Progression of Skills and Knowledge Design and Technology

Skills: Design

	EYFS	Y1	Y2	End of KS1 expectations	Y3	Y4	Y5	Y6	End of KS2 expectations
Structures	Make verbal plans and material choices. Develop a junk model. Use knowledge from exploration to inform a design	Learn the importance of a clear design criteria Include individual preferences and requirements in a design.	Generate and communicate ideas using sketching and modelling. Learn about different types of structures, found in the natural world and in everyday objects	**Design purposeful, functional, appealing products for themselves and other users based on design criteria** **Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology**	Design with key features to appeal to a specific person/purpose. Draw and labell a design to show the features - materials needed and colours Design and/or decorate on CAD software	Design a stable structure that is aesthetically pleasing. Select materials to create a desired effect. Buil frame structures designed to support weight	Design a stable structure that is able to support weight. Create frame structure with focus on triangulation	Design featuring a variety of different structures Give careful consideration to how the structures will be used Consider effective and ineffective designs	**Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.** **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design.**
Mechansisms	Follow a given design to make a simple mechanism. Use the language of design (join, build, shape, move)	Explain how to adapt mechanisms, using bridges or guides to control the movement Design for a given audience Design using wheels, axles and axle holders, which will allow the wheels to move Create clearly labelled drawings to show movement.	Select a suitable linkage system to produce the desired motions Design a wheel. Select appropriate materials based on their properties Create a class design criteria Design for a specific audience in accordance with a design criteria		Design using a pneumatic system. Develop design criteria from a design brief . Generate ideas using thumbnail sketches and exploded diagrams Learn that different types of drawings are used in design to explain ideas clearly	Design a shape that reduces air resistance Draw a net to create a structure from Choose shapes that increase or decrease speed as a result of air resistance Personalise a design	Design using a mixture of structures and mechanisms Name each mechanism, input and output accurately Storyboard ideas	Experiment with a range of cams. Create a design based on a choice of cam to create a desired movement. Understand how linkages change the direction of a force Make things move at the same time. Understand and drawing cross-sectional diagrams	
Electrical	n/a				Carry out research based on a given topic (e.g. The Romans) to develop a range of initial ideas Generate a final design with consideration to the client's needs and design criteria	Design giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas	Create a labelled circuit diagram showing positive and negative parts in relation to the LED and the battery. Write design criteria for an electronic greeting card Compiling a	Design -identifying and naming the components required Draw a design from three different perspectives. Generate ideas through sketching and discussion Modelling ideas	

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					Design that fits the requirements of a given brief Plan the positioning of the circuit component and its purpose		moodboard relevant to my chosen theme, purpose and recipient	through prototypes Understanding the purpose of products, including what is meant by ‘fit for purpose’ and ‘form over function’	
Cooking and	Design a recipe as a class. Design packaging.	Design carton packaging by-hand or on ICT software	Design a food combination which work well together		Create a healthy and nutritious recipe using seasonal ingredients, considering the taste, texture, smell and appearance of the dish	Design within a given budget, drawing upon previous taste testing	Adapt a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients Writing an amended method for a recipe incorporating changes. Designing appealing packaging to reflect a recipe	Write a recipe, explaining the key steps, method and ingredients Including facts and drawings from research undertaken	
Textiles	Discuss what a good design needs. Design a simple pattern. Choose form available materials.	Use a template to create a design	Design a simple textile product		Design and make a template from an existing product Applying individual design criteria	Write design criteria for a product, articulating decisions made Personalise a design	Design considering the main component shapes required Create an appropriate template Consider the proportions of individual components	Designing in accordance to specification linked to design criteria to fit a specific theme. Annotating designs	
Digital World	n/a				Problem solve by suggesting potential features on a Micro: bit. Justify my ideas. Develop design ideas. Draw and manipulate 2D shapes, using computer-aided design.	Write design criteria for a programmed timer (Micro:bit). Use research to further inform design criteria. Develop a prototype. Follow a list of design requirements	Research(books, internet) for a particular user’s needs. Develop design criteria based on research. Generate multiple ideas.	Write a design brief from information submitted by a client. Develop design criteria to fulfil the client’s request. Develop a product idea through annotated sketches.	

