St Mark's C. E Junior School

Progressive Knowledge, Skills & Outcome Journey for Design Technology

Outcomes				
	Year 3	Year 4	Year 5	Year 6
Autumn	Children will design and make a pneumatic stone age animal Children will design and make a cave man outfit using applique	Children will design and make a book sleeve for an Ancient Greek Myth Children will design and make a Christmas themed toy	Children will design and make a bird box structure Children will design and make an electric greeting card	Children will design and make a moving toy from the Industrial Revolution Children will design and make a Christmas themed structure to sell.
Spring	Children will design and make a seasonal tart using fruits or veg (2024 Children will design and make an electrical charm	Children will design and make their own spa entrance based on Pitville pump room Children will design and make a mindful moment	Children will design and make a small toy for a child from Gloucester Prison (2024 Children will design and make a microbit case)	Children will design and make a steady hand game (2024 Children will design and make a device for trekking around the local area)
Summer	Children will design and make an electric display based on the Egyptians Children will design and make a pyramid using nets	Children will design and make a sling shot chariot Children will design and make an adapted Roman bread recipe	Children will design and make a pop up fact book to teach the Year 2s about the Maya Children will design and make a healthier sauce for a chili.	Children will design and make a 3 course meal based on ingredients that were rationed. Children will design and make a waistcoat for an evacuee.

Skills Progression

	Year 3	Year 4	Year 5	Year 6
	Structures			
Skills **Design** **Make** **Evaluate**	• Designing a pyramid with key features to appeal to a specific person/purpose • Drawing and labelling a pyramid design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours • Designing and/or decorating a pyramid on CAD software • Constructing a range of 3D geometric shapes using nets • Creating special features for individual designs • Making facades from a range of recycled materials • Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design • Suggesting points for modification of the individual designs	• 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 range of different shaped frame structures • Making a variety of free standing frame structures of different shapes and sizes • Selecting appropriate materials to build a strong structure and for the cladding • Reinforcing corners to strengthen a structure • Creating a design in accordance with a plan • Learning to create different textural effects with materials • Evaluating structures made by the class • Describing what characteristics of a design and	• Designing a stable structure that is able to support weight • Creating frame structure with focus on triangulation • Making a range of different shaped bird boxes • Using triangles to that span a given distance and supports a load • Building a wooden bird box structure • Independently measuring and marking wood accurately • Selecting appropriate tools and equipment for particular tasks • Using the correct techniques to saws safely • Identifying where a structure needs reinforcement and using card corners for support • Explaining why selecting appropriating materials is an important part of the design process	• Designing a Christmas product featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs • Building a range of products structures drawing upon new and prior knowledge of structures • Measuring, marking and cutting wood to create a range of structures • Using a range of materials to reinforce and add decoration to structures • Improving a design plan based on peer evaluation • Testing and adapting a design to improve it as it is developed • Identifying what makes a successful structure

		construction made it the most effective • Considering effective and ineffective designs	• Understanding basic wood functional properties • Adapting and improving own bird box structure by identifying points of weakness and reinforcing them as necessary • Suggesting points for improvements for own bird boxes and those designed by others	
Knowledge **Technical** **Additional**	• To understand that wide and flat based objects are more stable • To understand the importance of strength and stiffness in structures • To know features of a pyramids and their purpose • To know that a façade is the front of a structure • To understand that a pyramid needed to be strong and stable • To know that a paper net is a flat 2D shape that can become a 3D shape once assembled • To know that a design specification is a list of success criteria for a product	• To understand what a frame structure is • To know that a 'free-standing' structure is one which can stand on its own • To know that a pavilions ia a decorative building or structure for leisure activities • To know that cladding can be applied to structures for different effects. • To know that aesthetics are how a product looks • To know that a product's function means its purpose • To understand that the target audience means the person or group of people a product is designed for • To know that architects consider light, shadow and patterns when designing	• To understand some different ways to reinforce structures • To understand how triangles can be used to reinforce bridges • To know that properties are words that describe the form and function of materials • To understand why material selection is important based on their properties • To understand the material (functional and aesthetic) properties of wood • To understand the difference between arch, beam, truss and suspension bridges • To understand how to carry and use a saw safely	• To know that structures can be strengthened by manipulating materials and shapes • To understand what a 'footprint plan' is • To understand that in the real world, design , can impact users in positive and negative ways • To know that a prototype is a cheap model to test a design idea

