

Knowledge progression

	EYFS	Year 1	Year 2	Lower KS2	Upper KS2
Staying safe	<p>Know how to use scissors safely.</p> <p>Know to wash hands before touching or eating food.</p>	<p>Know what a rule is.</p> <p>Know what instructions are.</p>	<p>Know how to use a hacksaw safely.</p> <p>Knowing to clean surfaces, tie hair up, wipe spillages and storing food properly is important for safety.</p>	<p>Know the basic safety rules of electricity: no water, no fingers in plug sockets, pulling a plug out by the cord.</p> <p>Know what chemicals are.</p> <p>Know what the hazardous symbols are.</p>	<p>Know and research how the safety of a user has been considered in every design.</p>
Mechanisms and Movement	<p>Know what movement is and that wheels help some things to move.</p>	<p>Know that an axle is a rod that passes through the centre of a wheel to connect two wheels.</p>	<p>Know what a force is.</p> <p>Know that mechanisms are devices that take one force and turn it into another.</p>	<p>Know that levers reduce the amount of work needed to lift a heavy object.</p>	<p>Know what pneumatic systems are.</p> <p>Know what mechanical systems are.</p>
Electricity	<p>Know which common appliances require electricity.</p>	<p>Know that electricity is a form of energy.</p> <p>Know that electricity can be turned on or off.</p>	<p>Know what a series circuit is, and that this cannot be broken for it to work.</p>	<p>Know that electric circuits can be controlled using a switch.</p> <p>Know that components like bulbs, buzzers and motors can be added to circuits.</p>	<p>Know that computer programmes can control electrical circuits.</p>
Generation of ideas, comparing and Evaluating	<p>Know how to use a template to design or make something.</p>	<p>Know what a mock-up is and how to use these to inform ideas.</p> <p>Know how to give justified opinions on existing products.</p>	<p>Know what a design criteria is and use this to inform designs.</p> <p>Know what evaluate means.</p>	<p>Know that a prototype is a mock up of a final design but may have some differences.</p> <p>Know how to research existing products.</p>	<p>Know what alternations are and how these are essential to the design process.</p>
Structures	<p>Know how to build things that represent real life objects through a variety of mediums (lego, lollipop sticks etc)</p>	<p>Know what a structure is.</p>	<p>.Know that a broader base will make a structure more stable.</p>	<p>Know what a shell structure and frame structure are.</p> <p>Know that diagonal struts can make structures more stable.</p>	<p>Know that structures can be made more stable through multiple layers.</p> <p>Know that triangular shapes are more rigid than squares.</p>

Use of ICT	Know how to share information with others using devices.	Know that computer-aided design is where computers help us design products.	Know what software means. Know the advantages and disadvantages of using computer software to design.	Know what a programme is. Know what a remote control is.	Know what computer monitoring is.
Materials and textiles	Know the names of some everyday materials: cardboard, paper, glass, plastic, wood.	Know how to describe different materials, using the words strong, thick, thin, weak, soft, hard, transparent.	Know what properties are of materials. Know how to do a running stitch.	Know how to weave using a loom. Know what a hem is and how to create one. Know that an embellishment is a decoration on materials.	Know how to pin and tack materials. Know what a collage is and how to create one. Know that applique is where material is attached to another piece of material.
Food and Nutrition	Know what a recipe is. Know and name some healthy (like fruit and vegetables) and unhealthy (like chocolate and sweets) foods. Know that some foods come from animals and plants.	Know that it is recommended to eat at least 5 pieces of fruit or vegetables a day.	Know what is meant by the term 'balanced diet' and know a healthy diet should include meat or fish, starchy foods (such as potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables.	Know the five main food groups. Know foods high in fat, salt or sugar should only be eaten occasionally. Know that where a specific food grows depends on its environment. Know the difference between healthy and unhealthy choices.	Know what seasonality is. Know what carbon footprint is. Know what nutrients are. Know the right proportions of each type of food group.