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Skills: Make									
	EYFS	Y1	Y2	End of KS1	Y3	Y4	Y5	Y6	End of KS2
Structures	Improve fine motor/ scissor skills with a variety of materials. Join materials in a variety of ways (temporary and permanent) Join different materials together. Describe their model and how they intend to put it together. Consider materials choices.	Make stable structures from card, tape and glue Learning how to turn 2D nets into 3D structures Following instructions to cut and assemble the supporting structure Making functioning turbines and axles which are assembled into a main supporting structure	Make a structure according to design criteria Creating joints and structures from paper/card and tape Building a strong and stiff structure by folding paper	**Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]** **Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics**	Construct a range of 3D geometric shapes using nets Creating special features for individual designs Making facades from a range of recycled materials	Create 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	Use triangles to strengthen structures and supports a load Independently measuring and marking wood accurately Select appropriate tools and equipment for particular tasks Using the correct techniques to saws safely Identify where a structure needs reinforcement and using card corners for support Explain why selecting appropriating materials is an important part of the design process Understanding basic wood functional properties	Build 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	**Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately** **Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities**

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Mechanisms	Construct with a purpose, using a variety of resources Use simple tools and techniques Replicate designs with materials / components. Select tools and techniques to shape, assemble and join Use languagae of making (join, build, shape, longer, shorter)	Follow a design to create moving models that use levers and sliders Adapting mechanisms	Select materials according to their characteristics Following a design brief Making linkages using card for levers and split pins for pivots Experimenting with linkages adjusting the widths, lengths and thicknesses of card used Cutting and assembling components neatly		Create a pneumatic system to create a desired motion. Build secure housing for a pneumatic system Use syringes and balloons to create different types of pneumatic systems Select materials for functional and aesthetic characteristics Manipulate materials by cutting, creasing, folding, weaving	Measuring, marking, cutting and assembling with increasing accuracy Make a model based on a chosen design	Follow a design brief to make neatly and with focus on accuracy Make mechanisms and/or structures using sliders, pivots and folds to produce movement Use layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result	Measuring, marking and checking the accuracy Measuring, marking and cutting components accurately using a ruler and scissors Assemble components accurately to make a stable frame. Select appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set	
Electrical	n/a				Create a final design Suggest ways to improve strength Measure and mark materials out using a template or ruler Learn ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge)	Make a torch with a working electrical circuit and switch Using appropriate equipment to cut and attach materials Assembling according to the design and success criteria	Make a functional series circuit Creating by referring to a design criteria Mapping out where different components of the circuit will go	Accurately cutting, folding and assembling a net Decorating to a high quality finish Making and testing a circuit Incorporating a circuit into a base	
Cooking and Nutrition	Discuss how to make an activity safe and hygienic	Chop fruit and vegetables safely. Identify if a food is a fruit or a vegetable. Learn where and how fruits and vegetables grow	Slice food safely using the bridge or claw grip. Construct that meets a design brief		Know how to prepare themselves and a work space to cook safely in, Following the instructions within a recipe	Follow a recipe accurately. Learn the basic rules to avoid food contamination Cook safely, following basic hygiene rules Adapting a recipe	Cut and prepare vegetables safely. Use equipment safely, including knives, hot pans and hobs Know how to avoid cross-contamination Follow a step by step method carefully to make a recipe	Follow a recipe, including using the correct quantities of each ingredient Adapt a recipe based on research. Work to a given timescale. Work safely and hygienically with independence	

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Textiles	Developing fine motor/ cutting skills with scissors. Exploring fine motor/threading and weaving (under, over technique) with a variety of materials. Use a prepared needle and wool to practice threading.	Cutting fabric with scissors. Using suggested joining methods to decorate a puppet. Following the sequence of steps.	Cutting fabric neatly with scissors. Choosing from a variety of joining methods to decorate a puppet. Sequencing the steps taken for construction.		Pin a template and cut around it. To cut fabric with a seam allowance. Sewing a simple running stitch. To tie a knot in thread. Decorate by attaching features (such as applique)	Position the template to avoid waste. Cut fabric from a template with increasing accuracy. To cut fabric with a consistent seam allowance. Sewing a strong running stitch, following the edge. To tie a strong knot.	To cut fabric from a template with increasing accuracy, adapting the shape as necessary. Sewing a running stitch with small, neat stitches. Decorate by attaching features (such as applique) using stitches. Learn different decorative stitches.	Cut fabric from a template with precision. Sewing using a small, neat and consistent sized running stitch parallel to the edge. Select from and use a variety of applique and decorative stitches to good effect.	