		Mechanical systems		
Skills **Design** **Make** **Evaluate**	• Designing a stone age animal which uses a pneumatic system • Developing design criteria from a design brief • Generating ideas using thumbnail sketches and exploded diagrams • Learning that different types of drawings are used in design to explain ideas clearly • Creating a pneumatic system to create a desired motion • Building secure housing for a pneumatic system • Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy • Selecting materials due to their functional and aesthetic characteristics • Manipulating materials to create different effects by cutting, creasing, folding, weaving • Using the views of others to improve designs • Testing and modifying the outcome, suggesting improvements	• Designing a shape that reduces air resistance • Drawing a net to create a structure from • Choosing shapes that increase or decrease speed as a result of air resistance • Personalising a design • Measuring, marking, cutting and assembling with increasing accuracy • Making a model based on a chosen design • Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance	• Designing a pop-up book which uses a mixture of structures and mechanisms • Naming each mechanism, input and output accurately • Storyboarding ideas for a book • Following a design brief to make a pop up book, neatly and with focus on accuracy • Making mechanisms and/or structures using sliders, pivots and folds to produce movement • Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result • Evaluating the work of others and receiving feedback on own work • Suggesting points for improvement	•Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement • Understanding how linkages change the direction of a force • Making things move at the same time • Understanding and drawing cross-sectional diagrams to show the inner-working • Measuring, marking and checking the accuracy of the jelutong and dowel pieces required • Measuring, marking and cutting components accurately using a ruler and scissors • Assembling components accurately to make a stable frame • Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles • Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set • Evaluating the work of

	• Understanding the purpose of exploded-diagrams through the eyes of a designer and their client			• others and receiving feedback on own work • Applying points of improvements • Describing changes they would make/do if they were to do the project again
Knowledge **Technical** **Additional**	• To understand how pneumatic systems work • To understand that pneumatic systems can be used as part of a mechanism • To know that pneumatic systems operate by drawing in, releasing and compressing air • To understand how sketches, drawings and diagrams can be used to communicate design ideas • To know that exploded-diagrams are used to show how different parts of a product fit together • To know that thumbnail sketches are small drawings to get ideas down on paper quickly	• To understand that all moving things have kinetic energy • To understand that kinetic energy is the energy that something (object/person) has by being in motion • To know that air resistance is the level of drag on an object as it is forced through the air • To understand that the shape of a moving object will affect how it moves due to air resistance. • To understand that products change and evolve over time • To know that aesthetics means how an object or product looks in design and technology • To know that a template is a stencil you can use to help you draw the same shape accurately • To know that a birds-eye view means a view from a high angle (as if a bird in flight) • To know that graphics	• To know that mechanisms control movement • To understand that mechanisms that can be used to change one kind of motion into another • To understand how to use sliders, pivots and folds to create paper-based mechanisms • To know that a design brief is a description of what I am going to design and make • To know that designers often want to hide mechanisms to make a product more aesthetically pleasing	• To understand that the mechanism in an automata uses a system of cams, axles and followers • To understand that different shaped cams produce different outputs • To know that an automata is a hand powered mechanical toy • To know that a cross-sectional diagram shows the inner workings of a product • To understand how to use a bench hook and saw safely • To know that a set square can be used to help mark 90° angles

		are images which are designed to explain or advertise something • To know that it is important to assess and evaluate design ideas and models against a list of design criteria.		
		Electrical systems		
Skills **Design** **Make** **Evaluate**	• Carry out research based on Egypt to develop a range of initial ideas • Generate a final design for the electric poster with consideration to the client's needs and design criteria • Design an electric poster that fits the requirements of a given brief • Plan the positioning of the bulb (circuit component) and its purpose • Create a final design for the electric poster • Mount the poster onto corrugated card to improve its strength and withstand the weight of the circuit on the rear • Measure and mark materials out using a template or ruler • Fit an electrical component (bulb) • Learn ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge)	• Designing a game, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas • Making a game with a working electrical circuit and switch • Using appropriate equipment to cut and attach materials • Assembling a game according to the design and success criteria • Evaluating electrical products • Testing and evaluating the success of a final product and taking inspiration from the world	• Designing an electronic greetings card with a copper track circuit and components • Creating a labelled circuit diagram showing positive and negative parts in relation to the LED and the battery • Writing design criteria for an electronic greeting card • Compiling a moodboard relevant to my chosen theme, purpose and recipient • Making a functional series circuit • Creating an electronics greeting card, referring to a design criteria • Mapping out where different components of the circuit will go • Evaluating a peer's product against design criteria and suggesting modifications that could be made to improve the reliability or aesthetics of it or to incorporate another type of circuit component • Stating what Sir	• Designing a steady hand game - identifying and naming the components required • Drawing a design from three different perspectives • Generating ideas through sketching and discussion • Modelling ideas through prototypes • Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function' • Constructing a stable base for a game • Accurately cutting, folding and assembling a net • Decorating the base of the game to a high quality finish • Making and testing a circuit Incorporating a circuit into a base • Testing own and others finished games, identifying what went well and making suggestions for improvement • Gathering images and

