

DT Subject Progression Map

Early years curriculum							
<p>I can add detail to my creations, such as using simple tools to add detail, mixing colours or textures and a pattern to movements. I can select and use simple tools and techniques competently and appropriately to shape, assemble and join materials. I can work with others to develop a group narrative within imaginative play, taking on board the ideas of others I can make changes and adapt my creative work to improve and develop it. I can create and develop my own storyline in imaginative play. Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; share their creations, explaining the process they have used; make use of props and materials when role playing characters in narratives and stories. <i>Although these are closely aligned to the themes studied within arts and designs in the National Curriculum, the skills and knowledge needed to support it are interwoven in a range of areas of learning within the EYFS curriculum, such as access to interactive boards and technology in the environment, rather than being taught as a discrete subject.</i></p>							

Strand		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Generating ideas	Learning intension	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.
	Knowledge	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.
Strand		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Making	Learning intension	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.
	Knowledge	Specific tools are used for particular purposes. For example, scissors are used for cutting and glue is used for sticking.	Different tools have characteristics that make them suitable for specific purposes. For example, scissors are used for cutting paper because they have sharp, metal blades that	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 followed to prevent injury from	Useful tools for cutting include scissors, craft knives, junior hacksaws with pistol grip and bench hooks. Useful tools for joining include glue guns. Tools should only be used with adult	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 edge pointing	Precision is important in producing a polished, finished product. Correct selection of tools and careful measurement can ensure the parts fit together correctly.

			can cut through thin materials.	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	supervision and safety rules must be followed.	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.	
Strand		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluation	Learning intension	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.
	Knowledge	A strength is a good quality of a piece of work. A weakness is an area that could be improved.	Finished products can be compared with design criteria to see how closely they match. Improvements can then be planned.	Asking questions can help others to evaluate their products, such as asking them whether the selected materials achieved the purpose of the model.	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.	Testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to a design during manufacture.	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.
Strand		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Sewing	Learning intension		Coastline Understand how simple 3-D textile products are made, using a template to create two identical shapes. -Understand how to join fabrics using different techniques -Explore different finishing techniques.		Traders and Raiders Understand how to securely join two pieces of fabric together. -Understand the need for patterns and seam allowances. -Explore different finishing techniques. -Include an effective fastening in their designs.	Stargazers -Join together different pieces of materials and patterns. -Explore possible fastenings. - To use different stiches to decorate their products.	

	Knowledge		<ul style="list-style-type: none"> -There are three ways to make a template drawing around an object, using tape to cut around or securing material with pins to cut around. -Understand, use and evaluate the following joining techniques stapling, gluing, safety pins, pinning, sewing (over stitch). -Use finishing techniques including painting, fabric crayons, stitching, adding sequins and buttons. 		<ul style="list-style-type: none"> -Use the following stitches to join fabric together: back stitch, over sewing, blanket stitch or running stitch. - A seam allowance is the extra space left outside of the template used to sew the items together. -Use finishing techniques including applique and cross stitch. -Possible fastenings include buttons and Velcro. 	<ul style="list-style-type: none"> - A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. -Possible fastenings include a zip, Velcro, toggle, ties, clasp or press studs. -Stitches can be used to decorate products. These include stem stitch, satin stitch chain stitch and the lazy daisy stitch. 	
	Vocabulary		Join, assemble, Design, embroider, glove puppet, mock-up, sew, seam, template.		Applique, pattern/template, seam and seam allowance, prototype, technique	Specification, tacking, working drawing, clasps/toggles, fastenings,	
	Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mechanics KS1 - Wheels and Axels/ Sliders and levers. LKS2 - levers and linkages. UPKS2 - Pulleys and gears.	Learning intension	Moon Zoom <ul style="list-style-type: none"> - Explore and evaluate a range of products with wheels and axles. - Explore and use wheels, axles and axle holders. - Distinguish between fixed and freely moving axles. 	Christmas Cards <ul style="list-style-type: none"> - Explore and use sliders and levers. -Understand that different mechanisms produce different types of movement. 	Emperors and Empires <ul style="list-style-type: none"> -Understand and use lever and linkage mechanisms. -Distinguish between fixed and loose pivots. 		Ground breaking Greeks <ul style="list-style-type: none"> - Understand that mechanical and electrical systems have an input, process and an output. - Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. 	
	Knowledge	<ul style="list-style-type: none"> - Axle - a rod that enables a wheel to rotate. The wheel can rotate freely on the axle or be fixed to, and turn with, the axle. (fixed and free moving). Axle holder - the component through which an axle fits and rotates. 	<ul style="list-style-type: none"> -A slider is a rigid bar which moves backwards and forwards along a straight line. Unlike a lever, a slider does not have a pivot point. A lever a rigid bar which moves around a pivot. Levers are used in many everyday products. In this project children will use card strips for levers 	<ul style="list-style-type: none"> -A lever is a rigid bar which moves around a pivot (recap from year 2) A lever and linkage mechanisms usually produce oscillating or reciprocating movement. They reduce the amount of work needed to lift a heavy object. Sliders move from side to side or up and down, and are 		<ul style="list-style-type: none"> - A pulley is a grooved wheel over which a drive belt can run. - A gear is a wheel with teeth around its circumference. - Gearing up or down - changing the rotational speed of a product by the use of pulleys or gears. When a small pulley or gear is used to drive a larger one the 	