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Skills: Evaluate

	EYFS	Y1	Y2	End of KS1 expectations	Y3	Y4	Y5	Y6	End of KS2 expectations
Structures	Give a verbal evaluation of their own and other's models with adult support. Check to see if their model matches up with the plan. Test their design Consider what they could do diferenlty. Describe their favorite and least favorite part of the model. Make predictions about materials. Evaluate choices made.	Evaluate according to design criteria. Test the finished product Suggest points for improvement	Explore the features of structures. Compare the stability of different shapes. Test the strength of structures. Identify the weakest part of a structure Evaluate the strength, stiffness and stability of own structure	**Explore and evaluate a range of existing products.** **Evaluate their ideas and products against design criteria.**	Evaluate own work and the work of others based on the aesthetic of the finished product. Compare finished product to the original design. Suggest points for modification of the individual designs.	Evaluate structures made by the class. Describe what characteristics of a design and construction made it the most effective. Consider effective and ineffective designs.	Adapt and improve structure by identifying points of weakness and reinforcing them as necessary. Suggesting points for improvements for own structures and those designed by others.	Improve a design plan based on peer evaluation. Test and adapting a design to improve it as it is developed. Identify what makes a successful structure.	**Investigate and analyse a range of existing products.** **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.** **Understand how key events and individuals in design and technology have helped shape the world**
Mechanisms	Adapt work if necessary. Dismantle, examine, talk about existing objects/ products. Talk about how things work. Look at similarities / differences between existing objects / materials / tools.	Test a finished product, see whether it moves as planned. If not, explaining why and how it can be fixed. Review the success of a product by testing it with its intended audience. Test mechanisms, identify what stops wheels from turning, knowing that a wheel needs an axle in order to move	Evaluate different designs. Test and adapt a design. Evaluate own designs against design criteria. Use peer feedback to modify a final design		Use the views of others to improve designs. Test and modify the outcome, suggesting improvements. Understand the purpose of exploded-diagrams through the eyes of a designer and their client.	Evaluate the effect of shape on speed. Evaluate the accuracy of workmanship and its affect on performance.	Evaluating the work of others. Receive feedback on own work. Suggest points for improvement.	Evaluating the work of others. Receive feedback on own work. Applying points of improvements. Describe changes they would make/do if they were to do the project again.	

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Electrical	n/a				Learn to give and accept constructive criticism on own work and the work of others. Test the success of initial ideas against the design criteria and justifying opinion. Revisit the requirements of the client to review developing design ideas. Check that design ideas fulfil needs.	Evaluating electrical products. Test and evaluate the success of a final product. Take inspiration from the w	Evaluating a peer's product against design criteria. Suggest modifications that could be made to improve the reliability or aesthetics of it. State what Sir Rowland Hill invented and why it was important. Analyse a range of existing products.	Test own and others finished products. Identify what went well and making suggestions for improvement . Gather images and information about existing products. Analyse and evaluate a selection of existing products.	
Cooking and Nutrition	Describe textures. State likes and dislikes. Practice some appropriate safety measures appropriately.	Taste and evaluate different food combinations. Describe appearance, smell and taste. Suggest information to be included on packaging	Describe the taste, texture and smell of fruit and vegetables. Taste test food combinations and final products. Describe the information that should be included on a label. Evaluate which technique was most effective		Establish and use design criteria to help test and review dishes. Describe the benefits of seasonal fruits and vegetables and the impact on the environment. Suggest points for improvement.	Evaluate a recipe, considering: taste, smell, texture and appearance. Describe the impact of the budget on the selection of ingredients. Evaluate and compare a range of products. Suggest modifications.	Identify the nutritional differences between different products and recipes. Identify and describe healthy benefits of food groups. Evaluate a recipe, considering: taste, smell, texture and origin of the food group. Suggest modifications with reference to the design criteria.	Evaluate a recipe, considering: taste, smell, texture and origin of the food group. Taste test and score final products. Suggest and write up points of improvements in productions. Evaluate health and safety in production to minimise cross contamination.	

