

Design and Technology Progression Framework

Disciplinary Knowledge

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Ideas & Planning	Know how to explore shapes, colours and patterns to generate design ideas.	Know how to develop design ideas by considering what people like and need through their own experiences.	Know how to generate their own simple design ideas and design criteria.	Know how to create designs which include identifying a purpose and establish criteria for a successful product.	Know how to create designs which include a design brief and design criteria that ensure the design is fit for purpose and aimed at particular individuals or groups, through discussion with peers.	Know how to create design criteria and a simple design specification for a product that is fit for purpose through discussion with peers and simple surveys.	Know how to use web -based research, surveys or questionnaires to develop a simple design specification for a product that is fit for purpose.
	Communication & Presentation	Know how to describe and present their designs using words, pictures or models.	Know how to effectively communicate their design ideas to others.	Know how to communicate their designs using sketches or words.	Know how to describe and present their designs using annotated sketches.	Know how to present their designs using cross-sectional diagrams.	Know how to present their designs using exploded diagrams.	Know how to effectively communicate their designs through exploded diagrams, prototypes, pattern pieces or computer-aided design.
	Vocabulary	Create, Plan	Labels, Product, Materials, Fabric, Pattern, Texture, Design criteria	Sketch, Function	Annotated Sketch, Process	Diagrams, Annotate, Cross-sectional diagrams, Design brief, User	Design Specification, Survey, Exploded diagrams	Consumer, Prototypes, Computer-aided design (CAD), Technology

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make	Measure & Mark	Know how to compare the sizes of objects.	Know how to make simple marks using simple tools and materials.	Know how to measure lengths, heights using a ruler or jig.	Know how to measure using jigs and rulers.	Know how to make more accurate marks using rulers or measuring tapes.	Know how to measure and mark materials carefully using tools like rulers, making sure it's right.	Know how to use measuring and marking to create a precise design.
	Cutting	Know how to cut along straight lines and use scissors safely.	Know how to cut out basic shapes like circles, squares and triangles.	Know how to cut out more detailed shapes and patterns, like waves or zigzags.	Know how to cut along curved lines.	Know how to cut with precision and accuracy to achieve neat and accurate cuts.	Know how to cut using some advanced cutting techniques, like using serrated scissors or basic symmetry cutting, independently.	Know how to show expertise in cutting by creating complex and decorative designs using advanced cutting techniques, (Like pop-up or movable paper mechanisms).
	Joining & Assembling	Know how to join materials together using simple techniques like sticking or taping.	Know how to join materials by using glue, staples, paper clips or fasteners.	Know how to choose glue, staples, paper clips, sewing or fasteners based on the desired outcome.	Know how to improve joining skills by using techniques like folding and taping, knotting or split pins to make stronger connections.	Know how to select appropriate joining methods and tools for different purposes.	Know how to apply more complex joining techniques, like hot glue or stitching.	Know how to show expertise in selecting and using a variety of joining techniques, (Like push pins, folding and interlocking or clamping with binder clips,) suitable for specific materials and purposes.
	Finishing	Know how to add simple decorations or colours to projects using markers or crayons.	Know how to apply basic finishing techniques (like painting or colouring).	Know how to make projects look special by adding colours, pattern or decorations using paints, markers or stickers.	Know how to choose the right finishing techniques and materials to make a project look the way they want.	Know how to make projects look smooth and neat by removing rough edges and imperfections.	Know how to make projects stand out by adding colourful finishes or using techniques like glitter, metallic paint or stickers.	Know how to show expertise by selecting and applying different finishes to make a project unique.
	Electrical Systems				Know how to construct a series circuit.	Know how to construct a series circuit from a symbols diagram.	Know how the number of voltage of cells effects the brightness of a lamp or volume of a buzzer.	Know how to design and construct a series circuit with multiple components.
	Cooking & Nutrition	Know how to explore simple food preparation tasks, such as washing fruits or stirring ingredients. Explore different types of foods and try new tastes. Know how to wash my hands before handling food. Know about basic food hygiene.	Know how to help with basic food preparation, (like cutting soft ingredients). Know how to follow simple recipes and instructions to make simple dishes.	Know how to help with more involved food preparation, (like chopping or shredding). Know how to follow recipes to cook simple meals with adult supervision, using basic cooking techniques (like measuring or mixing).	Know how to develop more advanced food preparation skills and techniques, (like peeling, kneading and baking).	Know how to plan and follow a recipe, with increasing independence. Know how to handle and store food properly and learn about food safety.	Know how try more advanced cooking techniques, (like frying and mincing, with adult support).	Know how to explore the concept of food waste reduction and implementing strategies to minimize waste in the kitchen.