Aspect	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Everyday products	Nursery Everyday products, such as cups, plates and spoons are designed to help us. Reception Everyday products are objects that we use	Everyday products are objects that are used routinely at home and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose.	Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive.	Particular products have been designed for specific tasks, such as nail clippers, the spinning top and the cool box.	Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the	Culture is the language, inventions, ideas and art of a group of people. A society is all the people in a community or group. Culture affects the design of some products. For example, knives and forks are used in the western world, whereas chopsticks are used	People's lives have been improved in countless ways due to new inventions and designs. For example, the Morrison shelter, designed by John Baker in 1941, was an indoor air-raid shelter used in

	every day. These objects have a specific use.				product easier to use or more durable.	mainly in China and Japan. The design of products needs to take into account the culture of the target audience. For example, colours might mean very different things in different cultures.	over half a million homes during the Second World War. It saved the lives of many people caught in bombing raids.
Staying safe	<p>Nursery</p> <p>It is important to listen to adults and follow simple rules and procedures when using equipment and tools.</p> <p>Reception</p> <p>Rules keep us safe when using equipment. Safety rules include always listening carefully and following simple instructions, using equipment only for the tasks they are designed for and washing hands before touching food.</p>	<p>Rules are made to keep people safe from danger. Safety rules include always listening carefully and following instructions, using equipment only as and when directed, wearing protective clothing if appropriate and washing hands before touching food.</p>	<p>Hygiene rules include washing hands before handling food, cleaning surfaces, tying long hair back, storing food appropriately and wiping up spills.</p>	<p>Electrical appliances must only be used under the supervision of an adult. Safety rules must also be followed when using electricity: fingers and other objects must not be put into electrical outlets, anything with a cord or plug should never be used around water and a plug should never be pulled out by its cord.</p>	<p>Chemicals are used in the home every day. They include cleaning products, such as bleach and disinfectant, but also paints, glues, oils, pesticides and medicines. Most chemical products carry a hazard symbol showing in what way the chemical could be harmful. Chemicals should only be used under adult supervision.</p> <p>Appropriate safety precautions, such as wearing goggles and gloves, working in a well-ventilated room, wiping up spills and tying back long hair, should be taken.</p>	<p>Safety features are often incorporated into products that might cause harm. Some examples include the child-safety caps on medicine bottles, seatbelts in cars, covers for electrical sockets and finger guards on doors.</p>	<p>The safety of the user has to be taken into account when designing a new product. Methods to help keep users safe include providing clear instructions for use; clear indication of the age range for which it is designed; safety features (such as child-resistant packaging); warning symbols and electrical safety checks.</p>
Mechanisms and movement	<p>Nursery</p> <p>Vehicles and ride-on toys have wheels to help them move.</p> <p>Reception</p>	<p>An axle is a rod or spindle that passes through the centre of a wheel to connect two wheels.</p>	<p>A mechanism is a device that takes one type of motion or force and produces a different one. A mechanism makes a job easier to do. Mechanisms include</p>	<p>Lever consists of a rigid bar that rotates around a fixed point, called a fulcrum. They reduce the amount of work needed to lift a heavy object. Sliders move from side to side or up and down, and</p>	<p>Mechanisms can be used to add functionality to a model. For example, sliders or levers can be used in moving pictures, storybooks or simple puppets;</p>	<p>Pneumatic systems use energy that is stored in compressed air to do work, such as inflating a balloon to open a model monster's mouth. These effects can be achieved using syringes and plastic tubing.</p>	<p>Mechanical systems can include sliders, levers, linkages, gears, pulleys and cams. Other mechanisms include pneumatics and hydraulics.</p>