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Textiles	Adapt work as necessary. Talk about existing objects. Describe textures.	Reflect on a finished product. Explain likes and dislikes	Troubleshoot scenarios posed by teacher. Evaluate the quality on others' work. Discuss as a class, the success of their work against the success criteria. Identify aspects of their peers' work that they particularly like and why.		Evaluate an end product and think of other ways in which to create similar items.	Test and evaluate an end product. Decide how many of the criteria should be met for the product to be considered successful. Suggest modifications for improvement. Articulate the advantages and disadvantages of different fastening types	Test and evaluate an end product against the original design criteria. Give points for further improvements	Evaluate work continually as it is created.	

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Technical Knowledge

	EYFS	Y1	Y2	End of KS1 expectations	Y3	Y4	Y5	Y6	End of KS2 expectations
Structures	There are a range of different materials that can be used to make a model and that they are slightly different. Make simple suggestions to fix their model. To know that 'waterproof' means materials which do not absorb water. In Design and technology we call a plan a 'design'.	The shape of materials can be changed to improve the strength and stiffness of structures Cylinders are a strong type of structure Axles are used in structures and mechanisms to make parts turn in a circle. Different structures are used for different purposes. A structure is something that has been made and put together. A client is the person I am designing for. Design criteria is a list of points to ensure the product meets the clients needs and wants. A windmill harnesses the power of wind for a purpose. Windmill turbines use wind to turn and make the machines inside work. A windmill is a structure with sails that are moved by the wind.	Shapes and structures with wide, flat bases or legs are the most stable. The shape of a structure affects its strength. Materials can be manipulated to improve strength and stiffness. A structure is something which has been formed or made from parts. A 'stable' structure is one which is firmly fixed and unlikely to change or move. A 'strong' structure is one which does not break easily. A 'stiff' structure or material is one which does not bend easily. Natural structures are those found in nature. Man-made structures are those made by people.	**Build structures, exploring how they can be made stronger, stiffer and more stable.**	Wide and flat based objects are more stable. Strength and stiffness are important in structures. Features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse. A façade is the front of a structure. A castle needed to be strong and stable to withstand enemy attack. A paper net is a flat 2D shape that can become a 3D shape once assembled. A design specification is a list of success criteria for a product	Cladding can be applied to structures for different effects. Aesthetics are how a product looks. A product's function means its purpose. The target audience means the person or group of people a product is designed for. Architects consider light, shadow and patterns when designing	There are different ways to reinforce structures. Triangles can be used to reinforce bridges. Properties are words that describe the form and function of materials. Material selection is important based on their properties. To understand the material (functional and aesthetic) properties of wood. Arch, beam, truss and suspension are different types of bridges. bridges	Structures can be strengthened by manipulating materials and shapes. A 'footprint plan' is the floor space taken up by a design. In the real world, design , can impact users in positive and negative ways. A prototype is a cheap model to test a design idea	**Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**

