



Design Technology Progression of Knowledge and Skills

EYFS Progression of Knowledge

Structures	- To know there are a range to different materials that can be used to make a model and that they are all slightly different. - Making simple suggestions to fix their junk model. - To know that 'waterproof' materials are those which do not absorb water.
Food and Nutrition	- To know that soup is ingredients (usually vegetables and liquid) blended together. - To know that vegetables are grown. - To recognise and name some common vegetables. - To know that different vegetables taste different. - To know that eating vegetables is good for us. - To discuss why different packages might be used for different foods.

Year 1/2/3 Progression of Knowledge

	Year 1	Year 2	Year 3
Structures	- Recognising that different structures are used for different purposes. - Exploring the features of structures. - Describing structures as buildings or freestanding structures. - Making stable structures from card. - Creating supporting structures to aid stability. - Using stable objects like cylinders to create structures. - To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses). - To understand that axles are used in structures and mechanisms to make parts turn in a circle. - To begin to understand that different structures are used for different purposes. - To know that a structure is something that has been made and put together. - To know that a structure is something built for a reason.	- Recognising that different structures are used for different purposes. - Exploring the features of structures. - Making stable structures from card. - Creating supporting structures to aid stability. - Using stable objects like cylinders to create structures. - Building a strong and stiff structure by folding paper. - Folding to strengthen or stiffen. - Comparing the stability of different shapes. - Identifying the weakest part of a structure. - To know that shapes and structures with wide, flat bases or legs are the most stable. - To understand that the shape of a structure affects its strength. - To know that materials can be manipulated to improve strength and stiffness. - To know that a structure is something which has been	- Beginning to understand how different structures are built. - Beginning to understand how different structures are built. - Beginning to understand how different structures are built. - To understand that wide and flat based objects are more stable. - To understand the importance of strength and stiffness in structures.

	- To know that stable structures do not topple. - To know that adding weight to the base of a structure can make it more stable	formed or made from parts. - To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. - To know that a 'strong' structure is one which does not break easily. - To know that a 'stiff' structure or material is one which does not bend easily.	
Mechanisms and Mechanical Systems	- Recognising and exploring everyday objects that have mechanisms. - Recognising everyday objects that use a slider mechanism (e.g. drawers, sliding doors, paper trimmer). - To know that a mechanism is the parts of an object that move together. - To know that a slider mechanism moves an object from side to side. - To know that a slider mechanism has a slider, slots, guides and an object. - To know that bridges and guides are bits of card that purposefully restrict the movement of the slider. - Recognising and exploring everyday objects that have mechanisms. - Many things that move have parts inside to help them work. - Mechanisms usually limit unwanted movement. - An axle allows the wheel to turn without falling off. - To know that wheels need to be round to rotate and move. - To understand that for a wheel to move, it	- To know everyday objects have mechanisms. - To know many things that move have parts inside to help them work. - To know mechanisms usually limit unwanted movement. - To know everyday objects utilise wheels and axles. - To know wheels must be able to turn to work effectively. - To know axles allow wheels to turn without falling off. - To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. - To know that there is always an input and output in a mechanism. - To know that an input is the energy that is used to start something working. - To know that an output is the movement that happens as a result of the input. - To know that a lever is something that turns on a pivot. - To know that a linkage mechanism is made up of a series of levers.	Beginning to understand how mechanisms work.

	- must be attached to a rotating axle. - To know that an axle moves within an axle holder which is fixed to the vehicle or toy. - To know that the frame of a vehicle (chassis) needs to be balanced.	- Recognising and exploring everyday objects that have mechanisms. - Exploring everyday objects that use levers (e.g scissors, tongs, door handle, stapler).	
Cooking and Nutrition	- To know that a blender is a machine which mixes ingredients together into a smooth liquid. - To know that a fruit has seeds and a vegetable does not. - To know that fruits grow on trees or vines. - To know that vegetables can grow either above or below ground. - To know that a vegetable is any edible part of a plant.	- To know that 'diet' means the food and drink that a person or animal usually eats. - To know what makes a balanced diet. - To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. - To know that I should eat a range of different foods from each food group, and roughly how much of each food group. - To know that 'ingredients' means the items in a mixture or recipe. - To know how to cut, grate, snip and spread to prepare foods. - To know how to review and give a score to evaluate.	
Textiles	- Discussing fabric properties. - Threading large needles. - Rehearsing sewing techniques with large needles and thick thread, like wool. - Sewing a running stitch in large-weave embroidery fabric or hessian. - Creating patterns and following them with stitching. - Spacing stitches evenly. - To know drawings are a way to explain ideas. - To know that choosing different materials or components will affect what the product does or looks like. - To know the names of common pieces of equipment. - To know that following instructions helps with safety. - To know that spacing cuts or marks evenly can be useful. - To know that texture is how something feels.	- To know that sewing is a method of joining fabric - To know that different stitches can be used when sewing. - To understand the importance of tying a knot after sewing the final stitch. - To know that a thimble can be used to protect my fingers when sewing.	