		<p>Chassis - the frame or base on which a vehicle is built.</p> <p>Friction - resistance which is encountered when two things rub together.</p> <p>Dowel - wooden rods used for making axles to hold wheels.</p> <p>- The different way to attach fixed and free moving axels.</p>	<p>and paper fasteners for pivots.</p> <p>-Simple mechanisms can move in different directions in a straight line, in a straight line forwards and backwards, round and round or in a curve.</p>	<p>often used to make moving parts in books.</p> <p>- A Loose pivot is a paper fastener that joins card strips together. A Fixed pivot is a paper fastener that joins card strips to the backing card.</p>		<p>rotational speed is reduced and the product has been geared down.</p> <p>- A driver is the gear or pulley that provides the input movement to the system.</p> <p>- A follower is the gear or pulley that provides the output movement to the system.</p>	
	Vocabulary	<p>vehicle, wheel, axle, axle holder, chassis, body, assembling, cutting, joining, fixed, free, moving, mechanism</p>	<p>Mechanism, level, slider, slot, guide or bridge, pivot point, direction,</p>	<p>Lever (review), linkage, loose pivot, fixed pivot, system, components, input and output, linear, reciprocating, rotary, oscillating</p>		<p>pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor circuit, switch, circuit diagram annotated drawings, exploded diagrams mechanical system, electrical system, input, process, output</p>	
	Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Electronics	Learning intension				<p>Summer term - STEM week</p> <p>- Understand and use electrical systems in their products.</p> <p>-Understand the need to make secure connections</p> <p>-Apply their understanding of computing to program and control their products.</p>		<p>Summer term - STEM week</p> <p>Apply their understanding of computing to program, monitor and control their products</p>
	Knowledge				<p>-Series circuits can incorporate switches, bulbs and buzzers. 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</p>		<p>- Computer control input is when a switch, such as a micro switch, sends a signal to a computer control box to activate a sequence of events such as a buzzer or light being used to attract attention or alert people.</p> <p>-Computer programs can control electrical circuits</p>