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		The main parts of a windmill are the turbine, axle and structure							
Mechanisms	In Design and technology we call a plan a 'design'. Mechanisms are objects made of different parts. Whells have to be round to roatte and move. Rotate means to turn. Some real life itesm use wheels.	A mechanism is the parts of an object that move together. A slider mechanism moves an object from side to side. A slider mechanism has a slider, slots , guides and an object. Bridges and guides are bits of card that purposefully restrict the movement of the slider. In Design and technology we call a plan a 'design'. Wheels need to be round to rotate and move. For a wheel to move it must be attached to a rotating axle. An axle moves within an axle holder which is fixed. The frame of a vehicle (chassis) needs to be balanced. Many real-life items that use wheels such as wheelbarrows, hamster wheels and vehicles.	Different materials have different properties and are therefore suitable for different uses. A ferris wheel includes the wheel, frame, pods, a base an axle and an axle holder. It is important to test my design as I go along so that I can solve any problems that may occur. Mechanisms are a collection of moving parts that work together as a machine to produce movement. There is always an input and output in a mechanism. An input is the energy that is used to start something working. An output is the movement that happens as a result of the input. A lever is something that turns on a pivot. A linkage mechanism is made up of a series of levers. Some real-life objects that contain mechanisms.	**Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.**	Pneumatic systems can be used as part of a mechanism. Pneumatic systems operate by drawing in, releasing and compressing air. There is always an input and output in a mechanism. An input is the energy that is used to start something working. An output is the movement that happens as a result of the input. Sketches, drawings and diagrams can be used to communicate design ideas. Exploded-diagrams are used to show how different parts of a product fit together. Thumbnail sketches are small drawings to get ideas down on paper quickly.	All moving things have kinetic energy. Kinetic energy is the energy that something (object/person) has by being in motion. Air resistance is the level of drag on an object as it is forced through the air. The shape of a moving object will affect how it moves due to air resistance. Products change and evolve over time. Aesthetics means how an object or product looks in design and technology. A template is a stencil you can use to help you draw the same shape accurately. A birds-eye view means a view from a high angle (as if a bird in flight). Graphics are images which are designed to explain or advertise something. It is important to assess and evaluate design ideas and models against a list of design criteria	Mechanisms control movement. Mechanisms can be used to change one kind of motion into another. Sliders, pivots and folds can be used to create paper-based mechanisms. A design brief is a description of what I am going to design and make. Designers often want to hide mechanisms to make a product more aesthetically pleasing.	The mechanism in an automata uses a system of cams, axles and followers. Different shaped cams produce different outputs. An automata is a hand powered mechanical toy. A cross sectional diagram shows the inner workings of a product. A set square can be used to help mark 90° angles.	**Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]**

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Electrical	n/a	n/a	n/a	n/a	An electrical system is a group of parts (components) that work together to transport electricity around a circuit. Common features of an electric product : switch, battery or plug, dials, buttons etc. Common electric products : kettle, remote control etc.). An electric product uses an electrical system to work (function). A bulb, battery, battery holder and crocodile wire can be used to build simple circuits. Material choices (such as mounting paper to corrugated card) can improve a product to serve its purpose (remain rigid without bending).	Electrical conductors are materials which electricity can pass through. Electrical insulators are materials which electricity cannot pass through. A battery contains stored electricity that can be used to power products. An electrical circuit must be complete for electricity to flow. A switch can be used to complete and break an electrical circuit Sir Joseph Swan and Thomas Edison invented the light bulb.	Series circuits only have one direction for the electricity to flow. When there is a break in a series circuit, all components turn off. An electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. A motorised product is one which uses a motor to function. Product analysis is critiquing the strengths and weaknesses of a product. The 'configuration' means how the parts of a product are arranged.	Batteries contain acid, which can be dangerous if they leak. 'Form' means the shape and appearance of an object. 'Fit for purpose' means that a product works how it should and is easy to use. Form over purpose means that a product looks good but does not work very well. 'Form follows function' when designing , means the product must be designed primarily with the function in mind. Different diagram perspectives are'top view', 'side view' and 'back	**Understand and use electrical systems in their products [for example, series circuits**
Cooking Nutrition	Begin to understand some food preparation tools, techniques and processes. Practice stirring, mixing, puring blending. Discuss how to make an activity safe and hygienic. Discuss use of senses	Some foods typically known as vegetables are actually fruits (e.g. cucumber). A blender is a machine which mixes ingredients together into a smooth liquid. A fruit has seeds and a vegetable does not. Fruits grow on trees or vines. Vegetables	'Diet' means the food and drink that a person or animal usually eats. We can find the nutritional information on packaging. The five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and	**Use the basic principles of a healthy and varied diet to prepare dishes.** **Understand where food comes from.**	Not all fruits and vegetables can be grown in the UK. Climate affects food growth. Cooking instructions are known as a 'recipe'. Fruit and vegetables give us nutritional benefits because they contain vitamins, minerals and fibre.	The amount of an ingredient in a recipe is known as the 'quantity.' It is important to use oven gloves when removing hot food from an oven. Sieving, creaming, rubbing method, cooling are all cooking techniques.	Beef is from cattle and how beef is reared and processed, including key welfare issues. I can adapt a recipe to make it healthier by substituting ingredients. I can use a nutritional calculator to see how healthy a food option is.	'Flavour' is how a food or drink tastes. Many countries have 'national dishes' which are recipes associated with that country. 'Processed food' means food that has been put through multiple changes in a factory. It is important to wash fruit and vegetables	**Understand and apply the principles of a healthy and varied diet** **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.** **Understand seasonality, and**

