DESIGN & TECHNOLOGY – PROGRESSION OF SKILLS 2023/24

	EYFS	YEAR 1	YEAR 2	NC END OF KS1 EXPECTATIONS	YEAR 3	YEAR 4	YEAR 5	YEAR 6	NC END OF KS2 EXPECTATIONS
Design	*Select appropriate resources *Use gestures, talking and arrangements of materials and components to show design * Use contexts set by the teacher and myself *Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)	* Generate my own ideas * Explain what my product is for and how it will work * Use pictures and words to plan * Design a product for myself following design criteria *Research similar existing products	* Generate my own ideas and plan what to do next * Explain what I want to do and describe how I may do it * Explain purpose of product, how it will work and how it will be suitable for the user * Describe my design, using pictures, words, models and diagrams. * Design products for myself and others following design criteria * Choose best tools and materials, and explain choices * Use knowledge of existing products to produce ideas	• 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	* Design to appeal to a specific person/purpose. * Follow a given design criteria * Have at least one idea about how to create product * Create a plan which shows order, equipment and tools * Show design meets a range of requirements * Describe design, using an accurately labelled sketch and words * Make design decisions *Explain how product will work * Make a prototype * Begin to use computers to show design (TinkerCAD)	* Use research for design ideas * Show design meets a range of requirements and is fit for purpose * Begin to create own design criteria * Have at least one idea about how to create product and suggest improvements for design. * Produce a plan and explain it to others * Include an annotated sketch * Make & explain design decisions, considering availability of resources *Explain how product will work * Make a prototype *Begin to use computers to show design (TinkerCAD)	* Use independent research for design ideas * Take a user's view into account when designing * Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose * Create own design criteria * Have a range of ideas * Produce a logical, realistic plan and explain it to others. * Use cross-sectional planning and annotated sketches * Make design decisions considering time and resources. * Clearly explain how parts of product will work. * Model and refine design ideas by making prototypes * Use computer-aided designs (TinkerCAD)	* Draw on market research to inform design * Use research of user's individual needs, wants, requirements for design * Identify features of design that will appeal to the intended user * Create own design criteria and specification * Come up with innovative design ideas * Follow and refine a logical plan. * Use annotated sketches, cross-sectional planning and diagrams * Make design decisions, considering, resources and cost * Clearly explain how parts of design will work, and how they are fit for purpose * Independently model and refine design ideas by making prototypes * Use computer-aided designs (TinkerCAD	• 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	* Construct with a purpose, using a variety of resources *Use simple tools and techniques * Build/construct with a wide range of objects * Select tools & techniques to shape, assemble and join * Replicate structures with materials/ components * Discuss how to make an activity safe and hygienic * Record experiences by drawing, writing, voice recording * Understand different media can be combined for a purpose	* Follow a design and/or instructions * Explain what I'm making and why * Consider what I need to do next * Select tools/equipment to cut, shape, join, finish and explain choices * Measure, mark out, cut and shape, with support * Choose suitable materials and explain choices * Try to use finishing techniques to make product look good * Work in a safe and hygienic manner	* Explain what I am making and why it fits the purpose * Make suggestions as to what I need to do next. * Join materials/ components together in different ways * Measure, mark out, cut and shape materials and components, with support. * Describe which tools I'm using and why * Choose suitable materials and explain choices depending on characteristics. * Use finishing techniques to make product look good * Work safely and hygienically	• 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	* Select suitable tools/equipment/ materials, with some support * Can explain my choices * Work through plan in order * Measure, mark out, cut and shape materials and components with some accuracy * Begin to assemble, join and combine materials and components with some accuracy * Begin to apply a range of finishing techniques with some accuracy	* Select suitable tools & equipment, explain choices in relation to required techniques and using accurately *Select appropriate materials, fit for purpose; explain choices * Work through plan in order. * Realise if product is going to be good quality * Measure, mark out, cut and shape materials and components with increasing accuracy *Assemble, join and combine materials and components with some accuracy *Apply a range of finishing techniques with some accuracy	* Use selected tools & equipment with good level of precision * Produce suitable lists of tools, equipment/materials needed * Select appropriate materials, fit for purpose; explain choices, considering functionality * Create and follow detailed step-by-step plan * Explain how product will appeal to an audience * Mainly accurately measure, mark out, cut and shape materials/components * Mainly accurately assemble, join and combine materials/components * Mainly accurately apply a range of finishing techniques * Use techniques that involve a small number of steps * Begin to be resourceful with practical problems	* Use selected tools & equipment precisely * Produce suitable lists of tools, equipment, materials needed, considering constraints * Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics * Create, follow, and adapt detailed step-by-step plans *Explain how product will appeal to audience; make changes to improve quality * Accurately measure, mark out, cut and shape materials/components * Accurately assemble, join and combine materials/components * Accurately apply a range of finishing techniques * Use techniques that involve a number of steps * Be resourceful with practical problems	• 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 work if necessary * Verbal evaluation of their own and others' models with adult support. * Checking to see if their model matches their plan. * Considering what they would do differently if they were to do it again. * Describing their favourite and least favourite part of their model.	* Talk about my work, linking it to what I was asked to do * Talk about existing products considering: use, materials, how they work, audience, where they might be used * Talk about existing products, and say what is and isn't good * Begin to talk about what could make my product better	* Describe what went well, thinking about design criteria * Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion * Evaluate how effective existing products are * Talk about what I would do differently if I were to do it again and why	• Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria	* Look at design criteria while designing and making * Use design criteria to evaluate finished product * Say what I would change to make design better * Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose * Begin to understand by whom, when and where products were designed	* Refer to design criteria while designing and making * Begin to use design criteria to evaluate product whilst making, as well as the finished product. * Begin to explain how I could improve original design * Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * Discuss by whom, when and where products were designed * Research whether products can be recycled or reused	* Evaluate quality of design while designing and making * Evaluate ideas and finished product against specification, considering purpose and appearance. * Test and evaluate final product * Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * Begin to evaluate how much products cost to make and how innovative they are * Research how sustainable materials are	* Evaluate quality of design while designing and making (Is it the best it can be? Is it fit for purpose?) * Evaluate ideas and finished product against specification, stating if it's fit for purpose * Test and evaluate final product; explain what would improve it and the effect different resources may have had * Thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose * Evaluate how much products cost to make and how innovative they are * Research and discuss how sustainable materials are * Consider the impact of products beyond their intended purpose	• 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 - 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. * To make simple suggestions to fix their model.	* 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 suggest ways to make materials and products stronger	* To begin to understand the importance of strength and stiffness in structures. * To know that shapes and structures with wide, flat bases or legs are the most stable. * To know that materials can be manipulated to improve strength and stiffness.	• Build structures, exploring how they can be made stronger, stiffer and more stable	* To understand the importance of strength and stiffness in structures. * 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.	* To understand what a frame structure is. * To know that a 'free-standing' structure is one which can stand on its own.	* 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 understand the material (functional and aesthetic) properties of wood.	* To know that structures can be strengthened by manipulating materials and shapes.	• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

