



**Monks Coppenhall Academy and Day Nursery**  
 "To be the best we can in mind, body and spirit"  
 "Working together to create better futures"

## Design Technology Skills Progression

### (Following the Kapow Scheme of Work)

#### Structures

<b>EYFS (Reception)</b>			
		<b>Junk Modelling</b>	<b>Boats</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Making verbal plans and material choices.</li> <li>• Developing a junk model.</li> </ul>	<ul style="list-style-type: none"> <li>• Designing a junk model boat.</li> <li>• Using knowledge from exploration to inform design.</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Improving fine motor/scissor skills with a variety of materials.</li> <li>• Joining materials in a variety of ways (temporary and permanent).</li> <li>• Joining different materials together.</li> <li>• Describing their junk model, and how they intend to put it together.</li> </ul>	<ul style="list-style-type: none"> <li>• Making a boat that floats and is waterproof, considering material choices.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Giving a verbal evaluation of their own and others' junk models with adult support.</li> <li>• Checking to see if their model matches their plan.</li> <li>• Considering what they would do differently if they were to do it again.</li> <li>• Describing their favourite and least favourite part of their model.</li> </ul>	<ul style="list-style-type: none"> <li>• Making predictions about, and evaluating different materials to see if they are waterproof.</li> <li>• Making predictions about, and evaluating existing boats to see which floats best.</li> <li>• Testing their design and reflecting on what could have been done differently.</li> <li>• Investigating the how the shapes and structure of a boat affect the way it moves.</li> </ul>
<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To know there are a range to different materials that can be used to make a model and that they are all slightly different.</li> <li>• Making simple suggestions to fix their junk model.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that 'waterproof' materials are those which do not absorb water.</li> </ul>
	<b>Additional</b>		<ul style="list-style-type: none"> <li>• To know that some objects float and others sink.</li> <li>• To know the different parts of a boat.</li> </ul>

## Structures

		<u>Year 1</u>	<u>Year 2</u>
		<b>Constructing a Windmill</b>	<b>Baby Bear's Chair</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Learning the importance of a clear design criteria.</li> <li>• Including individual preferences and requirements in a design.</li> </ul>	<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> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Making stable structures from card, tape and glue.</li> <li>• Learning how to turn 2D nets into 3D structures.</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>	<ul style="list-style-type: none"> <li>• Making a structure according to design criteria.</li> <li>• Creating joints and structures from paper/card and tape.</li> <li>• Building a strong and stiff structure by folding paper.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't</li> <li>• Suggest points for improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Exploring the features of structures.</li> <li>• Comparing the stability of different shapes.</li> <li>• Testing the strength of own structures.</li> <li>• Identifying the weakest part of a structure.</li> <li>• Evaluating the strength, stiffness and stability of own structure.</li> </ul>
<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To understand that the shape of materials can be changed to improve the strength and stiffness of structures.</li> <li>• To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses).</li> <li>• To understand that axles are used in structures and mechanisms to make parts turn in a circle.</li> <li>• To begin to understand that different structures are used for different purposes.</li> <li>• To know that a structure is something that has been made and put together.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that shapes and structures with wide, flat bases or legs are the most stable.</li> <li>• To understand that the shape of a structure affects its strength.</li> <li>• To know that materials can be manipulated to improve strength and stiffness.</li> <li>• To know that a structure is something which has been formed or made from parts.</li> <li>• To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</li> <li>• To know that a 'strong' structure is one which does not break easily.</li> <li>• To know that a 'stiff' structure or material is one which does not bend easily.</li> </ul>
	<b>Additional</b>	<ul style="list-style-type: none"> <li>• To know that a client is the person I am designing for.</li> <li>• To know that design criteria is a list of points to ensure the product meets the clients needs and wants.</li> <li>• To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity. <ul style="list-style-type: none"> <li>• To know that windmill turbines use wind to turn and make the machines inside work.</li> </ul> </li> <li>• To know that a windmill is a structure with sails that are moved by the wind.</li> <li>• To know the three main parts of a windmill are the turbine, axle and structure.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that natural structures are those found in nature.</li> <li>• To know that man-made structures are those made by people.</li> </ul>