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	Understand the need for a variety in food. Begin to understand that eating well contributes to good health. Vegetables are grown. Different vegetables taste different. Eating fruit and vegetables is good for us. Different packages are used for different foods.	can grow either above or below ground. Vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).	foods high in fat and sugar. I should eat a range of different foods from each food group. Nutrients are substances in food that all living things need to make energy, grow and develop. 'Ingredients' means the items in a mixture or recipe. I should only have a maximum of five teaspoons of sugar a day to stay healthy. Many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.		Vitamins, minerals and fibre are important for energy, growth and maintaining health. Similar coloured fruits and vegetables often have similar nutritional benefits.	It is important to budget while planning ingredients Vegetables and fruit grow in certain seasons.	'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. Imported food is food which has been brought into the country. Exported food is food which has been sent to another country.	before eating to remove any dirt and insecticides. Imported foods travel from far away and this can negatively impact the environment.	**know where and how a variety of ingredients are grown, reared, caught and processed.**
Textiles	A design is a way of planning our idea before we start. Threading is putting one material through an object. Fabric can be joined in different ways. Glue, staples, pins can be uswed to join fabric.	'Joining technique' means connecting two pieces of material together. There are various temporary methods of joining fabric by using staples. glue or pins. Different techniques for joining materials can be used for different purposes. A template (or fabric pattern) is used to cut out the same shape multiple times. Drawing a design idea is useful to see how an idea will look.	Sewing is a method of joining fabric. Different stitches can be used when sewing. We tie a knot after sewing the final stitch.	n/a	Applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. When two edges of fabric have been joined together it is called a seam. It is important to leave space on the fabric for the seam. Some products are turned inside out after sewing so the stitching is hidden.	A fastening is something which holds two pieces of material together (zipper, toggle, button, press stud and Velcro) Different fastening types are useful for different purposes. Creating a mock up (prototype) of their design is useful for checking ideas and proportions	Blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. It is easier to finish simpler designs to a high standard. Small, neat stitches which are pulled taut are important.	It is important to design with the client/ target customer in mind. Using a template /pattern helps to accurately mark out a design on fabric. It is important to keep stitches a consistent size.	

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Digital World	n/a	n/a	n/a	n/a	In programming, a 'loop' is code that repeats something again and again until stopped. A Micro:bit is a pocket-sized, codeable computer. In Design and technology the term 'smart' means a programmed product. Difference between analogue and digital technologies. 'Point of sale display.' CAD stands for 'Computer-aided design	To understand what variables are in programming. To know some of the features of a Micro:bit. An algorithm is a set of instructions to be followed by the computer. It is important to check my code for errors (bugs). A simulator can be used as a way of checking your code works before installing it onto an electronic device. 'Ergonomic' is about form and function and 'aesthetic' is about looking pleasing. 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.	A 'device' means equipment created for a certain purpose. Monitoring devices observe and record. A sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose. Conditional statements: (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met. Plastic has developed over the last 100 years. The use of plastic is changing and evolving. A virtual model is and the pros and cons of traditional vs CAD modelling.	Sensors can be useful in products as they mean the product can function without human input. Designers write design briefs and develop design criteria to enable them to fulfil a client's request. 'Multifunctional' means an object or product has more than one function.	**Apply their understanding of computing to program, monitor and control their products**

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