Design and Technology Progression

Research, plan and design.	Year 1	- Identify some key features of an existing product. - Generate some ideas of their own. - Plan an outcome through pictures with labels/annotations. - Can explain their ideas orally.
	Year 2	- Generate ideas through comparing existing products. - Plan an innovative product. - Magpie features from existing products. - Identify appropriate tools and materials explaining their choices. - Describe their design by using pictures, diagrams and words.
	Year 3	- Plan and design using accurate diagrams and labels. - Identify and plan the equipment/tools needed and give reasons why. - Order the main stages of making their product. - Identify a design criteria and establish a purpose/audience for their product. - Create realistic plans e.g. what tools, equipment, materials and processes they will use. - Adapt or improve their original ideas - Explain why they have selected specific materials for their design/product - Begin to communicate influences of their design/product through clear explanations and designs
	Year 4	- Plan and design using accurate diagrams and labels and to be able to give fluent explanations for their choices of materials. - Create a final design for their product based on initial ideas and research based on existing products and ideas. - Create a detailed plan considering their target audience, design criteria and intended purpose. - Use a range of sources e.g. books, internet, museums to influence their ideas. - Discuss how a range of factors influences design from different cultures.
	Year 5	- Identify their target audience and use this to generate ideas. - Take a user's view into account when designing. - Produce a detailed step-by-step plan for their design method. - Suggest some alternative design and compare the benefits and drawbacks to inform the design process and outcome. - Discuss how a range of factors influences designs and aesthetics from different cultures
	Year 6	- Apply a range of information to inform their design. - Carry out market research to inform plans such as: surveys, interviews, questionnaires and internet research. - Develop design specifications while working within constraints e.g. time, resources or cost. - Justify their plan to someone else and communicate their design ideas using annotated sketches, ICT and other methods. - Consider culture and society in their designs – target demographic. - Consider the use of the product when selecting materials. - Research how their product could be marketed through packaging and advertising. - Find evidence to support or refute whether their ideas and designs will/won't work using specific constraints e.g. time, resources and costs

Construction	Year 1	- Explain what they are making. - Select appropriate resources and tools. - Explain which tools they are using and why. - Know how to and use tools safely. - Use found items/junk-modelling to create. - Make a product which moves - Cut materials using scissors - Describe the materials using different words - Arrange pieces of the construction before building - Make a structure/model using different materials
	Year 2	- Join materials and components together in different ways. - Measure materials to use in a model or structure. - Select appropriate tools for a task. - Cut a variety of materials using a range of tools - Join materials together to create a product - Describe materials and their properties using a range of vocabulary - Make sensible choices of which material to use for their construction - Identify how to and make their structure stronger, stiffer or more stable
	Year 3	- Use equipment and tools accurately and safely. - Select the most appropriate materials, tools and techniques to use. - Manipulate materials using a range of tools and equipment. - Measure, cut and assemble with increasing accuracy. - Join materials effectively to build a product. - Use a range of techniques to shape and mould materials. - Use finishing techniques e.g. sanding, varnishing, glazing etc. - Join textiles of different types in a range of ways - Choose textiles both for their appearance and also qualities - Begin to use a range of simple stitches - Use a range of fabrics to weave a pattern
	Year 4	- Use equipment and tools with increased accuracy and safety. - Select the most effective materials, tools and techniques to use. - Manipulate materials effectively and accurately using a range of tools and equipment. - Measure, cut and assemble accurately explaining the process verbally. - Apply their understanding of how to strengthen, stiffen and reinforce more complex structures - Apply their understanding of computing to program, monitor and control or design their products - Understand and use electrical systems in their products e.g. series of circuits incorporating switches, bulbs, buzzers and motors. - Measure accurately to build effective structures. - Use a range of techniques to shape and mould.