## Structures

		<u>Year 3</u>	<u>Year 4</u>
		<b>Constructing a Castle</b>	<b>Pavillions</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Designing a castle with key features to appeal to a specific person/purpose.</li> <li>• Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours.</li> <li>• Designing and/or decorating a castle tower on CAD software.</li> </ul>	<ul style="list-style-type: none"> <li>• Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect.</li> <li>• Building frame structures designed to support weight.</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Constructing a range of 3D geometric shapes using nets.               <ul style="list-style-type: none"> <li>• Creating special features for individual designs.</li> <li>• Making facades from a range of recycled materials.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Creating a range of different shaped frame structures.</li> <li>• Making a variety of free standing frame structures of different shapes and sizes.</li> <li>• Selecting appropriate materials to build a strong structure and cladding.               <ul style="list-style-type: none"> <li>• Reinforcing corners to strengthen a structure.</li> </ul> </li> <li>• Creating a design in accordance with a plan. • Learning to create different textural effects with materials.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.</li> <li>• Suggesting points for modification of the individual designs.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluating structures made by the class.</li> <li>• Describing what characteristics of a design and construction made it the most effective.</li> <li>• Considering effective and ineffective designs.</li> </ul>
<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To understand that wide and flat based objects are more stable.</li> <li>• To understand the importance of strength and stiffness in structures.</li> </ul>	<ul style="list-style-type: none"> <li>• To understand what a frame structure is.</li> <li>• To know that a 'free-standing' structure is one which can stand on its own.</li> </ul>
	<b>Additional</b>	<ul style="list-style-type: none"> <li>• To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose.               <ul style="list-style-type: none"> <li>• To know that a façade is the front of a structure.</li> </ul> </li> <li>• To understand that a castle needed to be strong and stable to withstand enemy attack.</li> <li>• To know that a paper net is a flat 2D shape that can become a 3D shape once assembled.</li> <li>• To know that a design specification is a list of success criteria for a product.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that a pavilion is a a decorative building or structure for leisure activities.</li> <li>• To know that cladding can be applied to structures for different effects.               <ul style="list-style-type: none"> <li>• To know that aesthetics are how a product looks.</li> <li>• To know that a product's function means its purpose.</li> </ul> </li> <li>• To understand that the target audience means the person or group of people a product is designed for.</li> <li>• To know that architects consider light, shadow and patterns when designing.</li> </ul>

## Structures

		<u>Year 6</u>
		<b>Playgrounds</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs.</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Building a range of play apparatus structures drawing upon new and prior knowledge of structures.</li> <li>• Measuring, marking and cutting wood to create a range of structures.</li> <li>• Using a range of materials to reinforce and add decoration to structures.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Improving a design plan based on peer evaluation.</li> <li>• Testing and adapting a design to improve it as it is developed.</li> <li>• Identifying what makes a successful structure.</li> </ul>
<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To know that structures can be strengthened by manipulating materials and shapes.</li> </ul>
	<b>Additional</b>	<ul style="list-style-type: none"> <li>• To understand what a 'footprint plan' is.</li> <li>• To understand that in the real world, design , can impact users in positive and negative ways.</li> <li>• To know that a prototype is a cheap model to test a design idea.</li> </ul>

## Mechanisms/Mechanical Systems

		<u>Year 2</u>	
		<b>Fairground wheel</b>	<b>Making a moving monster</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Selecting a suitable linkage system to produce the desired motion.</li> <li>• Designing a wheel.</li> </ul>	<ul style="list-style-type: none"> <li>• Creating a class design criteria for a moving monster.</li> <li>• Designing a moving monster for a specific audience in accordance with a design criteria.</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Selecting materials according to their characteristics.</li> <li>• Following a design brief</li> </ul>	<ul style="list-style-type: none"> <li>• Making linkages using card for levers and split pins for pivots.</li> <li>• Experimenting with linkages adjusting the widths, lengths and thicknesses of card used.</li> <li>• Cutting and assembling components neatly.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Evaluating different designs.</li> <li>• Testing and adapting a design.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluating own designs against design criteria.</li> <li>• Using peer feedback to modify a final design.</li> </ul>
<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To know that different materials have different properties and are therefore suitable for different uses.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that mechanisms are a collection of moving parts that work together as a machine to produce movement.</li> <li>• To know that there is always an input and output in a mechanism.</li> <li>• To know that an input is the energy that is used to start something working.</li> <li>• To know that an output is the movement that happens as a result of the input.</li> <li>• To know that a lever is something that turns on a pivot.</li> <li>• To know that a linkage mechanism is made up of a series of levers.</li> </ul>
	<b>Additional</b>	<ul style="list-style-type: none"> <li>• To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder.</li> <li>• To know that it is important to test my design as I go along so that I can solve any problems that may occur.</li> </ul>	<ul style="list-style-type: none"> <li>• To know some real-life objects that contain mechanisms</li> </ul>