	• Learning to give and accept constructive criticism on own work and the work of others • Testing the success of initial ideas against the design criteria and justifying opinions • Revisiting the requirements of the client to review developing design ideas and check that they fulfil their needs		Rowland Hill invented and why it was important for greeting cards • Analysing and evaluating a range of existing greeting cards	information about existing children's toys • Analysing a selection of existing children's toys
Knowledge **Technical** **Additional**	• To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit • To understand common features of an electric product (switch, battery or plug, dials, buttons etc.) • To list examples of common electric products (kettle, remote control etc.) • To understand that an electric product uses an electrical system to work (function) • To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits • To understand the importance and purpose of information design • To understand how material choices (such as mounting paper to corrugated	• To understand that electrical conductors are materials which electricity can pass through • To understand that electrical insulators are materials which electricity cannot pass through • To know that a battery contains stored electricity that can be used to power products • To know that an electrical circuit must be complete for electricity to flow • To know that a switch can be used to complete and break an electrical circuit • To know the features of a game • To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison	• To know the key components used to create a functioning circuit • To know that copper is a conductor and can be used as part of a circuit • To understand that breaks in a circuit will stop it from working • To understand that a series circuit only has one path for the electrical current to flow from positive to negative • To know that we use symbols to represent components in a circuit diagram • To know the names of the components in a basic series circuit: crocodile wires, LED (light-emitting diode), battery holder, battery, cell • To know that product analysis is critiquing the strengths and weaknesses of a product	• To know that batteries contain acid, which can be dangerous if they leak • To know the names of the components in a basic series circuit including a buzzer • To know that 'form' means the shape and appearance of an object • To know the difference between 'form' and 'function' • To understand that 'fit for purpose' means that a product works how it should and is easy to use • To know that form over purpose means that a product looks good but does not work very well • To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind • To understand the

	card) can improve a product to serve its purpose (remain rigid without bending when the electrical circuit is attached).		• To know that 'mass production' is when a product is made in large quantities by a machine, usually in a factory • To know that one-off production is when only one of a product is made by hand • To know that 'bespoke' means a product was made for a particular reason or person • To understand the development of personal message exchange through to the invention of the Penny Black stamp, and exchanging of greeting cards • To know that a moodboard may include words, sketches, textures, colours, material samples etc. and can act as inspiration when designing	diagram perspectives 'top view', 'side view' and 'back'
Cooking & nutrition				
Skills **Design** **Make** **Evaluate**	• Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish • Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination • Following the instructions within a recipe • Establishing and using	• Designing a bread within a given budget, drawing upon previous taste testing • Following a baking recipe • Cooking safely, following basic hygiene rules • Adapting a recipe • Evaluating a recipe, considering: taste, smell, texture and appearance • Describing the impact of the budget on the selection of	• Adapting a traditional chili recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients • Writing an amended method for a chili recipe to incorporate the relevant changes to ingredients • Designing appealing packaging to reflect a chili recipe • Cutting and preparing vegetables safely	• Writing a recipe, explaining the key steps, method and ingredients • Including facts and drawings from research undertaken • Following a recipe, including using the correct quantities of each ingredient • Adapting a recipe based on research • Working to a given timescale

