Fairways Progression of Skills – Design and Technology 2022

	EYFS	Year 1	Year 2	End of KS1 expectations	Year 3	Year 4	Year 5	Year 6	End of KS2 expectations
Design	Talk about what they are making or what they are going to make. Be able to point out or talk about features of the design with peers or an adult.	Create simple designs for a product. Simple drawing as plan for product, some basic labels/listing for materials needed.	Design purposeful and functional and appealing products for themselves and others based on design criteria. More detailed plan for the product, listed/ labelled materials and features such as 'axis'.	***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, mockups and, where appropriate, information and communication technology**	Create designs using annotated sketches, cross-sectional diagrams and simple computer programs.	Create designs using exploded diagrams. Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience	Use their research into existing products and their market research to inform the design of their own innovative product.	Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer aided design (Band 6). Detailed plans labelled with materials, plans for joins/fixings/ moving parts. Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products that he/she have made. Research existing designs and use these to inform decisions for own 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, crosssectional and exploded diagrams, prototypes, pattern pieces and computeraided design**

Make	Make and build a range of materials and resources (existing construction toys eg. Lego/Duplo/ marble run etc) and materials such as paper, card, junk modelling. weaving Independent use of scissors, sellotape reels, staplers and one handed tools such as play screwdrivers, saws etc).	Build structures exploring how they can be made stronger, stiffer and more stable (Fold and stand materials to make 3D pop up features in their fish tank) Use a range of simple tools to cut, join and combine materials and components safely. Select from and use a range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing)	Safely measure, mark out, cut, and shape materials and components , using a wide range of tools. Choose appropriate tools, equipment, techniques and materials from a wide range.	***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 characteristics**	Safely measure, mark out, cut, assemble and join with some accuracy.	Apply techniques they have learnt to strengthen structures and explore their own ideas	Make careful and precise measurements so that joins, holes and openings are in exactly the right place	Make prototypes / pattern pieces to inform decisions about their final product design. Use technical knowledge and skills to problem solve during the making process.	***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	Adapt their creations as they are making / building to refine their product (eg. making it more stable, adding features etc). Shares their creations explaining the processes they have used (ELG).	Evaluate the best method for joining different materials (link to finger puppets – sewing) Peer evaluation of completed products – what worked, what didn't, what might they change and make better.	Evaluate and assess existing products and those that he/she made using a design criteria.	***Explore and evaluate a range of existing products** ***Evaluate their ideas and products against design criteria**	Investigate and analyse existing products and those he/she has made, considering a wide range of factors. Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.	Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user	Make detailed evaluations about existing products and their own considering the views of others to improve their work	Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional and aesthetic properties. Use technical knowledge and skills to problem solve during the making process.	***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 – materials /structures	Experiment with ways of joining / fixing materials (sellotape, staples, glue), experiment with what makes block structures more stable (eg. bigger bricks at the bottom etc). Safely uses and explores a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Build structures exploring how they can be made stronger, stiffer and more stable (Fold and stand materials to make 3D pop up features in their fish tank)	Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable.	***Build structures, exploring how they can be made stronger, stiffer and more stable**	Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.	Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas (Band 4).	Build more complex 3D structures and apply their technical knowledge of strengthening techniques to make them stronger and more stable.	Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately. Use technical knowledge and skills to problem solve during the making process.	***Apply their understanding of how to strengthen, stiffen and reinforce more complex structures**

Technical Knowledge – Mechanisms	Safely uses and explores a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Using cogs/gears in construction toys, using winches and pulleys in pre-existing toys (eg. a toy crane).	Use a range of simple tools to cut, join and combine materials and components safely (eg. Sliders for Elf head, split pins for moving limbs)	Explore and use mechanisms (for example leavers, sliders, wheels and axles) in their products.	***Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.**	Explore different materials to create moving parts (simple pneumatics, levers, springs, moving joints when designing and making robots)	**Revision of mechanism previously taught** Understand how mechanical systems such as levers and linkages or pneumatic systems create movement	Understand how to use more complex mechanical and electrical systems	Use technical knowledge and skills to problem solve during the making process.	***Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]**

Technical Knowledge –Textiles	Safely uses and explores a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Experiences with a range of textiles; weaving with wool, ribbon or rags or building dens with fabric.	Use a range of simple tools to cut, join and combine materials and components safely. Select from and use a range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing)	N/A		Safely measure, mark out, cut, assemble and join with some accuracy. Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.	**Revision of previous textile techniques taught**	Make careful and precise measurements so that joins, holes and openings are in exactly the right place	Use technical knowledge and skills to problem solve during the making process. Weaving, felting or sewing (poppies); weaving (tartan).	

Technical Knowledge –Food and nutrition	Knows and can talk about the different factors that support their overall health and wellbeing; (healthy eating). Talk about / sort healthy and unhealthy foods. Role play chopping / preparing food. Possible healthy food tasting (chop soft fruit with a plastic knife or make fruit kebabs – pushing fruits onto a skewer).	Wash hands and clean surfaces Talk about food eaten at home and begin to discuss what healthy foods are Say where some food comes from and give examples of food that's grown (i.e. plant or animal) Use simple tools, with help, to prepare food safely (spreading, cutting, grating)	Understand the need for a variety of food in a diet Understand that all food has to be farmed, grown or caught Use a wider range of cookery techniques to prepare food safely (cutting, grating, peeling, slicing and chopping)	***Use the basic principles of a healthy and varied diet to prepare dishes** ***Understand where food comes from.**	Use a wider variety of ingredients and techniques to prepare and combine ingredients safely (mixing, kneading and shaping dough) (make Tudor biscuits) To be able to weigh out the correct amount of ingredients needed	Read and follow recipes which involve several processes, skills and techniques. Understand seasonality and the advantages of eating seasonal and locally produced food. Understand what makes a healthy and balanced diet, and that different foods and drinks provide	Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable/tasty to eat	Research, plan and prepare and cook a savoury dish, applying his/her knowledge of ingredients and his/her technical skills. Select appropriate ingredients and use a wide range of techniques to combine them. Use information on food labels to inform choices. Read scales to weigh ingredients with increased	***Understand and apply the principles of a healthy and varied diet** ***Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques** ***Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.**

						different substances the body needs to be healthy and active.		accuracy. Chop, peel, grate ingredients. Stir, mix and knead ingredient and shape dough. Be able to say how to use a heat source safely and how to read dials/ controls.	

Technical Knowledge- Electrical systems	N/A	N/A	N/A		(Optional as covered in year 4) Make a simple circuit including one light bulb – for example for Robot eyes	Understand and use electrical systems in products (Victorian Christmas product?)	Understand how to use more complex mechanical and electrical systems	Apply their understanding of computing to program, monitor and control their product.	***Understand and use electrical systems in their products [for example, series circuits**