Knowledge and Skills Progression Document

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	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Developing, planning and communicating ideas	Explain what they are making and which materials they are using. Select materials from a limited range that will meet a simple design criteria e.g. shiny. Select and name the tools needed to work the materials e.g. scissors for paper. Explore ideas by rearranging materials. Describe simple models or drawings of ideas and intentions. Discuss their work as it progresses. of their ideas in card and paper or using ICT (if relevant) Communicate with others about how they want to construct their product Explain how they intend to fix simple materials	Begin to draw on their own experience to help generate ideas and research conducted on criteria. Begin to understand the development of existing products: Explain what they are for, how they work, what materials have been used. Start to suggest ideas and explain what they are going to do. Begin to develop their ideas through talk and simple drawings. Make templates and mock ups	Start to generate ideas by drawing on their own and other people's experiences. Begin to develop their design ideas through discussion, observation, drawing and modelling. Identify a purpose for what they intend to design and make. Understand how to identify a target group for what they intend to design and make based on a design criteria. Develop their ideas through talk and drawings and label parts. Make templates and mock ups of their ideas in card and paper or using ICT (if relevant) Begin to explain why they chose a certain material Develop their own ideas from given starting points	With growing confidence generate ideas for an item, considering its purpose and the user. Start to order the main stages of making a product. Identify a purpose and establish criteria for a successful product. Understand how well products have been designed, made, what materials have been used and the construction technique. Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. Start to understand whether products can be recycled or reused. Know to make drawings with labels when designing. When planning explain their choice of materials and components including function and aesthetics. Put together a step-by-step plan which shows	Start to generate ideas, considering the purposes for which they are designing. Confidently make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. Identify the strengths and areas for development in their ideas and products. When planning, consider the views of others (including intended users) to improve their work. Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. When planning explain their choice of materials and components according to function and aesthetic.	Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD. Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. With growing confidence apply a range of finishing techniques, including those from art and design Draw up a specification for their design, use results of investigations, information sources, including ICT when developing design ideas. With growing confidence select appropriate materials, tools and techniques. Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Produce a range of ideas after collecting information Produce a detailed step-by- step plan, suggest some alternative plans and say what the good points and drawbacks are about	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Accurately apply a range of finishing techniques, including those from art and design. Draw up a specification for their design- link with Mathematics and Science Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail. Identify the strengths and areas for development in their ideas and products. Know how much products cost to make and work within a given budget, know how sustainable and innovative they are and the impact products have beyond their intended purpose. Use market research to inform plans Follow and refine their initial plan if necessary , convincingly justify their plan to someone else

				the order and also what equipment and tools they need	Produce a plan and explain it to others	each Explain how their product will appeal to the audience	Show consideration to culture and society in a design Explain how their product should be stored justifying with reasons Suggest ideas about how their product could be sold
Working with tools, equipment, materials and components to make quality products	Begin to create their design using basic techniques. Start to build structures, joining components together. Look at simple hinges, wheels and axles. Use technical vocabulary when appropriate. Begin to use scissors to cut straight and curved edges and hole pinches to punch holes. Explore using/ holding basic tools such as a saw or hammer. Use adhesives to join material.	Begin to make their design using appropriate techniques. Begin to 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. Identify and talk about products which use electricity to make them work With help measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely, join and combine materials and components together using a variety of methods Begin to use	Begin to select tools and materials; use correct vocabulary to name and describe them. Build structures, exploring how they can be made stronger, stiffer and more stable. With help measure, cut and score with some accuracy. Select the best tools and materials and use appropriately. Start to assemble, join and combine materials in order to make a product – e.g. a pop up card Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques, including running stitch. Start to choose and use appropriate finishing techniques based on own ideas. Be able to join things (materials/ components) together in different ways Measure materials to use in a model or	Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Start to understand that mechanical and electrical systems have an input, process and output. Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. Know how simple electrical circuits and components can be used to create functional products. Measure, mark out, cut, score and assemble components with more accuracy. Start to work safely and accurately with a range of simple tools. Adapt and improve designs as they make	Select a wider range of tools and techniques for making their product safely. Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. Start to join and combine materials and components accurately in temporary and permanent ways. Know how mechanical systems such as cams or pulleys or gears create movement. Understand how more complex electrical circuits and components can be used to create functional products. Continue to learn how to program a computer to monitor changes in the environment and control their products. Understand how to reinforce and strengthen a 3D framework. Sew using a range of different stitches, to weave and knit. Demonstrate how to measure, tape or pin, cut and join fabric with some	Select appropriate materials, tools and techniques e.g. 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. Understand how mechanical systems such as cams or pulleys or gears create movement. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Understand that mechanical and electrical systems have an input, process and output. Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately With growing confidence cut and join with accuracy to ensure a good-quality finish to the product Weigh and measure accurately (time, dry ingredients, and	Confidently select appropriate tools, materials, components and techniques and use them. Use tools safely and accurately. Assemble components to make working models. Aim to make and to achieve a quality product. With confidence pin, sew and stitch materials together to create a product. Demonstrate when make modifications as they go along. Construct products using permanent joining techniques. Understand how mechanical systems such as cams or pulleys or gears create movement. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Know how to reinforce and strengthen a 3D framework. Understand that mechanical and electrical systems have an input, process and output. Use finishing techniques to strengthen and improve the

