

**Primary Phase Progression Map: Design and Technology**

	<b>EYFS</b>	<b>Key Stage 1</b>		<b>Lower Key Stage 2</b>		<b>Upper Key Stage 2</b>	
	<b>Reception</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<b>Design</b>	<p><u>Physical Development</u> (Fine Motor Skills) The children will: <b>Hold a pencil effectively - using the tripod grip in almost all cases.</b> <b>Use a range of small tools, including scissors, paintbrushes and cutlery.</b> <b>Begin to show accuracy and care when drawing.</b></p>	<p><b>Design purposeful, functional, appealing products for themselves and other users based on design criteria</b></p> <p><b>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</b></p>		<p><b>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</b></p> <p><b>Generate, develop, model and communicate their ideas through discussion, annotated sketches, crosssectional and exploded diagrams, prototypes, pattern pieces and computeraided design</b></p>			
	<p>Select appropriate resources</p> <p>Use gestures, talking and arrangements of materials and components to show design</p> <p>Use contexts set by the teacher and myself</p> <p>Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)</p>	<p>Have my own ideas</p> <p>Explain what I want to do</p> <p>Explain what my product is for, and how it will work</p> <p>Use pictures and words to plan and begin to use models</p> <p>Design a product for myself following design criteria</p> <p>Research similar existing products</p>	<p>Have my own ideas and plan what to do next</p> <p>Explain what I want to do and describe how I may do it</p> <p>Explain the purpose of a product, how it will work and how it will be suitable for the user</p> <p>Describe my design using pictures, words, models, diagrams and begin to use ICT</p> <p>Design products for myself and others following design criteria</p> <p>Choose the best tools and materials, and explain my choices</p> <p>Use knowledge of existing products to produce ideas</p>	<p>Begin to research others' needs</p> <p>Show that my design meets a range of requirements</p> <p>Describe the purpose of product</p> <p>Follow a given design criteria</p> <p>Have at least one idea about how to create a product</p> <p>Create a plan which shows the order, equipment and tools</p> <p>Describe my design using an accurately labelled sketch and words</p> <p>Make design decisions</p> <p>Explain how my product will work</p> <p>Make a prototype</p>	<p>Use research for design ideas</p> <p>Show that my design meets a range of requirements and is fit for purpose</p> <p>Begin to create my own design criteria</p> <p>Have at least one idea about how to create a product and suggest improvements for design.</p> <p>Produce a plan and explain it to others</p> <p>Say how realistic my plan is.</p> <p>Include an annotated sketch</p> <p>Make and explain my design decisions considering availability of resources</p> <p>Explain how my product will work</p> <p>Make a prototype</p> <p>Begin to use computers to show design.</p>	<p>Use the internet and questionnaires for research and design ideas</p> <p>Take a user's view into account when designing</p> <p>Begin to consider needs/wants of individuals/groups when designing and ensure that the product is fit for purpose</p> <p>Create my own design criteria</p> <p>Have a range of ideas</p> <p>Produce a logical, realistic plan and explain it to others.</p> <p>Use cross-sectional planning and annotated sketches</p> <p>Make design decisions considering time and resources.</p> <p>Clearly explain how parts of my product will work.</p>	<p>Draw on market research to inform design</p> <p>Use research of user's individual needs, wants and requirements for design</p> <p>Identify features of my design that will appeal to the intended user</p> <p>Create my own design criteria and specification</p> <p>Come up with innovative design ideas</p> <p>Follow and refine a logical plan.</p> <p>Use annotated sketches, crosssectional planning and exploded diagrams</p> <p>Make design decisions, considering, resources and cost</p> <p>Clearly explain how parts of my design will work, and how they are fit for purpose</p>