	Vehicles and machines have wheels and axles to help them move.		sliders, levers, linkages, gears, pulleys and cams.	are often used to make moving parts in books. Axles are shafts on which wheels can rotate to make a moving vehicle. Cams are devices that can convert circular motion into up-and-down motion.	linkages in moving vehicles or puppets; gears in motorised vehicles or spinning toys; pulleys in cable cars or transport systems and cams in 3-D moving toys or pictures.		
Electricity	<p>Nursery Batteries power some objects. A switch turns them off and on.</p> <p>Reception Many appliances at home and school need electricity to work. The appliances need to be attached to electricity through a plug and socket, or use batteries.</p>	Electricity is a form of energy. Many household appliances use electricity, such as kettles, televisions and washing machines. They can be switched on by completing the circuit to allow the flow of electricity or off by breaking the circuit to prevent electricity from flowing. This can be a switch on the appliance or a wall socket switch.	A series circuit is made up of an energy source, such as a battery or cell, wires and a bulb. The circuit must be complete for the electricity to flow.	An electric circuit can be used in a model, such as a lighthouse. It can be controlled using a switch.	Components can be added to circuits to achieve a particular goal. These include bulbs for lighthouses and torches, buzzers for burglar alarms and electronic games, motors for fairground rides and motorised vehicles and switches for lights and televisions.	Electrical circuits can be controlled by a simple on/off switch, or by a variable resistor that can adjust the size of the current in the circuit. Real-life examples are a dimmer switch for lights or volume control on a stereo.	Computer programs can control electrical circuits that include a variety of components, such as switches, lamps, buzzers and motors.
Generation of ideas		Design criteria are the explicit goals that a project must achieve.	Ideas can be communicated in a variety of ways, including written work, drawings and diagrams, modelling, speaking and using information and communication technology.	Design criteria are the exact goals a project must achieve to be successful. These criteria might include the product's use, appearance, cost and target user.	Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.	A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products.	Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Structures	<p>Nursery</p> <p>Different materials can be used for construction. They have different properties.</p> <p>Reception</p> <p>Different materials have different properties and can be used for different purposes.</p>	<p>Different materials can be used for different purposes, depending on their properties. For example, cardboard is a stronger building material than paper. Plastic is light and can float. Clay is heavy and will sink.</p>	<p>Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable.</p>	<p>Shell structures are hollow, 3-D structures with a thin outer covering, such as a box. Frame structures are made from thin, rigid components, such as a tent frame. The rigid frame gives the structure shape and support. Diagonal struts can strengthen the structure.</p>	<p>A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them).</p>	<p>Various methods can be used to support a framework. These include cross braces, guy ropes and diagonal struts. Frameworks can be built using lolly sticks, skewers and bamboo canes.</p>	<p>Strength can be added to a framework by using multiple layers. For example, corrugated cardboard can be placed with corrugations running alternately vertically and horizontally. Triangular shapes can be used instead of square shapes because they are more rigid. Frameworks can be further strengthened by adding an outer cover.</p>
Use of ICT	<p>Digital devices can be used to share information about creations with others.</p>	<p>Computer-aided design is when computers are used to help design products. It has advantages over paper design in that it will show how finished products will look. Different colours and textures can also be trialled.</p>	<p>Computer software can be used to help design or plan a product. Advantages include identifying and solving problems before the product is made and experimenting with different materials and colours. Labels can be added to designs for clarity.</p>	<p>A program is a set of instructions written to perform a specified task on a computer.</p>	<p>Remote control is controlling a machine or activity from a distance. Computers can be used to remotely control a device, such as a light, speaker or buzzer.</p>	<p>Equipment and devices can be controlled by pressing buttons on a control panel, such as on a washing machine or microwave.</p>	<p>Computer monitoring uses sensors as a scientific tool to record information about environmental changes over time. Computer monitoring can also log data from sensors and record the resulting information in a table or graph.</p>
Investigation	<p>Nursery</p> <p>Tools have different purposes. For example, scissors are used for cutting and glue is used for sticking.</p>	<p>Specific tools are used for particular purposes. For example, scissors are used for cutting and</p>	<p>Different tools have characteristics that make them suitable for specific purposes. For example, scissors are used for cutting paper</p>	<p>Specific tools can be used for cutting, such as saws. Wood can be joined using glue, nails, staples, or a combination of these. Safety rules must be</p>	<p>Useful tools for cutting include scissors, craft knives, junior hacksaws with pistol grip and bench hooks. Useful tools for joining</p>	<p>There are many rules for using tools safely and these may vary depending on the tools being used. For example, someone using a chisel should chip or cut with the cutting</p>	<p>Precision is important in producing a polished, finished product. Correct selection of tools and careful measurement can ensure the parts fit</p>