	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	ingredients • Evaluating and comparing a range of products • Suggesting modifications	• Using equipment safely, including knives, hot pans and hobs • Knowing how to avoid cross-contamination • Following a step by step method carefully to make a recipe • Identifying the nutritional differences between different products and recipes • Identifying and describing healthy benefits of food groups	• Working safely and hygienically with independence • Evaluating a recipe, considering: taste, smell, texture and origin of the food group • Taste testing and scoring final products • Suggesting and writing up points of improvements in productions • Evaluating health and safety in production to minimise cross contamination
Knowledge	• 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' • To know that imported food is food which has been brought into the country • To know that exported food is food which has been sent to another country. • To understand that imported foods travel from far away and this can negatively impact the environment • To know that each fruit and vegetable gives us	• To know that the amount of an ingredient in a recipe is known as the 'quantity' • To know that it is important to use oven gloves when removing hot food from an oven • To know the following cooking techniques: sieving, creaming, rubbing method, cooling • To understand the importance of budgeting while planning ingredients for bread	• To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues • To know that I can adapt a recipe to make it healthier by substituting ingredients • To know that I can use a nutritional calculator to see how healthy a food option is • To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects	• To know that 'flavour' is how a food or drink tastes • To know that many countries have 'national dishes' which are recipes associated with that country • To know that 'processed food' means food that has been put through multiple changes in a factory • To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides • To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork)

	nutritional benefits because they contain vitamins, minerals and fibre • To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health • To know safety rules for using, storing and cleaning a knife safely • To know that similar coloured fruits and vegetables often have similar nutritional benefits			
	Textiles			
Skills **Design** **Make** **Evaluate**	• Designing and making a template from an existing outfit and applying individual design criteria • Following design criteria to create an outfit • Selecting and cutting fabrics with ease using fabric scissors • Threading needles with greater independence • Tying knots with greater independence • Sewing cross stitch to join fabric • Decorating fabric using appliqué • Completing design ideas with stuffing and sewing the edges	• Writing design criteria for a product, articulating decisions made • Designing a personalised book sleeve • Making and testing a paper template with accuracy and in keeping with the design criteria • Measuring, marking and cutting fabric using a paper template • Selecting a stitch style to join fabric, working neatly sewing small neat stitches • Incorporating fastening to a design • Testing and evaluating an end product against the original design criteria	• Designing a stuffed toy considering the main component shapes required and creating an appropriate template • Considering the proportions of individual components • Creating a 3D stuffed toy from a 2D design • Measuring, marking and cutting fabric accurately and independently • Creating strong and secure blanket stitches when joining fabric • Threading needles independently • Using applique to attach pieces of fabric decoration • Sewing blanket stitch to	• Designing a waistcoat in accordance to specification linked to set of design criteria to fit a specific theme • Annotating designs • Using a template when pinning panels onto fabric • Marking and cutting fabric accurately, in accordance with a design • Sewing a strong running stitch, making small, neat stitches and following the edge • Tying strong knots • Decorating a waistcoat - attaching objects using thread and adding a secure fastening • Learning different decorative stitches • Sewing accurately with

	• Evaluating an end product and thinking of other ways in which to create similar items	• Deciding how many of the criteria should be met for the product to be considered successful • Suggesting modifications for improvement • Articulating the advantages and disadvantages of different fastening types	join fabric • Applying blanket stitch so the space between the stitches are even and regular • Testing and evaluating an end product and giving point for further improvements	even regularity of stitches • Evaluating work continually as it is created
Knowledge	• To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric • 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 know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro • To know that different fastening types are useful for different purposes • To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions	• To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric • To understand that it is easier to finish simpler designs to a high standard • To know that soft toys are often made by creating appendages separately and then attaching them to the main body • 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	• To understand that it is important to design clothing with the client/ target customer in mind • To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric • To understand the importance of consistently sized stitches
	Digital World			
Skills **Design** **Make** **Evaluate**	• Problem solving by suggesting potential features on a Micro: bit and justifying my ideas • Developing design ideas for a technology pouch • Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge	• Writing design criteria for a programmed timer (Micro:bit) • Exploring different mindfulness strategies • Applying the results of my research to further inform my design criteria • Developing a prototype case for my mindful moment	• Researching (books, internet) for a particular (user's) animal's needs • Developing design criteria based on research • Generating multiple housing ideas using building bricks • Understanding what a virtual model is and the pros and	• Writing a design brief from information submitted by a client • Developing design criteria to fulfil the client's request • Considering and suggesting additional functions for my navigation tool • Developing a product