						Model and refine design ideas by making prototypes and using pattern pieces.  Use computer-aided designs	Independently model and refine design ideas by making prototypes and using pattern pieces  Use computer-aided designs
<b>Make</b>	<b>Expressive Arts and Design</b> (Creating with Materials) The children will: <b>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</b>	<b>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</b>  <b>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</b>		<b>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</b>  <b>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</b>			
	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 or voice recording  Understand different media can be combined for a purpose	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 my 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 my choices depending on characteristics.  Use finishing techniques to make my product look good  Work safely and hygienically	Select suitable tools/equipment, explain choices; begin to use them accurately  Select appropriate materials, fit for purpose.  Work through my plan in order  Consider how good my product will be  Begin to measure, mark out, cut and shape materials/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 and equipment, explain choices in relation to required techniques and use accurately  Select appropriate materials, fit for purpose; explain my choices  Work through my plan in order with greater independence.  Realise if my product is going to be good quality  Measure, mark out, cut and shape materials/components with some 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 a good level of precision  Produce suitable lists of tools, equipment and materials needed  Select appropriate materials, fit for purpose; explain my choices, considering functionality  Create and follow a detailed step-by-step plan  Explain how my 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	Use selected tools and equipment precisely  Produce suitable lists of tools, equipment and materials needed, considering constraints  Select appropriate materials, fit for purpose; explain my choices, considering functionality and aesthetics  Create, follow, and adapt detailed step-by-step plans  Explain how my product will appeal to an 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
<b>Evaluate</b>	<u>Expressive Arts and Design</u> (Creating with Materials) The children will: <b>Share their creations, explaining the process they have used.</b>	<b>Explore and evaluate a range of existing products</b>  <b>Evaluate their ideas and products against design criteria</b>		<b>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</b>			
	Adapt work if necessary  Dismantle, examine and talk about existing objects/structures  Consider and manage some risks  Practise some appropriate safety measures independently  Talk about how things work  Look at the similarities and differences between existing objects, materials and tools  Show an interest in technological toys  Describe textures	Talk about my work, linking it to what I was asked to do  Talk about existing products considering: use, materials, how they work, audience and where they might be used  Talk about existing products, and say what is and isn't good  Talk about things that other people have made  Begin to talk about what could make a 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 good existing products are  Talk about what I would do differently if I were to do it again and why	Look at my design criteria while designing and making  Use my design criteria to evaluate finished product  Say what I would change to make my design better  Begin to discuss existing products, considering: how well they have been made, materials, whether they work, how they have been made and fit for purpose  Begin to understand by whom, when and where products were designed  Learn about some inventors, designers, engineers, chefs and manufacturers of ground-breaking products	Refer to design criteria while designing and making  Use criteria to evaluate product  Begin to explain how I could improve original design  Discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made and fit for purpose  Discuss by whom, when and where products were designed  Research whether products can be recycled or reused  Know about some inventors, designers, engineers, chefs and manufacturers of ground-breaking products	Evaluate the quality of my design while designing and making  Evaluate my ideas and finished product against the specification, considering purpose and appearance.  Test and evaluate my final product  Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made and fit for purpose  Begin to evaluate how much products cost to make and how innovative they are  Research how sustainable materials are  Talk about some key inventors, designers, engineers, chefs and manufacturers of ground-breaking products	Evaluate the quality of my design while designing and making; is it fit for purpose?  Keep checking that my design is best it can be.  Evaluate my ideas and finished product against specification, stating if it is fit for purpose  Test and evaluate my final product; explain what would improve it and the effect different resources may have had  Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made and 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

							Discuss some key inventors, designers, engineers, chefs and manufacturers of ground-breaking products
<b>Technical Knowledge:</b> Materials and structures		<b>Build structures, exploring how they can be made stronger, stiffer and more stable</b>		<b>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</b>			
		Begin to measure and join materials, with some support  Describe differences in materials  Suggest ways to make a material or product stronger	Measure materials using standard units of measurement e.g. <i>cm</i>  Describe some different characteristics of materials  Join materials in different ways  Use joining, rolling or folding to make it stronger  Use my own ideas to try to make product stronger	Use appropriate materials  Work accurately to make cuts and holes  Join materials  Begin to make strong structures	Measure carefully to avoid mistakes  Attempt to make my product strong  Continue working on my product even if the original didn't work  Make a strong, stiff structure	Select materials carefully, considering intended use and appearance of my product  Explain how my product meets design criteria  Measure accurately enough to ensure precision  Ensure my product is strong and fit for purpose  Begin to reinforce and strengthen a 3D frame	Select materials carefully, considering intended use of my product, the aesthetics and functionality.  Explain how my product meets design criteria  Reinforce and strengthen a 3D frame
<b>Technical Knowledge:</b> Mechanisms		<b>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</b>		<b>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</b>			
		Explore and begin to use levers and slides	Use levers and slides  Begin to understand how to use wheels and axles	Select appropriate tools and techniques  Alter my product after checking, to make it better  Use simple lever and linkages to create movement	Select the most appropriate tools and techniques  Explain alterations to my product after checking it  Use levers and linkages to create movement  Use pneumatics to create movement	Refine my product after testing considering aesthetics, functionality and purpose  Begin to use cams, pulleys and gears to create movement	Refine my product after testing, considering aesthetics, functionality and purpose  Incorporate hydraulics and pneumatics  Use cams, pulleys and gears to create movement
<b>Technical Knowledge:</b> Textiles		Measure, cut and join textiles to make a product, with some support  Choose suitable textiles	Measure textiles  Join textiles together to make a product, and explain how I did it  Carefully cut textiles to produce accurate pieces  Explain choices of textile  Understand that a 3D textile structure can be	Join different textiles in different ways  Choose textiles considering appearance and functionality  Begin to understand that a simple fabric shape can be used to make a 3D textiles project	Think about user when choosing textiles  Think about how to make product strong  Begin to devise a template  Explain how to join things in a different way  Understand that a simple fabric shape can be used to make a 3D textiles project	Think about user and aesthetics when choosing textiles  Use own template  Think about how to make product strong and look better  Think of a range of ways to join things	Think about user's wants/needs and aesthetics when choosing textiles  Make product attractive and strong  Make a prototype  Use a range of joining techniques  Think about how product might be sold