	<p>Reception</p> <p>Different tools are needed for different tasks. For example, pencils and paper are needed for drawing pictures.</p>	<p>glue is used for sticking.</p>	<p>because they have sharp, metal blades that can cut through thin materials.</p>	<p>followed to prevent injury from sharp blades. These rules include using a bench hook to keep the wood still, using a junior hacksaw with a pistol grip and working under adult supervision.</p>	<p>include glue guns. Tools should only be used with adult supervision and safety rules must be followed.</p>	<p>edge pointing away from their body. All tools should be cleaned and put away after use, and should not be used if they are loose or cracked.</p>	<p>together correctly.</p>
Evaluation	<p>Nursery</p> <p>Different aspects of designing and making can be discussed with others.</p> <p>Reception</p> <p>Recognise that it is possible to change and alter their designs and ideas as they are making them.</p>	<p>A strength is a good quality of a piece of work. A weakness is an area that could be improved.</p>	<p>Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.</p>	<p>Asking questions can help others to evaluate their products, such as asking them whether the selected materials achieved the purpose of the model.</p>	<p>Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.</p>	<p>Testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to a design during manufacture.</p>	<p>Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.</p>
Cutting and joining textiles		<p>Scissors are used to cut fabrics. Glue and simple stitches, such as running stitch, can be used to join fabrics. Running stitch is made by passing a needle in and out of fabric at an even distance.</p>	<p>A running stitch is a basic stitch that is used to join fabric. It is made by passing a needle in and out of fabric at an even distance.</p>	<p>A loom is a piece of equipment that is used for making fabric by weaving wool or thread. Weaving involves interlacing pieces of thread or yarn.</p>	<p>A hem runs along the edge of a piece of cloth or clothing. It is made by turning under a raw edge and sewing to give a neat and quality finish.</p>	<p>A collage is artwork made by sticking materials, such as scraps of paper or fabric, onto a background. A mixed media collage is made using various materials and media, such as ink and paint.</p>	<p>Pinning with dressmaker pins and tacking with quick, temporary stitches holds fabric together in preparation for and during sewing.</p>
Materials for purpose	<p>Different materials are suitable for different purposes, such as construction kits for modelling and ingredients for baking.</p>	<p>Different materials are suitable for different purposes, depending on their specific properties. For example, glass is</p>	<p>Properties of components and materials determine how they can and cannot be used. For example, plastic is shiny</p>	<p>Materials for a specific task must be selected on the basis of their properties. These include physical properties as well as availability and cost.</p>	<p>Different materials and components have a range of properties, making them suitable for different tasks. It is important to select</p>	<p>Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching</p>	<p>It is important to understand the characteristics of different materials to select the most appropriate material for</p>

