranged.</p>			<p>over the last 100 years in the history of plastic, and how this is changing our outlook on the future.</p> <p>To know the 6Rs of sustainability.</p> <p>To understand what a virtual model is and the pros and cons of traditional vs CAD modelling.</p>	
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EYFS, Key Stage 1 & 2

Year 6

	Aut 2 Automata Toys	Spr 2 Steady Hand Game	Sum 2 Bridges	End point
Vocabulary	Accurate Assembly-diagram Automata Axle Bench hook Cam Clamp Component Cutting list Diagram Dowel Drill bits Exploded-diagram Finish Follower Frame Function Hand drill Jelutong Linkage Mark out Measure Mechanism Model Research Right-angle Set square Tenon saw	Assemble Battery Battery pack Benefit Bulb Bulb holder Buzzer Circuit Circuit symbol Component Conductor Copper Design Design criteria Evaluation Fine motor skills Fit for purpose Form Function Gross motor skills Insulator LED User	Accurate Arch bridge Beam bridge Bench hook Compression File Mark out Reinforce Sandpaper Set square or Try square Shape Structure Suspension Bridge Tension Truss bridge	Children are developing skills in 3 strands of the DT curriculum (Mechanical Systems, Electrical Systems and Structures) Mechanical Systems: Main Skill – Children can understand and use CAMs. Electrical Systems: Main Skill – Children can incorporate buzzers into final product. Structures: Main Skill – Children can use the correct techniques to saw safely.
Design	Experimenting with a range of cams, creating a design for an automata toy based on a	Designing a steady hand game - identifying and naming the components required.	Designing a stable structure that is able to support weight.	

	<p>choice of cam to create a desired movement.</p> <p>Understanding how linkages change the direction of a force.</p> <p>Making things move at the same time.</p> <p>Understanding and drawing cross-sectional diagrams to show the inner-workings of my design.</p>	<p>Drawing a design from three different perspectives.</p> <p>Generating ideas through sketching and discussion.</p> <p>Modelling ideas through prototypes.</p> <p>Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.</p>	<p>Creating a frame structure with a focus on triangulation.</p>	
<p>Make</p>	<p>Measuring, marking and checking the accuracy of the jelutong and dowel pieces required.</p> <p>Measuring, marking and cutting components accurately using a ruler and scissors.</p> <p>Assembling components accurately to make a stable frame.</p> <p>Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles.</p>	<p>Constructing a stable base for a game.</p> <p>Accurately cutting, folding and assembling a net.</p> <p>Decorating the base of the game to a high quality finish.</p> <p>Making and testing a circuit.</p> <p>Incorporating a circuit into a base.</p>	<p>Making a range of different shaped beam bridges.</p> <p>Using triangles to create truss bridges that span a given distance and support a load.</p> <p>Building a wooden bridge structure.</p> <p>Independently measuring and marking wood accurately.</p> <p>Selecting appropriate tools and equipment for particular tasks.</p> <p>Using the correct techniques to saw safely.</p>	

	<p>Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set.</p>		<p>Identifying where a structure needs reinforcement and using card corners for support.</p> <p>Explaining why selecting appropriating materials is an important part of the design process.</p> <p>Understanding basic wood functional properties.</p>	
Evaluate	<p>Evaluating the work of others and receiving feedback on own work.</p> <p>Applying points of improvement to their toys.</p> <p>Describing changes they would make/do if they were to do the project again.</p>	<p>Testing own and others finished games, identifying what went well and making suggestions for improvement.</p> <p>Gathering images and information about existing children's toys.</p> <p>Analysing a selection of existing children's toys.</p>	<p>Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary.</p> <p>Suggesting points for improvements for own bridges and those designed by others.</p>	
Technical Knowledge	<p>To understand that the mechanism in an automata uses a system of cams, axles and followers.</p> <p>To understand that different shaped cams produce different outputs.</p> <p>To know that an automata is a hand powered mechanical toy.</p>	<p>To know that batteries contain acid, which can be dangerous if they leak.</p> <p>To know the names of the components in a basic series circuit, including a buzzer.</p> <p>To know that 'form' means the shape and appearance of an object.</p>	<p>To understand some different ways to reinforce structures.</p> <p>To understand how triangles can be used to reinforce bridges.</p> <p>To know that properties are words that describe the form and function of materials.</p>	

	<p>To know that a cross-sectional diagram shows the inner workings of a product.</p> <p>To understand how to use a bench hook and saw safely.</p> <p>To know that a set square can be used to help mark 90° angles.</p>	<p>To know the difference between 'form' and 'function'.</p> <p>To understand that 'fit for purpose' means that a product works how it should and is easy to use.</p> <p>To know that form over purpose means that a product looks good but does not work very well.</p> <p>To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind.</p> <p>To understand the diagram perspectives 'top view', 'side view' and 'back'</p>	<p>To understand why material selection is important based on properties.</p> <p>To understand the material (functional and aesthetic) properties of wood.</p> <p>To understand the difference between arch, beam, truss and suspension bridges.</p> <p>To understand how to carry and use a saw safely.</p>	
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