Technical Knowledge - Mechanisms		* 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 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.	• Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	* 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 understand that all moving things have kinetic energy. * To understand that kinetic energy is the energy that something (object/person) has by being in motion. * To know that air resistance is the level of drag on an object as it is forced through the air. * To understand that the shape of a moving object will affect how it moves due to air resistance.	* To know that mechanisms control movement. * To understand that mechanisms can be used to change one kind of motion into another. * To understand how to use sliders, pivots and folds to create paper-based mechanisms.	* To understand that the mechanism in an automata uses a system of cams, axles and followers. * To understand that different shaped cams produce different outputs.	• Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

Technical Knowledge - Textiles		* To measure, cut and join textiles to make a product, with support * To know that 'joining technique' means connecting two pieces of material together. * To choose suitable textiles for the design	* To measure, cut and join textiles to make a product with some support * To know that different stitches can be used when sewing. * To understand the importance of tying a knot after sewing the final stitch. * To choose suitable textiles for the design and explain my choices		* To measure, cut and join textiles to make a product with some accuracy * To know that applique is a way of mending/ decorating a textile, by applying smaller pieces to larger pieces of fabric * To know that when two edges of fabric have been joined together it is called a seam. * To know that it is important to leave space on the fabric for the seam. * To understand that some products are turned inside out after sewing so the stitching is hidden.	* To measure, cut and join textiles to make a product with increasing accuracy * 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.	* To understand that it is important to design clothing with the client/ target customer in mind. * To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric. * To understand the importance of consistently sized stitches.	

Technical Knowledge – Cooking & Nutrition	* To begin to understand some food preparation tools, techniques and processes * To practise stirring, mixing, pouring, chopping * To discuss how to make an activity safe and hygienic * To begin to understand that eating well contributes to good health	* To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber). * 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 chop fruit and vegetables safely to make a smoothie. * To know that a blender is a machine which mixes ingredients together into a smooth liquid.	* To know that 'diet' means the food and drink that a person or animal usually eats. * To understand what makes a balanced diet. * To know where to find the nutritional information on packaging. * To know the five main food groups * To understand 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 that cooking instructions are known as a 'recipe'.	• Use the basic principles of a healthy and varied diet to prepare dishes • Understand where food comes from.	* To begin to understand food comes from UK and wider world * To know that vegetables and fruit grow in certain seasons. * To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre. * To follow the recipe with some support * To make product look attractive * To grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	* To know that the amount of an ingredient in a recipe is known as the 'quantity.' * To know that it is important to use oven gloves when removing hot food from an oven. * To know the following cooking techniques: sieving, creaming, rubbing method, cooling. * To understand the importance of budgeting while planning ingredients for biscuits. * To follow the recipe with increasing accuracy	* To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues. * To know that I can adapt a recipe to make it healthier by substituting ingredients. * To know that I can use a nutritional calculator to see how healthy a food option is. * To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.	* 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).	• 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.