					for fairground rides and motorised vehicles and switches for lights and televisions. -Connections can be made secure by using connecting blocks, twisting strands of wire together, bending wires around the screw of a connection point or using insulating tape.		that include a variety of components, such as switches, lamps, buzzers and motors.
	Vocabulary				Circuit, conductor insulator, prototype, push-to-break switch, push-to-make switch, reed switch, toggle switch, system, output devices, input devices.		computer control software and interface boxes or standalone boxes, connecting leads, input device, output device, system, monitor, control, program
	Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food	Learning intension	<p>Summer term- Linked to sports week</p> <ul style="list-style-type: none"> - Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. - Select from a range of fruit and vegetables according to their characteristics. - Know how to prepare food hygienically. - Understand where fruit and vegetables come from. - Understand basic principles of a healthy and varied diet. 		<p>Scrumdiddliumptious</p> <p>Year 3 or 4</p> <ul style="list-style-type: none"> - Plan the main stages of a recipe, listing ingredients, utensils and equipment. - Make appropriate food products, thinking about sensory characteristics. - Carry out sensory evaluations of a variety of ingredients and products. - Record the evaluations using e.g. tables and simple graphs. - Know how to use appropriate equipment and utensils to prepare and combine food safely. - Identify the different food groups. 		<p>Sow, Grow, Farm</p> <ul style="list-style-type: none"> - Understanding importance of food hygiene, nutrition, healthy eating and a varied diet. - Apply a range of techniques for measuring out, preparing and combining ingredients. - Carry out sensory evaluations of a range of relevant products and ingredients. - Record the evaluations using e.g. tables/graphs/charts such as star diagrams. - Write a step-by-step recipe, including a list of ingredients, equipment and utensils. 	
	Knowledge	Understand what utensils are used for. Understand characteristics of food		Be able to describe appearance, taste, texture and aroma of food for design criteria.		- Know how to use utensils and equipment including heat sources to prepare and cook food.	

		<p>e.g. colour, texture and taste.</p> <p>Know which fruit and veg are grown in the UK and in other countries.</p> <p>Know how fruit and vegetables are part of The Eatwell plate.</p> <p>Understand that we should eat 5 portions of fruit/veg each day.</p>		<p>Know different cutting techniques (claw/bridge)</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught</p> <p>Know what ingredients are needed to make certain foods.</p> <p>Understand the different ways of cooking a meal. i.e. baking, boiling, frying, grilling and roasting.</p> <p>Know there are five main food groups that should be eaten regularly as part of a balanced diet and that foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet.</p>		<p>- Understand about seasonality in relation to food products and the source of different food products.</p>	
	Vocabulary	<p>sensory vocabulary, flesh, skin, seed, pip, core, slicing, peeling, squeezing, healthy diet</p>		<p>hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</p>		<p>fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, whisk, beat.</p>	

Strand		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Structures. KS1 - Free standing structures. LKS2 - Shell structures. UKS2 - Frame structures.	Learning intension	Paws Claws and Whiskers - Know how to make freestanding structures stronger, stiffer and more stable.			Transformations- Packaging - Develop and use knowledge of how to construct strong, stiff shell structures. - Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.		Child's War - Investigate and evaluate a range of existing frame structures. - Understand how to strengthen, stiffen and reinforce 3-D frameworks.
	Knowledge	- Different ways to join materials (glue, blue tac, tape) - As a freestanding structure becomes taller its centre of gravity rises. Stability in a structure can generally be increased by making the base wider, making the base heavier or adding buttresses.			- Which nets make which shapes. - Ways to construct a net. - Laminating - glue together several layers of card. - Corrugating - zig-zag a piece of paper or card and glue in between two layers of card - Ribbing - glue layers of straws between layers of card		- Techniques for building shell structures i.e. One straw creased and inserted/flattened and glued/pipe cleaner/sleeve glued around joint. - Understand Triangulation. - How to join wood frame structures (card triangles, elastic, card strips to make joints)
	Vocabulary	Freestanding structure, frame structure, shell structure, stability, buttress, structure, wall, tower, framework, weak, strong, base, join, underneath, surface, thinner, thicker, corner, point, straight, curved			Edge, face, net, font, scoring, shell structure, three-dimensional (3-D) prism, vertex, length, width, breadth, capacity scoring, shaping, assemble, accuracy, corrugating, ribbing, laminating font, graphics, prototype		- Modelling, diagonal, horizontal, vertical, compression, strut, Tension, tie, triangulation, frame structure, stiffen, strengthen, reinforce, stability.