DESIGN AND TECHNOLOGY PROGRESSION OF SKILLS DOCUMENT

SKILL AREA	EYFS	Y1	Y2	End of KS1 Expectations	Y3	Y4	Y5	Y6	End of KS2 Expectations
DESIGN	**D1.** Select appropriate resources. **D2.** Use gestures, talking and arrangements of materials and components to show design. **D3.** Use contexts set by the teacher and myself. **D4.** Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)	**D1.** Have own ideas. **D2.** Explain what I want to do. **D3.** Explain what my product is for and how it will work. **D4.** Use pictures and words to plan and begin to use models. **D5.** Design a product for myself following a design criteria. **D6.** Research similar existing products.	**D1.** Have own ideas and plan what I want to do next. **D2.** Explain what I want to do and describe how I may do it. **D3.** Explain purpose of product, how it will work and how it will be suitable for the user. **D4.** Describe design using pictures, words, models, diagrams and begin to use ICT. **D5.** Design products for myself and others following a design criteria. **D6.** Choose the best tools and materials and explain choices. **D7.** Use knowledge of existing products to produce ideas.	*** Design purposeful, functional, appealing products for themselves and other users based on a design criteria.** *** Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.**	**D1.** Begin to research others' needs. **D2.** Show design meets a range of requirements. **D3.** Describe the purpose of the product. **D4.** Follow a given design criteria. **D5.** Have at least one idea about how to create the product. **D6.** Create a plan which shows order, equipment and tools. **D7.** Describe the design using an accurately labelled sketch and words. **D8.** Make design decisions. **D9.** Explain how the product will work. **D10.** Make a prototy	**D1.** Use research for design ideas. **D2.** Show design meets a range of requirements and is fit for purpose. **D3.** Begin to create own design criteria. **D4.** Have at least one idea about how to create the product and suggest improvements for the design. **D5.** Produce a plan and explain it to others. **D6.** Say how realistic the plan is. **D7.** Include an annotated sketch. **D8.** Make and explain design decisions considering availability of resources. **D9.** Explain how the product will work. **D10.** Make a prototype. **D11.** Begin to use computers to show design.	**D1.** Use the internet and questionnaires for research and design ideas. **D2.** Take a user's view into account when designing. **D3.** Begin to consider needs/wants of individuals/groups when designing and ensure the product is fit for purpose. **D4.** Create own design criteria. **D5.** Have a range of ideas. **D6.** Produce a logical, realistic plan and explain it to others. **D7.** Use cross-sectional planning and annotated sketches. **D8.** Make design decisions considering time and resources. **D9.** Clearly explain how parts of the product will work. **D10.** Model and refine design ideas by making prototypes and using pattern pieces. **D11.** Use computer-aided designs.	**D1.** Draw on market research to inform design. **D2.** Use research of user's individual needs, wants and requirements for the design. **D3.** Identify features of design that will appeal to the intended user. **D4.** Create own design criteria and specification. **D5.** Come up with innovative design ideas. **D6.** Follow and refine a logical plan. **D7.** Use annotated sketches, cross sectional planning and exploded diagrams. **D8.** Make design decisions, considering, resources and cost. **D9.** Clearly explain how parts of the design will work, and how they are fit for purpose. **D10.** Independently model and refine design ideas by making prototypes and using pattern pieces. **D11.**Use computer-aided designs.	*** 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	**M1.** Construct with a purpose, using a variety of resources. **M2**. Use simple tools and techniques. **M3.** Build/construct with a wide range of objects. **M4.** Select tools & techniques to shape, assemble and join. M5. Replicate structures with materials/components. **M6.** Discuss how to make an activity safe and hygienic. **M7.** Record experiences by drawing, writing and/or voice recording. **M8.