	Vocabulary	Shapes, Joining, Tools	Decorate, Finishing Techniques, Recipe, Measure	Jig, Food preparation	Series circuit	Precision	Aesthetics, Voltage	Expertise
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		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluate	Criteria & Assessment	Know how to talk about what makes a good design or product.	Know how to investigate different products using simple criteria.	Know how to investigate and begin to analyse different products using simple criteria.	Know how to analyse a single design or product using simple criteria.	Know how to compare two designs or products and choose the one that meets basic criteria.	Know how to choose and explain which designs or products are the best based on multiple criteria.	Know how to provide reasons and evidence to support my assessments of designs or products.
	Reflection & Improvement	Know how to express what they like and didn't like in their designs.	Know how to express strengths and weaknesses in their designs.	Know how to improve their designs by listening to feedback from others.	Know how to change and improve one element of their design after self-reflection.	Know how to change and improve one element of their designs after feedback from others.	Know how to change and improve two elements of their designs based on their thoughts and feedback from others.	Know how to change and improve multiple elements of their designs using their thoughts and feedback from others.
	Vocabulary		Criteria, Design, Evaluate, Purpose				Outcome	

Substantive Knowledge

			EYFS	Year 1	Year 2	Year 3/4 Cycle A	Year 3/4 Cycle B	Year 5/6 Cycle A	Year 5/6 Cycle B
Technical Knowledge	Cooking and Nutrition	Healthy Diet and Hygiene	Fruit Salad Know that fruits come in different colours, shapes, sizes and tastes. Know the importance of eating a balanced and nutritious diet by exploring the concept of “5-a-day”. Know basic hygiene practise and food safety e.g. washing hands and cleaning fruit for consumption.	Fruit and Veg Smoothie Know the difference between fruits and vegetables. Know that a fruit has seeds and a vegetable does not. Know that a blender is a machine which mixes ingredients together into a smooth liquid.	Rainbow Sandwich Know that ‘diet’ means the food and drink that a person or animal usually eats. Know the importance of eating the right amount of different food groups. Know the following food groups: fats, dairy, carbohydrates, protein, fruit and vegetables. Know how to spread condiments on a sandwich.	Bread Know that a nutritious, balanced diet is made up from the 5 food groups. Know the importance of accurate measurements and mixing techniques. Know safety rules for using, storing and cleaning a knife safely. Know that it is important to use oven gloves when removing hot food from an oven.	Design a Soup (Eat Seasonally) Know that climate affects food growth. Know how to follow a recipe. Know that vitamins, minerals and fibre are found in different fruits and vegetables and are important for energy, growth and maintaining health. Know how to read and understand food labels.	Bolognese Sauce Know that the amount of an ingredient in a recipe is known as the ‘quantity’. Know that calories come from fats, proteins and carbohydrates. Know that ‘cross-contamination’ means bacteria and germs have been passed onto read-to-eat foods and it happens when these foods mix with raw meat or unclean objects.	Shepards Pie Know that ‘flavour’ can be achieved by exploring spices. Know the ‘national dishes’ represented in our community. Know that products have “shelf-lives”. Know how to adapt a recipe to make it healthier by substituting ingredients.
		Where Food Comes From	Know that food can be grown.	Know that vegetables can grow either above or below ground.	Know that food comes from plants or animals.	Know the food is farmed, home-grown or caught in the UK or the wider world.	Know the difference between imported and exported food.	Know where meat comes from – learning that beef is from cattle and how beef is reared and processed, including welfare issues.	Know that ‘processed food’ means food that has been put through multiple changes in a factory.
		Cooking Techniques	Know how to spread soft foods using a spreading tool. Know how snip soft foods with scissors safely. Know how to slice using a forward/ backward motion with a dull serrated knife.	Know that a bridge hold cut is creating a bridge over the food, holding the food between your fingers and thumb and use the knife to go through the bridge to cut the food. Know that to chop into smaller sizes, hold the knife and use a downward motion to chop the food.	Know that to grate food, rub the food against the grater, moving it up and down.	Know that kneading is when you push and fold dough with your hands. Know the cooking method of baking and how to use a heat source safely.	Know the cooking method boiling . Know that peeling means removing the outer layer of food by holding the vegetable firmly and move the peeler along it.	Know the basic cooking method of cooking meat . Know that chicken and beef need to not be pink in order to be fully cooked.	Know that creative cuts means cutting food into fun and interesting shapes. Know that to cook some recipes requires multiple cooking methods (Hob then oven or two items cooking on the hob at once).