		transparent, so it is suitable to be used for windows.	and strong but it can be difficult to paint.		the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.	techniques.	a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.
Decorating and embellishing textiles		Fabric can be decorated using materials and small objects, such as buttons and sequins. Decorations can be attached to the fabric by gluing, stapling or tying.	Embellishment is a decorative detail or feature added to something to make it more attractive.	A loom weaving is a piece of fabric that has been woven on a loom by interlacing threads. An embellishment is a decorative detail or feature, such as a silk flower, tassel or bow, added to something to make it more attractive.	Block printing techniques and fabric paint are used to create decorative, repeated patterns on fabrics.	Applique is a technique where pieces of material are attached to another material by stitching or gluing.	Fastenings hold a piece of clothing together. Types of fastenings include zips, press studs, Velcro and buttons.
Food preparation and cooking	A recipe is set of instructions for preparing a dish and includes a list of the ingredients required.	Using non-standard measures is a way of measuring that does not involve reading scales. For example, weight may be measured using a balance scale and lumps of plasticine. Length may be measured in the number of handspans or pencils laid end to end.	Some ingredients need to be prepared before they can be cooked or eaten. There are many ways to prepare ingredients: peeling skins using a vegetable peeler, such as potato skins; grating hard ingredients, such as cheese or chocolate; chopping vegetables, such as onions and peppers and slicing foods, such as bread and apples.	Preparation techniques for savoury dishes include peeling, chopping, deseeding, slicing, dicing, grating, mixing and skinning.	Cooking techniques include baking, boiling, frying, grilling and roasting.	Sweet dishes are usually desserts, such as cakes, fruit pies and trifles. Savoury dishes usually have a salty or spicy flavour rather than a sweet one.	Ingredients can usually be bought at supermarkets, but specialist shops may stock different items. Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual prepared foods, as well as cold meats and cheeses.
Nutrition	Nursery Some foods are healthy. These include fruits,	Fruit and vegetables are an important part of a healthy diet. It is	A healthy diet should include meat or fish, starchy foods (such as	There are five main food groups that should be eaten regularly as part of	Healthy snacks include fresh or dried fruit and vegetables, nuts and	A balanced diet gives your body all the nutrients it needs to function correctly. This	Eating a balanced diet is a positive lifestyle choice that should be sustained

	<p>vegetables, nuts and seeds.</p> <p>Reception</p> <p>There are healthy and unhealthy foods. Fruit and vegetables are an important part of a healthy diet.</p>	<p>recommended that people eat at least five portions of fruit and vegetables every day.</p>	<p>potatoes or rice), some dairy foods, a small amount of fat and plenty of fruit and vegetables.</p>	<p>a balanced diet: fruit and vegetables; carbohydrates (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads). Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet.</p>	<p>seeds, rice cakes with low-fat cream cheese, homemade popcorn or chopped vegetables with hummus. A healthy packed lunch might include a brown or wholemeal bread sandwich containing eggs, meat, fish or cheese, a piece of fresh fruit, a low-sugar yoghurt, rice cake or popcorn and a drink, such as water or semi-skimmed milk.</p>	<p>means eating a wide variety of foods in the correct proportions.</p>	<p>over time. Food that is high in fat, salt or sugar can still be eaten occasionally as part of a balanced diet.</p>
Origins of food	<p>Nursery</p> <p>Food can come from plants or animals.</p> <p>Reception</p> <p>Food comes from different sources, including from animals, such as meat, fish, eggs and dairy, or from plants, such as fruit and vegetables.</p>	<p>Some foods come from animals, such as meat, fish and dairy products. Other foods come from plants, such as fruit, vegetables, grains, beans and nuts.</p>	<p>Food comes from two main sources: animals and plants. Cows provide beef, sheep provide lamb and mutton and pigs provide pork, ham and bacon. Examples of poultry include chickens, geese and turkeys. Examples of fish include cod, salmon and shellfish. Milk comes mainly from cows but also from goats and sheep. Most eggs come from chickens. Honey is made by bees. Fruit and vegetables come from plants. Oils are made from parts of plants. Sugar is made from plants called sugar cane</p>	<p>The types of food that will grow in a particular area depend on a range of factors, such as the rainfall, climate and soil type. For example, many crops, such as potatoes and sugar beet, are grown in the south-east of England. Wheat, barley and vegetables grow well in the east of England.</p>	<p>Particular areas of the world have conditions suited to growing certain crops, such as coffee in Peru and citrus fruits in California in the United States of America.</p>	<p>Seasonality is the time of year when the harvest or flavour of a type of food is at its best. Buying seasonal food is beneficial for many reasons: the food tastes better; it is fresher because it hasn't been transported thousands of miles; the nutritional value is higher; the carbon footprint is lower, due to reduced transport; it supports local growers and is usually cheaper.</p>	<p>Organic produce is food that has been grown without the use of man-made fertilisers, pesticides, growth regulators or animal feed additives. Organic farmers use crop rotation, animal and plant manures, hand-weeding and biological pest control.</p>