## Mechanisms/Mechanical Systems

		<u>Year 4</u>	<u>Year 5</u>
		<b>Making a slingshot car</b>	<b>Making a pop-up book</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Designing a shape that reduces air resistance.               <ul style="list-style-type: none"> <li>• Drawing a net to create a structure from.</li> </ul> </li> <li>• Choosing shapes that increase or decrease speed as a result of air resistance.               <ul style="list-style-type: none"> <li>• Personalising a design.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Designing a pop-up book which uses a mixture of structures and mechanisms.               <ul style="list-style-type: none"> <li>• Naming each mechanism, input and output accurately.</li> <li>• Storyboarding ideas for a book.</li> </ul> </li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Measuring, marking, cutting and assembling with increasing accuracy.</li> <li>• Making a model based on a chosen design.</li> </ul>	<ul style="list-style-type: none"> <li>• Following a design brief to make a pop up book, neatly and with focus on accuracy.</li> <li>• Making mechanisms and/or structures using sliders, pivots and folds to produce movement.</li> <li>• Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluating the work of others and receiving feedback on own work.               <ul style="list-style-type: none"> <li>• Suggesting points for improvement.</li> </ul> </li> </ul>
<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To understand that all moving things have kinetic energy.</li> <li>• To understand that kinetic energy is the energy that something (object/person) has by being in motion.</li> <li>• To know that air resistance is the level of drag on an object as it is forced through the air.               <ul style="list-style-type: none"> <li>• To understand that the shape of a moving object will affect how it moves due to air resistance.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• To know that mechanisms control movement.</li> <li>• To understand that mechanisms can be used to change one kind of motion into another.</li> <li>• To understand how to use sliders, pivots and folds to create paper-based mechanisms.</li> </ul>
	<b>Additional</b>	<ul style="list-style-type: none"> <li>• To understand that products change and evolve over time.</li> <li>• To know that aesthetics means how an object or product looks in design and technology.               <ul style="list-style-type: none"> <li>• To know that a template is a stencil you can use to help you draw the same shape accurately.</li> <li>• To know that a birds-eye view means a view from a high angle (as if a bird in flight).</li> </ul> </li> <li>• To know that graphics are images which are designed to explain or advertise something.</li> <li>• To know that it is important to assess and evaluate design ideas and models against a list of design criteria.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that a design brief is a description of what I am going to design and make.</li> <li>• To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.</li> </ul>

## Electrical Systems (KS2 only)

		<u>Year 4</u>	<u>Year 5</u>
		<b>Torches</b>	<b>Doodlers</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product.</li> <li>• Developing design criteria based on findings from investigating existing products.               <ul style="list-style-type: none"> <li>• Developing design criteria that clarifies the target user.</li> </ul> </li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Making a torch with a working electrical circuit and switch.</li> <li>• Using appropriate equipment to cut and attach materials.</li> <li>• Assembling a torch according to the design and success criteria.</li> </ul>	<ul style="list-style-type: none"> <li>• Altering a product's form and function by tinkering with its configuration.</li> <li>• Making a functional series circuit, incorporating a motor.</li> <li>• Constructing a product with consideration for the design criteria.</li> <li>• Breaking down the construction process into steps so that others can make the product.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Evaluating electrical products.</li> <li>• Testing and evaluating the success of a final product.</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses.</li> <li>• Determining which parts of a product affect its function and which parts affect its form.</li> <li>• Analysing whether changes in configuration positively or negatively affect an existing product.</li> <li>• Peer evaluating a set of instructions to build a product.</li> </ul>
<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To understand that electrical conductors are materials which electricity can pass through.</li> <li>• To understand that electrical insulators are materials which electricity cannot pass through.</li> <li>• To know that a battery contains stored electricity that can be used to power products.               <ul style="list-style-type: none"> <li>• To know that an electrical circuit must be complete for electricity to flow.</li> </ul> </li> <li>• To know that a switch can be used to complete and break an electrical circuit.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that series circuits only have one direction for the electricity to flow.               <ul style="list-style-type: none"> <li>• To know when there is a break in a series circuit, all components turn off.</li> </ul> </li> <li>• To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin.</li> <li>• To know a motorised product is one which uses a motor to function.</li> </ul>
	<b>Additional</b>	<ul style="list-style-type: none"> <li>• To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens.</li> <li>• To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that product analysis is critiquing the strengths and weaknesses of a product.</li> <li>• To know that 'configuration' means how the parts of a product are arranged.</li> </ul>