			made from two identical fabric shapes.			Begin to understand that a single 3D textiles project can be made from a combination of fabric shapes	Think carefully about what would improve product  Understand that a single 3D textiles project can be made from a combination of fabric shapes
<b>Technical Knowledge:</b> Food and nutrition		<b>Use the basic principles of a healthy and varied diet to prepare dishes</b>  <b>Understand where food comes from.</b>		<b>Understand and apply the principles of a healthy and varied diet</b>  <b>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</b>  <b>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</b>			
	Begin to understand some food preparation tools, techniques and processes  Practise stirring, mixing, pouring, blending and spreading  Discuss how to make an activity safe and hygienic e.g. by washing hands  Discuss use of senses  Understand need for variety in food  Begin to understand that eating well contributes to good health	Describe textures  Wash hands & clean surfaces  Think of interesting ways to decorate food  Say where some foods come from, (i.e. plant or animal)  Describe differences between some food groups (i.e. sweet, vegetable etc.)  Discuss how fruit and vegetables are healthy  Cut, peel and grate safely, with support	Explain hygiene and keep a hygienic kitchen  Describe properties of ingredients and importance of varied diet  Say where food comes from (animal, underground etc.)  Describe how food is farmed, home-grown or caught  Create an eat well plate; explain that there are groups of food  Describe "five a day"  Cut, peel and grate with increasing confidence  Use kneading to make a dough	Discuss how to use equipment safely and be hygienic  Make my product look attractive  Think about how to grow plants to use in cooking  Carefully select ingredients  Begin to understand that food comes from the UK and wider world  Describe an eat well plate and how a healthy diet = variety/balance of food and drinks  Explain how food and drink are needed for active and healthy bodies.  Prepare and cook some dishes safely and hygienically  Grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	Discuss and create guidelines to be safe and hygienic  Think about presenting my product in interesting and attractive ways  Understand ingredients can be fresh, pre-cooked or processed  Begin to understand about food being grown, reared or caught in the UK or wider world  Explain the importance of food and drink for active, healthy bodies  Prepare and cook some dishes safely and hygienically  Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	Explain how to be safe and hygienic and follow own guidelines  Present my product well - interesting, attractive and fit for purpose  Begin to understand seasonality of foods  Understand food can be grown, reared or caught in the UK and the wider world  Describe how recipes can be adapted to change appearance, taste, texture and aroma  Explain how there are different substances in food and drink needed for health  Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source  Use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading, baking, roasting and boiling.	Understand a recipe can be adapted by adding / substituting ingredients  Explain seasonality of foods  Learn about food processing methods  Name some types of food that are grown, reared or caught in the UK or wider world  Adapt recipes to change appearance, taste, texture or aroma.  Describe some of the different substances in food and drink, and how they can affect health  Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source.  Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading, baking, roasting and boiling.

<b>Technical Knowledge:</b> Electrical Systems				<b>Understand and use electrical systems in their products [for example, series circuits]</b>			
					Use a simple circuit in my product  Use a number of components in circuit  Learn how to program a computer to control my product  Program a computer to control my product	Incorporate a switch into my product  Confidently use a number of components in circuit  Begin to be able to program a computer to monitor changes in environment and control my product	Use different types of circuit in my product  Think of ways in which adding a circuit would improve my product  Program a computer to monitor changes in environment and control my product
<i>The Following Section is Under Development</i>							
Autumn 1	All About Me  Fantastic Food	Superheroes	All at Sea	Funny Bones	Australia	Ancient Egypt	The World at War
Autumn 2	Tooth Tales	Out of Africa	Meerkat Madness	The Tin Forest	The Rotten Romans	An expedition to Antarctica	Chocolate!
Spring 1	Celebration  Monsters	Frozen Planet	Mini Masterchefs	The Savage Stone Age	Water World	Invaders and Settlers	The Amazing Amazon
Spring 2	Transport  Not a Box	Space	Tangled Tales	Tent-tastic Tales	Amazing Arachnids	Gold Rush	Winged Wonders
Summer 1	New Life  A Bug's Life	Dinosaurs	Art Attack	The Vile Victorians	Robots	The Space Race	The Ancient Greeks
Summer 2	Bog Babies  The Seaside	Magic	Fire! Fire!	We Are Explorers	The Terrible Tudors	Forces in Motion	Will-i-am Shakespeare