** Understand different media can be combined for a purpose.	**M1.** Explain what I am making and why. **M2.** Consider what I need to do next. **M3.** Select tools and equipment to cut, shape, join, finish and explain choices. **M4.** Measure, mark out, cut and shape, with support. **M5.** Choose suitable materials and explain choices. **M6.** Try to use finishing techniques to make the product look good. **M7.** Work in a safe and hygienic manner.	**M1.** Explain what I am making and why it fits the purpose. **M2.** Make suggestions as to what I need to do next. **M3.** Join materials and components together in different ways. **M4.** Measure, mark out, cut and shape materials and components, with support. **M5.** Describe which tools I'm using and why. **M6.** Choose suitable materials and explain choices depending on characteristics. **M7.** Use finishing techniques to make the product look good. **M8.** 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.**	**M1.** Select suitable tools and equipment, explain choices and begin to use them accurately. **M2.** Select appropriate materials, fit for the purpose. **M3.** Work through the plan in order. **M4.** Consider how good the product will be. **M5.** Begin to measure, mark out, cut and shape materials and components with some accuracy. **M6.** Begin to assemble, join and combine materials and components with some accuracy. **M7.** Begin to apply a range of finishing techniques with some accuracy.	**M1.** Select suitable tools and equipment, explain choices in relation to required techniques and use accurately. **M2.** Select appropriate materials, fit for purpose and explain choices. **M3.** Work through the plan in order. **M4.** Realise if product is going to be good quality. **M5.** Measure, mark out, cut and shape materials and components with some accuracy. **M6.** Assemble, join and combine materials and components with some accuracy. **M7.** Apply a range of finishing techniques with some accuracy.	**M1.** Use selected tools and equipment with a good level of precision. **M2.** Produce suitable lists of tools, equipment and materials needed. **M3.** Select appropriate materials, fit for purpose; explain choices, considering functionality. **M4.** Create and follow a detailed step- by-step plan. **M5.** Explain how product will appeal to an audience. **M6.** Mainly accurately measure, mark out, cut and shape materials and components. **M7.** Mainly accurately assemble, join and combine materials and components. **M8.** Mainly accurately apply a range of finishing techniques. **M9.** Use techniques that involve a small number of steps. **M10.** Begin to be resourceful with practical problems.	**M1.** Use selected tools and equipment precisely. **M2.** Produce suitable lists of tools, equipment, materials needed, considering constraints. **M3.** Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics. **M4.** Create, follow and adapt detailed step-by-step plans. **M5.** Explain how the product will appeal to audience and make changes to improve quality. **M6.** Accurately measure, mark out, cut and shape materials and components. **M7.** Accurately assemble, join and combine materials and components. **M8.** Accurately apply a range of finishing techniques. **M9.** Use techniques that involve a number of steps. **M10.** 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	**E1.** Adapt work if necessary. **E2.** Dismantle, examine and talk about existing objects and structures. Consider and manage some risks. **E3.** Practise some appropriate safety measures independently. **E4.** Talk about how things work. **E5.** Look at similarities and differences between existing objects, materials and tools. **E6.** Show an interest in technological toys. **E7.** Describe textures.	**E1.** Talk about my work, linking it to what I was asked to do. **E2.** Talk about existing products considering the use, the materials, how they work, the audience and where they might be used. **E3.** Talk about the existing products. (what worked well and what didn't) **E4.** Talk about things that other people have made. **E5.** Begin to talk about what could make the product better.	**E1.** Describe what went well, thinking about design criteria. **E2.** Talk about existing products considering the use, the materials, how they work, audience, where they might be used and express a personal opinion. **E3.