## Cooking & Nutrition

		<u>EYFS (Reception)</u>	<u>Year 1</u>
		<b>Soup</b>	<b>Fruit &amp; Vegetables</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Designing a soup recipe as a class.</li> <li>• Designing soup packaging.</li> </ul>	<ul style="list-style-type: none"> <li>• Designing smoothie carton packaging by-hand or on ICT software.</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Chopping plasticine safely.</li> <li>• Chopping vegetables with support</li> </ul>	<ul style="list-style-type: none"> <li>• Chopping fruit and vegetables safely to make a smoothie.</li> <li>• Identifying if a food is a fruit or a vegetable.</li> <li>• Learning where and how fruits and vegetables grow.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Tasting the soup and giving opinions.</li> <li>• Describing some of the following when tasting food: look, feel, smell and taste.</li> <li>• Choosing their favourite packaging design and explaining why.</li> </ul>	<ul style="list-style-type: none"> <li>• Tasting and evaluating different food combinations.</li> <li>• Describing appearance, smell and taste.</li> <li>• Suggesting information to be included on packaging</li> </ul>
<b>Knowledge</b>		<ul style="list-style-type: none"> <li>• To know that soup is ingredients (usually vegetables and liquid) blended together. <ul style="list-style-type: none"> <li>• To know that vegetables are grown.</li> <li>• To recognise and name some common vegetables.</li> <li>• To know that different vegetables taste different.</li> <li>• To know that eating vegetables is good for us.</li> </ul> </li> <li>• To discuss why different packages might be used for different foods.</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the difference between fruits and vegetables.</li> <li>• To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber).</li> <li>• To know that a blender is a machine which mixes ingredients together into a smooth liquid. <ul style="list-style-type: none"> <li>• To know that a fruit has seeds and a vegetable does not.</li> <li>• To know that fruits grow on trees or vines.</li> </ul> </li> <li>• To know that vegetables can grow either above or below ground.</li> <li>• To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).</li> </ul>



## Cooking & Nutrition

		<u>Year 3</u>	<u>Year 5</u>
		<b>Eating Seasonally</b>	<b>What could be healthier?</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish.</li> </ul>	<ul style="list-style-type: none"> <li>• Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients.</li> <li>• Writing an amended method for a recipe to incorporate the relevant changes to ingredients.</li> <li>• Designing appealing packaging to reflect a recipe.</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination.</li> <li>• Following the instructions within a recipe</li> </ul>	<ul style="list-style-type: none"> <li>• Cutting and preparing vegetables safely.</li> <li>• Using equipment safely, including knives, hot pans and hobs.</li> <li>• Knowing how to avoid cross-contamination.</li> <li>• Following a step by step method carefully to make a recipe.</li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Establishing and using design criteria to help test and review dishes.</li> <li>• Describing the benefits of seasonal fruits and vegetables and the impact on the environment.</li> <li>• Suggesting points for improvement when making a seasonal tart.</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying the nutritional differences between different products and recipes.</li> <li>• Identifying and describing healthy benefits of food groups.</li> </ul>
<b>Knowledge</b>		<ul style="list-style-type: none"> <li>• To know that not all fruits and vegetables can be grown in the UK.</li> <li>• To know that climate affects food growth.</li> <li>• To know that vegetables and fruit grow in certain seasons.</li> <li>• To know that cooking instructions are known as a 'recipe'.</li> <li>• To know that imported food is food which has been brought into the country.</li> <li>• To know that exported food is food which has been sent to another country.</li> <li>• To understand that imported foods travel from far away and this can negatively impact the environment.</li> <li>• To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre.</li> <li>• To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health.</li> <li>• To know safety rules for using, storing and cleaning a knife safely.</li> <li>• To know that similar coloured fruits and vegetables often have similar nutritional benefits.</li> </ul>	<ul style="list-style-type: none"> <li>• To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues.</li> <li>• To know that I can adapt a recipe to make it healthier by substituting ingredients.</li> <li>• To know that I can use a nutritional calculator to see how healthy a food option is.</li> <li>• 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.</li> </ul>