			and sugar beet. Plants also give us nuts, such as almonds, walnuts and hazelnuts.				
Compare and contrast	Aspects of designing and making can be compared with others, including inspiration for making a product and the tools and techniques used.	Two products can be compared by looking at a set of criteria and scoring both products against each one.	Products can be compared by looking at particular characteristics of each and deciding which is better suited to the purpose.	Work from different designers can be compared by assessing specific criteria, such as their visual impact, fitness for purpose and target market.	A comparison table can be used to compare products by listing specific criteria on which each product can be judged or scored.	A focus group is a small group of people whose reactions and opinions about a product are taken and studied. Evaluations can be made by asking product users a selection of questions to obtain data on how the product has met its design criteria.	Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money.
Significant people	Nursery Important products are those that help people. Reception Some products are significant because they have changed the way people live their lives.	The importance of a product may be that it fulfils its goals and performs a useful purpose.	Many key individuals have helped to shape the world. These include engineers, scientists, designers, inventors and many other people in important roles.	Key inventions in design and technology have changed the way people live.	Significant designers and inventors can shape the world.	Many new designs and inventions influenced society. For example, labour-saving devices in the home reduced the amount of housework, which was traditionally done by women. This enabled them to have jobs.	The significance of a designer or inventor can be measured in various ways. Their work may benefit society in health, transport, communication, education, the built environment or technology. It may enhance culture in different areas, such as fashion, ceramics or computer games.

Skills progression

Aspect	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Everyday products	Nursery Name and explore a range of everyday	Name and explore a range of everyday	Explain how an everyday product could be improved.	Explain how an existing product benefits the user.	Investigate and identify the design	Explain how the design of a product has been influenced by the culture or society in	Analyse how an invention or product has significantly changed or

	products and explore how things work. Reception Name and explore a range of everyday products and begin to talk about how they are used.	products and describe how they are used.			features of a familiar product.	which it was designed or made.	improved people's lives.
Staying safe	Nursery Show an understanding that tools and equipment need to be used safely and collaborate with others when moving large equipment. Reception Follow rules and instructions to keep safe.	Follow the rules to keep safe during a practical task.	Work safely and hygienically in construction and cooking activities.	Use appliances safely with adult supervision.	Work safely with everyday chemical products under supervision, such as disinfectant hand wash and surface cleaning spray.	Explain the functionality and purpose of safety features on a range of products.	Demonstrate how their products take into account the safety of the user.
Mechanisms and movement	Nursery Explore, build and play with a range of resources and construction kits with wheels. Reception Explore, build and play with a range of resources and construction kits with wheels and axles.	Use wheels and axles to make a simple moving model.	Use a range of mechanisms (levers, sliders, wheels and axles) in models or products.	Explore and use a range of mechanisms (levers, sliders, axles, wheels and cams) in models or products.	Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products.	Use mechanical systems in their products, such as pneumatics.	Explain and use mechanical systems in their products to meet a design brief.
Electricity	Nursery Explore battery-powered objects using switches to turn them off and on. Reception	Identify products that use electricity to make them work and describe how to switch them on and off.	Create an operational, simple series circuit.	Incorporate a simple series circuit into a model.	Incorporate circuits that use a variety of components into models or products.	Use electrical circuits of increasing complexity in their models or products, showing an understanding of control.	Understand and use electrical circuits that incorporate a variety of components (switches, lamps, buzzers and motors) and use programming to control their products.