** Evaluate how good the existing products are. **E4.** 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.**	**E1.** Look at the design criteria whilst designing and making. **E2.** Use the design criteria to evaluate the finished product. **E3.** Say what I would change to make the design better. **E4.** Begin to evaluate existing products, considering how well they have been made, the materials, whether they work, how they have been made and if it is fit for purpose. **E5.** Begin to learn about some inventors/designers/ engineers/chefs/ manufacturers of ground breaking-products.	**E1.** Refer to design criteria whilst designing and making. **E2.** Use criteria to evaluate the product. Begin to explain how I could improve original design. **E3.** Evaluate existing products, considering how well they have been made, the materials, whether they work, how they have been made and if it is fit for purpose. **E4.** Research whether products can be recycled or reused. **E5.** Learn about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products.	**E1.** Evaluate the quality of the design while designing and making. **E2.** Evaluate ideas and the finished product against specification, considering purpose and appearance. **E3.** Test and evaluate the final product. **E4.** Evaluate and discuss existing products, considering how well they have been made, the materials, whether they work, how they have been made and if it is fit for purpose. **E5.** Begin to evaluate how much products cost to make. **E6.** Talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground breaking-products.	**E1.** Evaluate the quality of the design while designing and making. Is it fit for purpose? **E2.** Keep checking the design is the best it can be. **E3.** Evaluate ideas and finished product against specification, stating if it's fit for purpose. **E4.** Test and evaluate the final product, explaining what would improve it and the effect different resources may have had. **E5.** Do thorough evaluations of the existing products considering: how well they have been made, the materials, whether they work, how they've been made and are they fit for purpose. **E6.** Evaluate how much products cost. **E7.** Discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground breaking-products.	*** 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	**TKS1.** Build structures using a range of resources (bricks, boxes, paper and straws etc.) independently and for a purpose. **TKS2.** Experiment with size when building (height, length and breadth). **TKS3.** Talk about what happens when the building gets bigger/smaller and longer and shorter. (ONGOING THROUGHOUT THE YEAR LINKED TO OUR STORY THEMES) (ADULT DIRECTED ACTIVITIES AND CHILD INITIATED LEARNING TIME)	**TKS1.** Measure and join materials with some support. **TKS2.** Describe some different characteristics of materials. **TKS3.** Suggest ways to make the material or product stronger, stiffer and more stable. **TKS4.** Experiment with joining, rolling and folding. **TKS5.** Use own ideas to make the product stronger. (PLAYGROUNDS)	→	*** Build structures, exploring how they can be made stronger, stiffer and more stable.**	**TKS1.** Use appropriate materials. **TKS2.** Work accurately to make cuts and holes. **TKS3.** Join materials. **TKS4.** Begin to make strong structures. **TKS5.** Develop and use the knowledge of nets of cubes and cuboids and where appropriate more complex 3D shapes. (PHOTO FRAMES)	**TKS1.** Measure carefully to avoid mistakes. **TKS2.** Develop and use knowledge of how to construct strong, stiff shell structures. **TKS3.** Attempt to make the product strong. **TKS4.** Continue working on a product even if the original didn't work. **TKS5.** Use the knowledge of nets of cubes and cuboids and where appropriate more complex 3D shapes. (NIGHT LIGHTS)	**TKS1.** Select materials carefully, considering intended use of product and appearance. **TKS2.** Explain how the product meets the design criteria. **TKS3.** Measure accurately enough to ensure precision. **TKS4.** Ensure the product is strong and fit for purpose. **TKS5.** Begin to reinforce and strengthen a 3D frame. (MOVING MONSTERS/DRAGONS)	**TKS1.** Select materials carefully, considering intended use of the product, the aesthetics and functionality. **TKS2.** Explain how the product meets the design criteria. **TKS3.** Reinforce and strengthen a 3D frame. (BUGGIES)	*** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**