		- Experiment with a range of techniques to increase stability in a structure. - Use finishing techniques, showing an awareness of audience. e.g. sanding, varnishing, glazing etc. - Consider which materials are fit for purpose and join them appropriately - Devise a template or pattern for their product
	Year 5	- Choose appropriate tools and materials to ensure that the final product will appeal to the audience. - Utilise a range of tools and equipment with good accuracy and effectiveness within established safety parameters. - Refine their product after testing it - Incorporate hydraulics and pneumatics into their design and end product - Measure accurately to ensure precision. - Refine and further improve their product - Build an image using fabrics
	Year 6	- Choose appropriate tools and materials to ensure that the final product will appeal to the audience. - Utilise a range of tools and equipment with good accuracy and effectiveness within established safety parameters. - Identify and begin to explore specialist tools, techniques and processes. - Understand and use electrical components in their design. - Use different kinds of circuits in their product to improve it. - Apply measurements accurately to scale, according to design plans, ensuring precision. - Refine and further improve their product.
Evaluate.	Year 1	- Describe how their product works. - Identify successes and next steps. - Make links between their own designs and products and another designer - Evaluate their own and others' artwork and make suggestions for improvement
	Year 2	- Assess how well their product works through testing. - Explain what they would change if they were going to make their product again. - Explain what prior knowledge helped them to form their designs. - Make comparisons between their own artwork and other artists or designers - Articulate what they are trying to express in their own designs and products - Make suggestions for improvement in their own and others' products
	Year 3	- Think about their ideas as they make progress and be willing to make changes if this helps them to improve their work. - Assess how well their products work in relation to the purpose. - Explain how they could change their design to make it better. - Evaluate their learning process and make suggestions for improvement in their own and others' product/ design.
	Year 4	- Think about their ideas as they progress and alter the design to make improvements. - Asses how well their product works in relation to the design criteria and the intended purpose. - Explain how they could improve their design and how their improvement would affect the original outcome. - Critique their own and others' design/product throughout the learning process to develop and support each other
	Year 5	- Create and evaluate a prototype before creating a final outcome. - Continuously check that their design is effective and fit for purpose.

		- Assess how well their product works in relation to the design criteria and the intended purpose and suggest improvements. - Evaluate appearance and function against the original design criteria. - Critique their own and others' design/product throughout to develop and support each other and offer solutions to design problems.
	Year 6	- Create and evaluate a prototype before creating a final outcome. - Test and evaluate their final product. - Explore if different resources could have improved their product, explaining what it would have improved. - Research and explore what information they would need to make improvements. - Ensure their product meets all design criteria and explain why it does. - Identify and understand the impact the product has on individuals, society and the environment. - Identify and address their own design problems during the construction process. - Critique, evaluate and demonstrate that their product is strong and fit for purpose. - Refine their product after testing it and explain what they have improved and why. - Experiment with combining different materials exploring what makes them effective - Compare their design to X, explaining the effectiveness of both products mechanical components - Explain their own design or construction and what has influenced their choices
Food, health and nutrition	Year 1	- Explain that some ingredients need to be prepared before they can be eaten - Explain that some equipment has a special job and know what that special job is, e.g. colander, peeler. - Understand that food is a basic requirement of life - Understand that we need food to grow, be active and maintain health - Talk about foods they like and dislike with reasons - Identify a wide variety of fruit and vegetables available which can be grouped and individually named - Explain the important social aspects of food and how families in the past ate - Show a deeper understanding of the country they are studying, their food and customs - Assess a healthy plate and improve, explaining their choices - Make food choices that are based on a number of factors, such as health, event, hygiene, growing
	Year 2	- Use a range of simple equipment - Use basic cooking skills to make a dish - Identify that different foods need to be stored differently - Explain the hygiene and safety rules, which need to be followed before, during and after cooking - Explain that people eat different food and meals according to the time of day, who they are and the occasion - Sort a selection of foods into the eat-well food groups - Recognise the 5 groups from the eat-well plate - Put together a balanced meal by choosing foods from different food groups - Know that everyone should eat at least 5 portions of fruit and vegetables every day - Use basic food handling, hygienic practices and personal hygiene, including how to control risk by following simple instructions - Experience food from a different culture and explain their opinion about it. - Explain the part that food plays in special social occasions - Consider that food processing can affect appearance, texture, odour and taste of food