	• Using a template when cutting and assembling the pouch • Following a list of design requirements • Selecting and using the appropriate tools and equipment for cutting, joining, shaping and decorating a foam pouch • Applying functional features such as using foam to create soft buttons • Analysing and evaluating an existing product • Identifying the key features of a pouch	timer • Using and manipulating shapes and clipart, using computer-aided design (CAD), to produce a logo • Following a list of design requirements • Developing a prototype case for my mindful moment timer • Creating a 3D structure using a net • Programming a micro:bit in the Microsoft micro:bit editor, to time a set number of seconds/minutes upon button press • Investigating and analysing a range of timers by identifying and comparing their advantages and disadvantages • Evaluating my micro:bit program against points on my design criteria and amending them to include any changes I made • Documenting and evaluating my project • Understanding what a logo is and why they are important in the world of design and business • Testing my program for bugs (errors in the code) • Finding and fixing the bugs (debug) in my code	cons of traditional and CAD modelling • Placing and manoeuvring 3D objects, using CAD • Changing the properties of, or combine one or more 3D objects, using CAD • Understanding the functional and aesthetic properties of plastics • Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature rises above or falls below a specified range • Stating an event or fact from the last 100 years of plastic history • Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices • Explaining key functions in my program (audible alert, visuals) • Explaining how my product would be useful for an animal carer including programmed features	idea through annotated sketches • Placing and manoeuvring 3D objects, using CAD • Changing the properties of, or combine one or more 3D objects, using CAD • Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo) • Explaining material choices and why they were chosen as part of a product concept • Programming an N,E, S,W cardinal compass • Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool • Developing an awareness of sustainable design • Identifying key industries that utilise 3D CAD modelling and explain why • Describing how the product concept fits the client's request and how it will benefit the customers • Explaining the key functions in my program, including any additions • Explaining how my program fits the design criteria

Knowledge **Technical** **Additional**	• 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 • Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm • 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 • To know the difference between analogue and digital technologies • To understand what is meant by 'point of sale display' • To know that CAD stands for Computer-aided design	• To understand what variables are in programming • To know some of the features of a Micro:bit • To know that an algorithm is a set of instructions to be followed by the computer • To know that it is important to check my code for errors (bugs) • To know that a simulator can be used as a way of checking your code works before installing it onto an electronic device •Understand the terms 'ergonomic' and 'aesthetic' •Know that a prototype is a 3D model made out of cheap materials, that allows us • To test design ideas and make better decisions about size, shape and materials	• To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record • To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose • To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met • To understand key developments in thermometer history • To know events or facts that took place over the last 100 years in the history of plastic, and how this is changing our outlook on the future • To know the 6Rs of sustainability • To understand what a virtual model is and the pros and cons of traditional vs CAD	• To know that accelerometers can detect movement • To understand that sensors can be useful in products as they mean the product can function without human input • To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request • To know that 'multifunctional' means an object or product has more than one function • To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing

				modelling	

Assessment

Structure: red **Mechanical Systems: blue** **Electrical systems: Green** **Nutrition: purple** **Textiles: Black** **Digital world: yellow**

	Year 3	Year 4	Year 5	Year 6
Autumn	Children will know that pneumatic systems can be used as part of a mechanism Children will be able to decorate fabric using applique.	Children will be able to make a game with a working electrical switch Children will be able to measure, mark and cut fabric using a paper template.	Children will be able to independently measure and mark wood accurately. Children will be able to make a card using a copper track circuit & components.	Children will be able to test and adapt a design to improve it as it is developed. Children will know that the mechanism in an automata uses a system of cams, axels & followers.
Spring	Children will know that imported foods travel from far away and this impacts the environment. **Children will know that a Micro:bit is a pocket sized, codeable computer (2024)**	Children will be able to make a variety of free standing frame structures of different shapes and sizes. **Children will know what variables are in programming & some features of a Micro:bit (2024)**	Children will be able to create strong and secure blanket stiches when joining fabric. **Children will know that a sensor is a tool or device that is designed to monitor, detect & respond to changes for a purpose. (2024)**	Children will be able to make and test a circuit and incorporate it into a base. **Children will know that magnetometers are devices that measure the Earth's magnetic field (2024)**
Summer	Children will be able to construct a range of 3D geometric shapes using nets. Children will be able to make a display to improve its strength to withstand the weight of a circuit.	Children will know that air resistance is the level of drag on an object as it is forced through the air. Children will be able to use: sieving, creaming, rubbing & cooling as cooking methods.	Children will know how to use sliders, pivots and folds to create paper-based mechanisms. Children will be able to adapt a recipe to make it healthier by substituting ingredients.	Children will know that many countries have "national dishes" which are recipes associated with that country. Children will be able to sew using a strong running stitch, making a small neat stitches following on the edge.