TECHNICAL KNOWLEDGE - MECHANISM	**TKM1.** Explore and play with toys that use different mechanisms to make them work (i.e. cars, moving pictures in books, wind-up toys etc.) (ONGOING THROUGHOUT THE YEAR LINKED TO OUR STORY THEMES) (ADULT DIRECTED ACTIVITIES AND CHILD INITIATED LEARNING TIME)	**TKM1.** Begin to use levers or slides. **TKM2.** Understand that different mechanisms produce different types of movement. (MOVING PICTURES)	**TKM1.** Explore and use wheels, axles and axle holders. **TKM2.** Distinguish between fixed and freely moving axles. (MOVING VEHICLES – SKATEBOARDS)	*** Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.**	**TKM1.** Select appropriate tools and techniques. **TKM2.** Alter product after checking. Can you make it better? **TKM3.** Begin to try new and different ideas. **TKM4.** Use simple lever and linkages to create movement. **TKM5.** Distinguish between fixed and loose pivots. (SKELETONS)	→	**TKM1.** Refine the product after testing. **TKM2.** Grow in confidence about trying new and different ideas. **TKM3.** Begin to use cams, pulleys or gears to create movement. **TKM4.** Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. **TKM5.** Use pneumatic (air or gas) to create movement. (MOVING TOYS & MOVING MONSTERS/DRAGONS)	**TKM1.** Refine the product after testing, considering aesthetics (nature and appreciation of beauty), functionality and purpose. **TKM2.** Understand that mechanical and electrical systems have an input, process and output. **TKM3.** Be confident to try new and different ideas. **TKM4.**Use cams, pulleys and gears to create movement. (FAIRGROUNDS)	*** Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]**

TECHNICAL KNOWLEDGE – TEXTILES	**TKT1.** Learn how to join fabrics together using different techniques – stapling, glue or tape. **TKT2.** Join textiles together to make a product. (ONGOING THROUGHOUT THE YEAR LINKED TO OUR STORY THEMES) (ADULT DIRECTED ACTIVITIES AND CHILD INITIATED LEARNING TIME)	→	**TKT1**. Measure, cut and join textiles to make a product with some support. **TKT2.** Join fabrics together using different techniques – stapling, glue or tape. **TKT3.** Choose suitable textiles. **TKT4.** Join textiles together to make a product and explain how I did it. **TKT5.** Learn how to join fabrics together using a running stitch. **TKT6.** Understand that a 3D textile structure can be made from two identical fabric shapes. (PUPPETS)		→	**TKT1.** Think about the user when choosing textiles. **TKT2.** Think about how to strengthen, stiffen and reinforce existing fabrics. **TKT3.** Begin to devise a template, understanding the need for patterns and seam allowances. **TKT4.** Understand how to securely join two pieces of fabric together using running stitch. **TKT5.** Learn how to join fabric together using over stitch. **TKT6.** Understand that a simple fabric shape can be used to make a 3D textiles project. (ANCIENT EGYPTIAN COLLARS)	→	**TKT1.** Think about the user's wants and needs and the aesthetics when choosing the textiles. **TKT2.** Use a template. **TKT3.**Make the product attractive and strong. **TKT4.** Make a prototype. **TKT5.** Use a range of joining techniques. **TKT6.** Think about how the product might be sold. **TKT7.** Think carefully about what would improve the product. **TKT8.** Understand that a single 3D textiles project can be made from a combination of fabric shapes. (UPCYCLING A T-SHIRT)	
TECHNICAL KNOWLEDGE – ELECTRICAL SYSTEMS	→	→	→		**TKES1.** Make and use a simple circuit (program 1 light). **TKES2.** Learn about how to program a computer to control the product. (BBC MICRO-BITS – DIWALI LIGHTS)	**TKES1.** Use a number of components in a circuit (program more than 1 light). **TKES2.** Program a computer to control the product. (BBC MICRO-BITS– NIGHT LIGHTS)	**TKES1.** Incorporate a switch into the product. **TKES2.** Confidently use a number of components in a circuit (2 lights with pneumatics). **TKES3.** Begin to be able to program a computer to monitor changes in the environment and control the product. (BBC MICRO-BITS - LIGHTS MONSTER/DRAGON EYES)	**TKES1.** Use different types of circuits in the product (lights, motors and input change) **TKES2.** Think of ways in which adding a circuit would improve the product. **TKES3.** Program a computer to monitor the changes in the environment and control the product. (BBC MICRO-BITS - FAIRGROUNDS)	*** Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors)** *** Apply their knowledge of computing to program, monitor and control their products.**