Food, health and nutrition		- Assess a healthy plate and improve, explaining their choices - Make food choices that are based on a number of factors, such as health, event, hygiene, growing
	Year 3	- Understand that diets around the world are based on similar food groups - Know and find out that food is prepared in different ways due to a number of factors, including country, culture, custom and religion - Use the eat-well plate and consider the needs of different people when planning and cooking food - Suggest and demonstrate healthier ways to prepare and cook foods - Read and interpret basic nutrition information on food packaging when making choices - Research, plan and prepare food appropriate for a range of different occasions - Consider that people have different preferences and dietary requirements - Understand the important social aspects of food and how families in the past used to eat - Assess how well their recipe/meal works in relation to the purpose - Explain how they could change their recipe to make it better Assess how well their meal/recipe works in relation to the design criteria and the intended purpose - Explain how they could improve their recipe and how their improvement would affect the original outcome
	Year 4	- Know and find out that food is prepared in different ways due to a number of factors, including country, culture, custom and religion - Use the eat-well plate and consider the needs of different people when planning and cooking food - Suggest and demonstrate healthier ways to prepare and cook foods - Read and interpret basic nutrition information on food packaging when making choices - Research, plan and prepare food appropriate for a range of different occasions - Identify the taste and texture of the product - Explain the importance of hygienic food preparation and storage - Experience food from a different culture and comment on their opinions - Assess how well their recipe/meal works in relation to the purpose - Explain how they could change their recipe to make it better - Assess how well their meal/recipe works in relation to the design criteria and the intended purpose
	Year 5	- Write and follow recipes - Weigh and measure accurately - Understand that different types of food provide different amounts of energy - Demonstrate how different amounts of food, known as portions, provide different amounts of energy - Explain that all food and drink provide nutrients - Explain that other nutrients include vitamins and minerals, which are needed to keep the body healthy - Adapt a recipe by adding or substituting an ingredient - Change ingredients by using a heat source - Recognise that there is a wide variety of food products from different cultural traditions - Recognise that different food products are an important part of a balanced diet - Recognise that food around the world is prepared in different ways, sometimes because of culture, customs and religion - Know about a country and how its customs and culture can affect the food people eat - Evaluate food based on its purpose, i.e. for exercise

		- Explain why food is important beyond health and nutrition and make choices for this
	Year 6	- Demonstrate an extended range of food skills and techniques - Describe how food can spoil and decay due to the action of microbes, insects and other pests - Explain how to use date marks and food storage instructions on food packaging - Demonstrate good personal hygiene and safety when cooking - Recognise that the amount of energy and nutrients provided by food depends on the portion eaten - Understand that energy is provided by the nutrients, carbohydrates fat and protein - Understand the functions of different nutrients - Recognise the nutrients provided by each section of the eat-well plate - Recognise that food around the world is prepared in different ways, sometimes because of culture, customs and religion - Know about a country and how its customs and culture can affect the food people eat - Evaluate food based on its purpose, i.e. for exercise - Explain why food is important beyond health and nutrition and make choices for this

Design and Technology Vocabulary

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mechanical, materials, designer, product, construct, structure, moving parts, tools, outcome, equipment. make, farm, planting, animals, growth, ingredients, cooking, equipment, diet, texture, healthy lifestyle, taste, fruit, vegetables, traditions, hygiene, safety, clean, balanced, portion, appearance, smell, country, culture, custom *equipment language and skill language will be specific to what you are making	Strong, components, stable, diagram, joining, folding, rolling, template, assemble make, farm, planting, animals, growth, ingredients, cooking, equipment, diet, texture, healthy lifestyle, taste, fruit, vegetables, traditions, hygiene, safety, occasion, clean, active, balanced, portion, appearance, smell, country, culture, custom *equipment language and skill language will be specific to what you are making	criteria, stable, strong, durable, audience, packaging diet, hygiene, contamination, meals, produce, fresh foods, nutrition, carbohydrates, protein, sugars, eat well, processed foods, variety, preparation, food groups, healthy lifestyle, farming, demonstrate, prepare, interpret, package, appropriate, raw, availability, seasons pre-cooked, processed fresh, planning cooking *equipment language and skill language will be specific to what you are making	mechanism function, purpose, finish, model, functional products, input, output diet, hygiene, contamination, meals, produce, fresh foods, nutrition, carbohydrates, protein, sugars, eat well, processed foods, variety, preparation, food groups, healthy lifestyle, farming, demonstrate, prepare, interpret, package, appropriate, raw, availability, seasons pre-cooked, processed fresh, planning cooking *equipment language and skill language will be specific to what you are making	Products, components, inventors, innovate, complex, reinforce, strengthen, adapt, substitute, designers hygiene, processed foods, nutrition (protein, carbohydrates, protein, sugars, fats, sodium, fibre), diet, cross contamination, events, occasions, catering, vitamins, minerals, storage, traditions, equipment, products, adding, substituting, variety, proportion *equipment language and skill language will be specific to what you are making.	precision, prototype, sequential diagram, specifications, abrasive, components, modify hygiene, processed foods, nutrition (protein, carbohydrates, protein, sugars, fats, sodium, fibre), diet, cross contamination, events, occasions, catering, vitamins, minerals, storage, traditions, equipment, products, adding, substituting, variety, proportion *equipment language and skill language will be specific to what you are making.