	• To know their ideas or products can be made better. • To know their final product might be different to their original idea. • To know their ideas can make someone else's work better. • To know other people's ideas can help make their work better. • To know evenly spaced stitches help when following a pattern. • To know that 'joining technique' means connecting two pieces of material together. • To know that there are various temporary methods of joining fabric by using staples, glue or pins. • To understand that different techniques for joining materials can be used for different purposes. • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.	
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Y4/5/6 Progression of Knowledge

	Year 4	Year 5	Year 6
Structures	• Strengthening structures by layering materials (lamination). • Strengthening structures by ribbing. • To know how some different structures are built. • To know that structures can be strengthened by manipulating materials and shapes. • To know a shell structure is a hollow shape with a thin outer layer. • To understand what a frame structure is. • To know that a 'free-standing' structure is	• To understand some different ways to reinforce structures. • To understand how triangles can be used to reinforce bridges. • To know that properties are words that describe the form and function of materials. • To understand why material selection is important based on properties. •	• To know that structures can be strengthened by manipulating materials and shapes. • Understanding how to reinforce structures to make them more stable. • Using triangulation to strengthen or stabilise a structure. • To know that constraints are limits or conditions when making a product. • To know that the environmental impact is how the product and making the

	one which can stand on its own.		product might affect the environment. - To know that original and innovative ideas are different from what has been made before. - To know drawings and diagrams can be communicated in 3D. - To know that annotations are detailed labels and comments on diagrams. - To know that improving on prototypes can help to improve the final design. - To know that materials and equipment lists help with planning. - To know aesthetics are the way something looks. - To know that risks are things that might go wrong. - To know the shape of an object can affect both its aesthetics and function. - To know aesthetics is how something looks. - To know that the finish can make a product suitable to be used outside.
Mechanisms and Mechanical Systems	- To understand that a mechanical system can allow us to move something more easily. - To know that mechanical systems have more than one mechanism that moves to make them work. - To know that mechanical systems are often hidden in products to make them look more appealing. - Recognising pneumatic systems in everyday objects (e.g. car boot, adjustable chair.) - To understand how pneumatic systems work. - To understand that pneumatic systems can be used as part of a mechanism. To know that pneumatic systems operate by drawing in, releasing and compressing air.		- To know that the mechanism in an automata uses a system of cams, axles and followers. - To know that different shaped cams produce different outputs. - To know which mechanisms are working together to make a mechanical system. - To know that there are different directions of movement. - To know that mechanisms can change one type of movement to another.

Cooking and Nutrition	• To know that seasonal means foods that grow in a given season in a given country. • To know some seasonal foods that grow in the UK and what season they grow in. • To know that eating seasonal foods can have a positive impact on the environment. • To know how to describe the flavour and texture of foods. • To know how to cut and peel safely. • To know that the appearance of food is as important as taste. • To know that similar coloured fruits and vegetables often have similar nutritional benefits. •	• To know that recipes can be adapted to suit nutritional needs and dietary requirements. • To know that nutritional information is found on food packaging. • To know that coloured chopping boards can prevent cross-contamination. • To know that food packaging serves many purposes.	• To know that 'flavour' is how a food or drink tastes. • To know that many countries have 'national dishes' which are recipes associated with that country. • To know that 'processed food' means food that has been put through multiple changes in a factory. • To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. • To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).
Electrical Systems	• To understand that electrical conductors are materials which electricity can pass through. • To understand that electrical insulators are materials which electricity cannot pass through. • To know that a battery contains stored electricity that can be used to power products. • To know that an electrical circuit must be complete for electricity to flow. • To know that a switch can be used to complete and break an electrical circuit.	• Beginning to understand that electricity flows around a circuit. • Using different components to produce different results from electrical systems. • Creating working electrical circuits with a wider variety of electrical components. • Deconstructing electrical systems to understand how they work. • To know that series circuits only have one direction for the electricity to flow. • To know when there is a break in a series circuit, all components turn off. • To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. • To know a motorised product is one which	• To know that batteries contain acid, which can be dangerous if they leak. • To know the names of the components in a basic series circuit, including a buzzer.

		uses a motor to function.	
Textiles	- To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro. - To know that different fastening types are useful for different purposes. - To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions	- To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. - To understand that it is easier to finish simpler designs to a high standard. - To know that soft toys are often made by creating appendages separately and then attaching them to the main body. - To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely	- Using pins effectively to secure a template to fabric without creases or bulges. - Tying knots at the end of thread to secure it. - Attaching objects like buttons using thread.

Progression of Skills

		EYFS	Year 1	Year 2	Year 3
Structures	Design	- Making verbal plans and material choices. - Developing a junk model. - Using knowledge from exploration to inform design			
	Make				
	Evaluate				