	Identify products that use electricity to make them work.						
Generation of ideas	<p>Nursery Develop their own ideas and explore a variety of resources, including blocks and construction kits to create 'small worlds' and objects linked to their interests.</p> <p>Reception Create collaboratively, share ideas and use a variety of resources to make products inspired by existing products, stories or their own ideas, interests or experiences.</p>	Create a design to meet simple design criteria.	Generate and communicate their ideas through a range of different methods.	Develop design criteria to inform a design.	Use annotated sketches and exploded diagrams to test and communicate their ideas.	Use pattern pieces and computer-aided design packages to design a product.	Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.
Structures	<p>Nursery Make simple structures using a range of materials.</p> <p>Reception Construct simple structures and models using a range of materials.</p>	Construct simple structures, models or other products using a range of materials.	Explore how a structure can be made stronger, stiffer and more stable.	Create shell or frame structures using diagonal struts to strengthen them.	Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them.	Build a framework using a range of materials to support mechanisms.	Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.
Use of ICT	<p>Nursery Seek support from adults to use digital devices to create a digital record of their creations.</p> <p>Reception Use digital devices to take digital images or recordings of their</p>	Use design software to create a simple plan for a design.	Use design software to create a simple labelled design or plan.	Write a program to make something move on a tablet or computer screen.	Write a program to control a physical device, such as a light, speaker or buzzer.	Link a physical device to a computer or tablet so that it can be controlled (such as changing motor speed or turning an LED on and off) by a program.	Use a sensor to monitor an environmental variable, such as temperature, sound or light.

	creations to share with others.						
Investigation	<p>Nursery</p> <p>Explore simple tools within practical tasks and experiment with joining materials.</p> <p>Reception</p> <p>Choose and explore appropriate tools for simple practical tasks.</p>	Select the appropriate tool for a simple practical task.	Select the appropriate tool for a task and explain their choice.	Use tools safely for cutting and joining materials and components.	Select, name and use tools with adult supervision.	Name and select increasingly appropriate tools for a task and use them safely.	Select appropriate tools for a task and use them safely and precisely.
Evaluation	<p>Nursery</p> <p>Share their creations with others and respond to questions and suggestions about how it was made.</p> <p>Reception</p> <p>Adapt and refine their work as they are constructing and making.</p>	Talk about their own and each other's work, identifying strengths or weaknesses and offering support.	Explain how closely their finished products meet their design criteria and say what they could do better in the future.	Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.	Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.	Test and evaluate products against a detailed design specification and make adaptations as they develop the product.	Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.
Cutting and joining textiles		Cut and join textiles using glue and simple stitches.	Use different methods of joining fabrics, including glue and running stitch.	Cut and join wools, threads and other materials to a loom.	Hand sew a hem or seam using a running stitch.	Combine stitches and fabrics with imagination to create a mixed media collage.	Pin and tack fabrics in preparation for sewing and more complex pattern work
Materials for purpose	<p>Nursery</p> <p>Explore and choose freely from a variety of materials when making.</p> <p>Reception</p> <p>Select appropriate materials when constructing and making.</p>	Select and use a range of materials, beginning to explain their choices.	Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect.	Plan which materials will be needed for a task and explain why.	Choose from a range of materials, showing an understanding of their different characteristics.	Select and combine materials with precision.	Choose the best materials for a task, showing an understanding of their working characteristics.
Decorating and		Use gluing, stapling or tying to decorate fabric, including buttons and sequins.	Add simple decorative embellishments, such as buttons, prints, sequins and appliqué.	Decorate a loom weaving using embellishments, such as natural or silk flowers, tassels and bows.	Create detailed decorative patterns on fabric using printing techniques.	Use applique to add decoration to a product or artwork.	Use different methods of fastening for function and decoration, including press studs,