		Vocabulary	Spread, Snip, Slice	Bridge Hold, Blend	Grate, Balanced Diet	Kneading, measurements	Accurate	Boiling, Peeling, Import, Export	Cross-contamination, Processed, Reared	Method,	Substitute, Adapt, Shelf life
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		EYFS	Year 1	Year 2	Year 3/4 Cycle A	Year 3/4 Cycle B	Year 5/ Cycle A	Year5/ 6 Cycle B
Technical Knowledge	Textiles	Know about different fabrics and materials . Know about how textiles feel, like being soft, smooth or warm. Know how textiles are used to make things useful and eye catching.	<u>Fabric Faces</u> Know that ‘joining technique’ means connecting two pieces of material together. Know that there are various temporary methods of joining fabric by using staples, glue or pins. Know that different techniques for joining materials can be permanent e.g. running stitch. Know that a template (or fabric pattern) is used to cut out the same shape multiple times. Know that a product can be made more appealing through simple embellishments e.g. sticking on object.		<u>Toy Cushion</u> Know different ways to join fabric using sewing skills e.g. whipstitch. Know different ways to decorate fabric using sewing skills (e.g. button, ribbon and trim embellishments). Know that some products are turned inside out after sewing so the stitching is hidden. Know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.		<u>Envelope Bag</u> Know about a variety of fabrics and that each fabric has its own special qualities. Know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. Know different ways to join fabric using (running stitch or whipstitch) and decorate fabric. Know the importance of consistently sized stitches.	
	Vocabulary	Weave, material, thread	Sewing, Running Stitch, Template, Temporary method, Permanent method, Embellishments, Measure		Whipstitch, Seam, Fray, Quality, Textiles, Taut		Aesthetics, Applique,	
	Structures	Know about buildings, bridges and towers and how they help us. Know different materials used in building, like wood, plastic or cardboard. Know about materials that are strong, flexible.		<u>Shelter</u> Know that the shape of materials can be changed to improve the strength and stiffness of structures. Know that a structure is something that has been made and put together. Know the properties of materials, such as strength, flexibility or stability. Know how to join two pieces of paper with glue or tape.	<u>Pavilion</u> Know that wide and flat based objects are more stable. Know the importance of strength and stiffness in structures. Know that a pavilion is a decorative building or structure for leisure activities. Know that a ‘free-standing’ structure is one which can stand on its own.		<u>Bridges</u> Know some different ways to reinforce structures. Know how triangles can be used to reinforce bridges. Know that properties are words that describe the form and function of materials. Know why material selection is important based on properties.	
	Vocabulary			Structure, Stability, Stable	Reinforce, Free-standing		Cantilever, Suspension, Arched bridge, Beam Bridge, Suspension Bridge, Truss Bridge, Suspension	
	Mechanisms	Know different types of mechanisms like levers, wheels, gears or pulleys. Know that simple machines make it easier to push, pull or lift things. Know that different parts fit together to make things work. Know how to follow safety rules to keep myself and other safe.	<u>Moving Pictures</u> Know that a mechanism is the parts of an object that move together. Know that a slider mechanism moves an object from side to side. Know that bridges and guides are bits of card that purposefully restrict the movement of the slider.	<u>Vehicles</u> Know that wheels need to be round to rotate and move. Know that for a wheel to move it must be attached to a rotating axle. Know that an axle moves within and axle holder which is fixed to the vehicle or toy.		<u>Moving Monsters</u> Know how pneumatic systems work. Know that pneumatic systems can be used as part of a mechanism. Know that pneumatic systems operate by drawing in, releasing and compressing air.		<u>Rube Goldberg Machine Including a programming element e.g. Microbit</u> Know that a Rube Goldberg Machine involves a series of mechanical steps or chain reactions to accomplish a simple task. Know of different types of simple machines, such as levers, pulleys, inclined planes, ramps and gears.

								Know how to use a MICRO:BIT to make mechanisms move or control other parts of a design Know how to solve problems and improve mechanisms to make them more interactive and efficient.
	Vocabulary		Mechanism	Assemble, Axle, Axle Holder, Chassis, Fix, Model		Input, Output, Lever, Force, Motion, Pivot, Pneumatic system, Linkage		Chain reaction, Pulley, Inclined plane, Gear, MICRO:BIT, Interactive, Efficient

Technical Knowledge	Electrical Systems					Electrical Poster Know that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. Know a range of common electric products (kettle, remote control etc.). Know that an electric product uses an electrical system to work (function). <i>Know the names of the basic parts of a series circuit; cell, wire, bulb.</i>		Doodlers Know that series circuits only have one direction for the electricity to flow. Know when there is a break in a series circuit, all components turn off. Know that an electric motor converts electrical energy into rotational movement, causing the motor’s axle to spin. Know a motorised product is one which uses a motor to function.
	Vocabulary					Electrical product, Series circuit, Function, Components, <i>Bulb, Battery, Cell, Conductor, Insulator, Switch, Wire</i>		Circuit component, Rotational Movement, Current, Motor