## Textiles

		<u>Year 1</u>	<u>Year 6</u>
		<b>Puppets</b>	<b>Waistcoats</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>Using a template to create a design for a puppet.</li> </ul>	<ul style="list-style-type: none"> <li>Designing a waistcoat in accordance to a specification linked to set of design criteria.</li> <li>Annotating designs, to explain their decisions.</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>Cutting fabric neatly with scissors.</li> <li>Using joining methods to decorate a puppet.</li> <li>Sequencing the steps taken during construction.</li> </ul>	<ul style="list-style-type: none"> <li>Using a template when cutting fabric to ensure they achieve the correct shape.</li> <li>Using pins effectively to secure a template to fabric without creases or bulges.</li> <li>Marking and cutting fabric accurately, in accordance with their design.</li> <li>Sewing a strong running stitch, making small, neat stitches and following the edge.               <ul style="list-style-type: none"> <li>Tying strong knots.</li> </ul> </li> <li>Decorating a waistcoat, attaching features (such as appliqué) using thread.               <ul style="list-style-type: none"> <li>Finishing the waistcoat with a secure fastening (such as buttons).                   <ul style="list-style-type: none"> <li>Learning different decorative stitches.</li> </ul> </li> <li>Sewing accurately with evenly spaced, neat stitches.</li> </ul> </li></ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>Reflecting on a finished product, explaining likes and dislikes.</li> </ul>	<ul style="list-style-type: none"> <li>Reflecting on their work continually throughout the design, make and evaluate process.</li> </ul>
<b>Knowledge</b>		<ul style="list-style-type: none"> <li>To know that 'joining technique' means connecting two pieces of material together.</li> <li>To know that there are various temporary methods of joining fabric by using staples, glue or pins.</li> <li>To understand that different techniques for joining materials can be used for different purposes.</li> <li>To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.</li> <li>To know that drawing a design idea is useful to see how an idea will look.</li> </ul>	<ul style="list-style-type: none"> <li>To understand that it is important to design clothing with the client/ target customer in mind.</li> <li>To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric.</li> <li>To understand the importance of consistently sized stitches.</li> </ul>

## Digital World (KS2 only)

		<u>Year 3</u>	<u>Year 6</u>
		<b>Wearable technology</b>	<b>Navigating the world</b>
<b>Skills</b>	<b>Design</b>	<ul style="list-style-type: none"> <li>• Problem solving by suggesting which features on a Micro:bit might be useful and justifying my ideas.</li> <li>• Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge.</li> <li>• Developing design ideas through annotated sketches to create a product concept.               <ul style="list-style-type: none"> <li>• Developing design criteria to respond to a design brief.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Writing a design brief from information submitted by a client               <ul style="list-style-type: none"> <li>• Developing design criteria to fulfil the client’s request</li> <li>• Considering and suggesting additional functions for my navigation tool</li> </ul> </li> <li>• Developing a product idea through annotated sketches               <ul style="list-style-type: none"> <li>• Placing and manoeuvring 3D objects, using CAD</li> </ul> </li> <li>• Changing the properties of, or combine one or more 3D objects, using CAD</li> </ul>
	<b>Make</b>	<ul style="list-style-type: none"> <li>• Following a list of design requirements.</li> <li>• Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm.</li> </ul>	<ul style="list-style-type: none"> <li>• Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo)</li> <li>• Explaining material choices and why they were chosen as part of a product concept               <ul style="list-style-type: none"> <li>• Programming an N,E, S,W cardinal compass</li> </ul> </li> </ul>
	<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Analysing and evaluating wearable technology. • Using feedback from peers to improve design.</li> </ul>	<ul style="list-style-type: none"> <li>• Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool               <ul style="list-style-type: none"> <li>• Developing an awareness of sustainable design</li> </ul> </li> <li>• Identifying key industries that utilise 3D CAD modelling and explain why</li> <li>• Describing how the product concept fits the client’s request and how it will benefit the customers</li> <li>• Explaining the key functions in my program, including any additions</li> <li>• Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool</li> <li>• Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch               <ul style="list-style-type: none"> <li>• Demonstrating a functional program as part of a product concept</li> </ul> </li> </ul>

<b>Knowledge</b>	<b>Technical</b>	<ul style="list-style-type: none"> <li>• To understand that, in programming, a 'loop' is code that repeats something again and again until stopped.</li> <li>• To know that a Micro:bit is a pocket-sized, codeable computer.</li> <li>• To know that a simulator is able to replicate the functions of an existing piece of technology.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that accelerometers can detect movement</li> <li>• To understand that sensors can be useful in products as they mean the product can function without human input</li> </ul>
	<b>Additional</b>	<ul style="list-style-type: none"> <li>• To know what the 'Digital Revolution' is and features of some of the products that have evolved as a result.</li> <li>• To understand what is meant by 'point of sale display.'</li> <li>• To know that CAD stands for 'Computer-aided design'.</li> <li>• To know what a focus group is by taking part in one.</li> </ul>	<ul style="list-style-type: none"> <li>• To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request</li> <li>• To know that 'multifunctional' means an object or product has more than one function</li> <li>• To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing</li> </ul>