embellish ng textiles							Velcro and buttons.
Food preparation and cooking	Follow instructions, including simple recipes, that include measures and ingredients.	Measure and weigh food items using non-standard measures, such as spoons and cups.	Prepare ingredients by peeling, grating, chopping and slicing.	Prepare and cook a simple savoury dish.	Identify and use a range of cooking techniques to prepare a simple meal or snack.	Use an increasing range of preparation and cooking techniques to cook a sweet or savoury dish.	Follow a recipe that requires a variety of techniques and source the necessary ingredients independently.
Nutrition	Nursery Help to prepare a range of healthy snacks. Reception Suggest healthy ingredients that can be used to make simple snacks.	Select healthy ingredients for a fruit or vegetable salad.	Describe the types of food needed for a healthy and varied diet and apply the principles to make a simple, healthy meal.	Identify the main food groups (carbohydrates, protein, dairy, fruits and vegetables, fats and sugars)	Design a healthy snack or packed lunch and explain why it is healthy.	Evaluate meals and consider if they contribute towards a balanced diet.	Plan a healthy daily diet, justifying why each meal contributes towards a balanced diet.
Origins of food	Nursery Explore and try a range of foods and suggest where they come from. Reception Begin to identify the origins of some foods.	Sort foods into groups by whether they are from an animal or plant source.	Identify the origin of some common foods (milk, eggs, some meats, common fruit and vegetables).	Identify and name foods that are produced in different places.	Identify and name foods that are produced in different places in the UK and beyond.	Describe what seasonality means and explain some of the reasons why it is beneficial.	Explain how organic produce is grown.
Compare and contrast	Nursery Share their creations with others and begin to notice how the work of others is the same or different to their own. Reception Describe what, why and how something was made and compare with others.	Describe the similarities and differences between two products.	Compare different or the same products from the same or different brands.	Explain the similarities and difference between the work of two designers.	Create and complete a comparison table to compare two or more products.	Survey users in a range of focus groups and compare results.	Create a detailed comparative report about two or more products or inventions.
Significant people	Nursery Begin to talk about important products. Reception Explore significant products	Describe why a product is important.	Explain why a designer or inventor is important.	Describe how key events in design and technology have shaped the world.	Explain how and why a significant designer or inventor shaped the world.	Describe the social influence of a significant designer or inventor.	Present a detailed account of the significance of a favourite designer or inventor.

Vocabulary progression

Tier	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
1	Instructions Rules Tools Batteries Switch Plug Cut Stick Healthy Unhealthy Construction Like Dislike	Pattern Join Decorate Needle Sew Fold Weak/Strong Design Cutting Joining Peeling (food)	Dye Masking Tape Fastener Purpose Corner Point Straight/Curved Diagram Stiff Stable Scientist	Fastening Function Woven Knitted Insulator Conductor System Input Shell Net Stiff Safety Rotate Vehicle Loom	Input Output Ribbing Laminating Edible Seasonal Harvested Embroidery Chemicals Hem Printing Repeated patterns Crops Comparisons Disinfectant	Design Criteria Hem Tie dye Flowchart Pulley Gear Driver Motor Annotations Nutrients Vitamins Allergies Knead Culture Community Syringes Framework Focus group Collage	Temporary Permanent Chain Stitch Inventor Computer-Aided Design Alteration Organic Functional Tac Vegan Vegetarian Appealing Convince Storage
2	Equipment Vehicles Materials Create Design Ingredients Recipe	Running Stitch Fray Wheel Hacksaw Vice Shaping Skin (food)	Quality Suitable Features Overstitch Lever Slider Slot	Compartment Finishing Technique Back Stitch Bonded Three dimensional Varied Diet	Seam allowance Back stitch Blanket stitch Push-to-make switch Push-to-break switch	Pattern Piece Tacking Rotation Functionality Stability Culture Pneumatic Systems	Applique Intolerance Manufacturing Process Man-made fertilisers Pesticides Growth regulators Animal feed additives

	Use	Slicing (food) Products Circuit Energy Project Strength/weakness	3-D Shape Names Improve Series Circuit Structure Communicate Software Origin Portion	Hygienic Rigid Motion Circular Preparation	Appealing Lose Pivot Fixed Pivot Assemble Vertex Adhesives Corrugating Prototype Function	Variable Resistor Control Panel Seasonality Alternative Limitations Original Presentation	Substitution Preferences Enterprise Cross sectional Justify
3	Axels Appliances Properties Purpose Alter Sources Inspiration Compare	Seam Mock up Axel Dowel Cab Arranging Protective Design criteria Template Assemble	Template Mechanism Pivot Evaluate Structure Flesh (food) Hardwearing Characteristic Embellishment Operational	Savoury Prototype Components Hollow Visual impact Target market Qualities Attractive	Aesthetics Innovative Reciprocating Oscillating Durable Emphasise Precautions	Specification Reinforce Transmit Compressed Precision Carbon Footprint Labour-saving device	Triangulation Authentic Hydraulics Refine Modification Aroma Innovative Sustainable Constraints