TECHNICAL KNOWLEDGE – FOOD AND NUTRITION	**TKFN1.** Begin to understand some food preparation tools, techniques and processes. **TKFN2.** Practise stirring, mixing, pouring, blending. **TKFN3.** Discuss how to make an activity safe and hygienic. **TKFN4.** Discuss and use the senses. **TKFN5.** Understand need for variety in food. **TKFN6.** Begin to understand that eating well contributes to good health. (ONGOING THROUGHOUT THE YEAR LINKED TO OUR STORY THEMES.)	**TKFN1.** Wash hands & clean surfaces. **TKFN2.** Learn where some foods come from. (plant or animal) **TKFN3.** Describe differences between some food groups. **TKFN4.** Discuss the need for variety in food. **TKFN5.** Discuss how fruit and vegetables are healthy. **TKFN6.** Cut, peel and grate safely, with support. **TKFN7.** Describe textures. (FRUIT KEBABS)	**TKFN1.** Explain hygiene and keep a hygienic kitchen. **TKFN2.** Describe properties of ingredients and the importance of varied diet. **TKFN3.** Say where food comes from (plant, animal etc.) **TKFN4.** Describe how food is farmed, home-grown, caught. **TKFN3.** Cut, peel and grate with increasing confidence. (APPLE CRUMBLE)	*** Use the basic principles of a healthy and varied diet to prepare dishes** *** Understand where food comes from.**	**TKFN1.** Carefully select ingredients. **TKFN2.** Use equipment safely. **TKFN3**. Make the product look attractive. **TKFN4.** Think about how to grow plants to use in cooking. **TKFN5.** Begin to understand that food comes from the UK and the wider world. **TKFN6.** Describe how a healthy diet means a variety and balance of food and drinks. **TKFN7.** Explain how food and drink are needed for active and healthy bodies. **TKFN8.** Prepare and cook some dishes safely and hygienically. **TKFN9.** Grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. (VEGETABLE SOUP – LINKED TO THE IRON AGE)	**TKFN1.** Explain how to be safe and hygienic. **TKFN2.** Think about presenting the product in and interesting and attractive way. **TKFN3.** Understand that ingredients can be fresh, pre-cooked or processed. **TKFN4.** Begin to understand about food being grown, reared or caught in the UK and the wider world. **TKFN5.** Describe how a healthy diet means a variety and balance of food and drinks. **TKFN6.** Explain the importance of food and drink for active healthy bodies. **TKFN7.** Prepare and cook some savoury dishes safely and hygienically. **TKFN8.** Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. (SWEET & SAVOURY PANCAKES)	**TKFN1.** Explain how to be safe and hygienic and follow own guidelines. **TKFN2.** Present the product well - interesting, attractive, fit for purpose. **TKFN3.** Begin to understand seasonality of foods. **TKFN4.** Understand that food can be grown, reared or caught in the UK and the wider world. **TKFN5.** Describe how recipes can be adapted to change appearance, taste, texture and aroma. **TKFN6.** Explain how there are different substances in food and drink needed for health. **TKFN7.** Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source. **TKFN8.** Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. (COUS COUS SALAD)	**TKFN1.** Understand a recipe can be adapted by adding and/or substituting ingredients. **TKFN2.** Explain seasonality of foods. **TKFN3.** Learn about food processing methods. **TKFN4.** Name some types of food that are grown, reared or caught in the UK or wider world. **TKFN5.** Adapt recipes to change appearance, taste, texture or aroma. **TKFN6.** Describe some of the different substances in food and drink, and how they can affect health. **TKFN7.** Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source. **TKFN8.** Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. (BREAD)	*** 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.**