Design Technology Skills Progression

EYFS	National Curriculum - Key Stage 1	National Curriculum - Key Stage 2
ELG: Creating with materials • 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. **ELG: Fine Motor Skills** • Use a range of small tools, including scissors, paint brushes and cutlery; • Begin to show accuracy and care when drawing.	**Design:** • purposeful, functional, appealing products for themselves and other users based on design criteria • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. **Make:** • select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristic **Evaluate:** • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria. **Technical knowledge:** • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products	**Design:** • use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make:** • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate:** • investigate and analyse a range of existing products • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • understand how key events and individuals in design and technology have helped shape the world **Technical knowledge** • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products.

Structures			
EYFS	**KS1**	**Lower KS2**	**Upper KS2**
Pupils should experiment with combining materials together to create 3D structures. They should use different adhesives to combine materials.	Pupils should know about the simple working characteristics of materials and components. They should know how free-standing structures can be made stronger, stiffer and more stable. Create a free-standing bridge structure that is strong and stands freely Join materials together using different tape and glue Fold paper and card to create strong and stiff structures Use strengthening techniques such as adding a base or using buttresses to strengthen a structure	Know correct technical vocabulary Know that materials have both functional properties and aesthetic qualities. Evaluate designs against design criteria. Know how to make strong, stiff, shell structures. Understand that materials can be combined and mixed to create more useful characteristics. Know that shell structures are made from nets.	Learn the correct technical vocabulary. Know that structures can be made using a frame. Know how to reinforce a 3D frame work. Create a step-by-step plan Use learning from maths to help design products that work. Know that materials can be combined and mixed to create more useful characteristics. Know how to create a prototype

Mechanical systems			
EYFS	**KS1**	**Lower KS2**	**Upper KS2**
Pupils should experiment making simple mechanisms using pivots. They should experiment with making simple axels and wheels.	They should know correct technical vocabulary. They should know about the movement of simple mechanisms such as levers and sliders. Know about the movement of simple mechanisms such as axels and wheels	They should know correct technical vocabulary They should Mechanical systems have an input process and output They should know how mechanical systems such as levers and linkages or pneumatic systems work Create a pop-up book using a range of mechanisms including at least one	Pupils should know correct technical vocabulary. They should know how mechanical systems such as cams can create movement. Understand there are a range of cam shapes and the shape determines the type of movement.

	Assemble, join and combine materials and components to create a moving object. Measure, mark out, cut and shape materials and components. Use finishing techniques, including those from art and design.	linkage and lever mechanism and more simple mechanisms such as flaps, sliders and levers. Understand what a fixed and loose pivot are. Join materials together using split pins. Use appropriate tools with some accuracy to cut, shape and join paper and card.	Learn how to create different types of movement (oscillating, reciprocating and rotating)

Electrical systems			
EYFS	**KS1**	**Lower KS2**	**Upper KS2**
		They should know correct technical vocabulary. They should know how to use learning from science to help design and make products that work. They should know that electrical systems have an input and output They should know how simple electrical circuits and components can be used to create functional products. How to programme a computer to control their products (This is covered in the computing curriculum).	They should know correct technical vocabulary. They should know how to use learning from science to help design and make products that work. They should know that electrical systems have an input and output. They should know how more complex electrical circuits and components can be used to create functional products. They should know how to programme a computer to monitor changes in the environment and control their products (This is included in the computing curriculum).

Textiles			
EYFS	**KS1**	**Lower KS2**	**Upper KS2**
Pupils should know there are different types of textiles. They should be able to describe some properties of the textiles and why they are used.	They should know correct technical vocabulary. They should know that a 3D textiles product can be assembled from 2 fabric shapes.	They should know correct technical vocabulary. How to use learning from maths to help design products that work. Materials have both functional properties and aesthetic qualities. That a single fabric shape can be used to make a 3D textile product. Understand how to securely join two pieces of fabric together. Have the skills to use the backwards running stitch. Understand the need for patterns and seam allowances. S	They should know correct technical vocabulary. How to use learning from maths to help design products that work. Materials have both functional properties and aesthetic qualities. They should know that a 3D textile product can be made from a combination of fabric shapes. Pupils should know how to reinforce a 3D framework. Materials can be combined and mixed to create more useful characteristics.

Cooking and Nutrition - Where food comes from			
EYFS	**KS1**	**Lower KS2**	**Upper KS2**
Pupils can name some of the fruit and vegetables that grow in the school garden. They can name some foods that come from animals.	They should know that all food comes from plants or animals. Food has to be farmed, grown elsewhere, e.g. school garden or caught.	They should know that food is grown, reared (cattle) and caught (fish) in the UK, Europe and the wider world. Understand that there is a difference between fresh and processed ingredients and which are appropriate for their healthy pizza. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.	They should know that food is grown, reared (cattle) and caught (fish) in the UK, Europe and the wider world. They should also know that seasons affect when food is available. That food is processed into ingredients that can eaten or used in cooking. Know that recipes can be adapted to change the appearance, taste and aroma. Different food and drink contain different substances – nutrients,

			water and fibre – that are needed for health.

Cooking and Nutrition - Food preparation, cooking and nutrition			
EYFS	**KS1**	**Lower KS2**	**Upper KS2**
Pupils know to wash hands before preparing food. They can cut soft foods safely with a blunt knife. They know to include fruit and vegetables in their diet.	They should know how to name and sort the foods into the 5 groups in the eat well plate. They should know that everyone should eat at least 5 portions of fruit and vegetables a day. How to prepare simple dishes safely and hygienically. How to use techniques such as cutting peeling and grating.	How to prepare and cook, a variety of predominately savoury dishes Safely and hygienically sometimes using a heat source. Use the bridge hold to cut harder foods using a serrated vegetable knife or a safety knife. How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, needing and baking. They should know a healthy diet is made up from a variety and balance of different food and drink as depicted in the eat well plate. They should also know that to be active and healthy food and drink is needed to provide fuel for the body.	How to prepare and cook, a variety of predominately savoury dishes Safely and hygienically sometimes using a heat source. How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, needing and baking. They should know that recipes can be adapted to change the appearance taste and aroma. Different food and drink contain different substances – nutrients, water and fibre – that are needed for health.