		simple finishing techniques to improve the appearance of their product. Make a product which moves Select appropriate resources and tools for their building projects	structure Create working circuits to light a bulb or work a buzzer Attach features to a vehicle (e.g. an axel and wheels)	their product. Start to measure, tape or pin, cut and join fabric with some accuracy. Attempt to make sure that their product looks attractive Make choices of material both for its appearance and qualities Select the most appropriate tools and techniques and use accurately and safely Try alternative ways of fixing something if the first attempt is not successful Create and use simple gears, pulleys, cams, levers and linkages Build models incorporating circuits with buzzers and bulbs	accuracy. Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. Measure carefully and show initiative to check so as not to make mistakes Persevere with their product even though their original idea might not have worked Use pulleys, levers and linkages in their product Build a model which incorporates a motor Create a more complex pop up (e.g. card)	liquids). Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. Use a range of tools and equipment expertly Make up a prototype first Measurement accurately to ensure that everything is precise Demonstrate motivation/perseverance to refine and improve their products Create a 3D product using a range of materials and sewing techniques Incorporate switches to turn on and off into models made.	appearance of their product using a range of equipment including ICT Combine fabric to make a high quality product for a purpose Use a craft knife, cutting mat and safety ruler with close supervision (one to one) Make decisions and select the most appropriate mechanical system for a particular purpose
Evaluating processes and products	Say what they like and do not like about items they have made and attempt to say why. Begin to talk about their designs as they develop and identify good and bad points. Start to talk about changes made during the making process. Discuss how closely their finished products meet their design criteria.	Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). When looking at existing products explain what they like and dislike about them. Begin to evaluate their products as they are developed, identifying	Evaluate their work against their design criteria. Look at a range of existing products explain what they like and dislike about them and why. Start to evaluate their products as they are developed, identifying what went well and possible changes they might make next time. With confidence talk about their ideas	Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose Suggest some improvements and say what was good and not so good about their original design Begin to disassemble and evaluate familiar products and consider the views of others to improve them. Begin to evaluate how	Evaluate their work both during and at the end of the assignment. Evaluate their products carrying out appropriate tests. Be able to disassemble and evaluate familiar products and consider the views of others to improve them. Evaluate how the key designs of individuals in design and technology have helped shape the world.	Start to evaluate a product against the original design specification and by carrying out tests. Evaluate their work both during and at the end of the assignment. Begin to seek evaluation from others. Evaluate how the key designs of individuals in design and technology have helped shape the world. Evaluate appearance and function against original criteria	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels. Evaluate against their original criteria and suggest ways that their product could be improved. Evaluate how the key designs of individuals in design and technology have helped shape the world.

		strengths and possible changes they might make next time.		the key designs of individuals in design and technology have helped shape the world..	Suggest some improvements and say what was good and not so good about their original design Begin to explain how they can improve their original designs Evaluate their product, thinking of both appearance and the way it works		Test and evaluate their final product Evaluate if their product meets all design criteria Justify why they selected specific materials
Food and Nutrition	Begin to develop a food vocabulary using taste, smell, texture and feel. Explore familiar food products e.g. fruit and vegetables. Stir, spread, knead and shape a range of food and ingredients. Begin to work safely and hygienically. Start to think about the need for a variety of foods in a diet. Measure and weigh food items, non-statutory measures e.g. spoons, cups	Begin to understand that all food comes from plants or animals. Explore common food sources (e.g. from food or animals) Start to understand how to name and sort foods into the five groups in (e.g. could use the 'The Eat well plate') Know that everyone should eat at least five portions of fruit and vegetables every day (check current guidelines!) Know how to prepare simple dishes safely and hygienically, without using a heat source. Know how to	Understand that all food comes from plants or animals. Develop understanding of where different foods come from (e.g. foods which are farmed, grown elsewhere (e.g. home) or caught) and also food from native to different countries. Understand how to name and sort foods into the five groups in (e.g. could use the 'The Eat well plate') Know that everyone should eat at least five portions of fruit and vegetables every day (check current guidelines!) Recognise the need for a variety of food in a diet Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. Demonstrate how to use techniques such	Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand how to prepare and cook a variety of dishes including experience of using a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know how a healthy diet is made up from a variety and balance of different food and drink Begin to know that to be active and healthy, food and drink are needed to provide energy for the body (and begin to distinguish healthy high energy foods)	Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand how to prepare and cook a variety of predominantly savoury dishes including experience of using a heat source. Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Measure and weigh ingredients appropriately Explain why a healthy diet is important Know that to be active and healthy, food and drink are needed to provide energy for the body and identify healthy high energy foods)	Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Begin to understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes including the use of a heat source Demonstrate increasing confidence in how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Evaluate a meal and consider if they contribute towards a balanced diet Begin to understand that different food and drink contain different substances (nutrients, water and fibre) that are needed for health	Explain how ingredients were grown, reared and caught. Understand that seasons may affect the food available. Explain how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including the use of a heat source Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know different food and drink contain different substances (nutrients, water and fibre) that are needed for health. Use appropriate tools and equipment, weighing and measuring with scales. Plan a healthy and affordable diet

		use techniques such as cutting, peeling and grating. Measure and weigh food items using non-standard measures (e.g. spoons and cups)	as cutting, peeling and grating Make dishes from other countries (if relevant to learning theme)	Be able to identify foods which come from the UK and other countries in the world	Understand what to do to be hygienic and safe Become familiar with some of the processes that foods go through to preserve them/make them more appealing	Explain what times of year particular foods are eaten in Describe what to do to be hygienic and safe Use appropriate tools and equipment, weighing and measuring with scales.	