

## Design and Technology Key Stage 2 Curriculum Subject Skills Progression

### Purpose of Study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

**Nurture** – By nurturing their creative minds, we encourage all children to learn how to take risks with design and technology, becoming resourceful and imaginative pupils. Our hope is that by nurturing different ideas, needs and wants, to meet a design brief, this will improve their skills as well as their confidence to work independently.

**Cherish** – We are surrounded by the results of design and technology, of historical and conventional value. We encourage all children to appreciate and admire them, often from global inventions and ideas from different cultures. During their school career, children learn that resources, including food, are to be protected and respected by all who use them (in the classroom and on a global scale).

**Shine** – Through evaluation of their own and others work, including design and technology in the past, children develop critique skills, and learn how to use these effectively to improve designs. Children have the opportunity to showcase their design and technology products individually or as part of a group. Extra Design and Technology 'days' in addition to the planned curriculum give opportunities for all children to shine.

**Flourish** – As teachers we motivate all children to flourish as enterprising and capable citizens. We inspire children by showcasing important developments in design and technology, allowing them to choose and follow their own choices. We inspire children to have confidence to ask questions, be ambitious and draw on their associated knowledge of STEM subjects to allow them to flourish.

Skill	Year 3	Year 4	Year 5	Year 6	End of Key Stage expectations	Vocabulary
Design	I prove that my design meets some set criteria.	I use ideas from other people when I am designing.	I come up with a range of ideas after collecting information from different sources.	I use market research to inform my plans and ideas.	Use research and develop design criteria to inform the design of innovative,	research, develop, structure society, functional, appealing, budget, criteria

		I show awareness of who the product is being designed for.	I explain how a product will appeal to a specific audience.	I show that I consider suture and society in my design.  I work within a budget.	functional, appealing products that are fit for purpose, aimed at particular individuals or groups	
	<p>I follow a step-by-step plan, choosing the right equipment and materials.</p> <p>I design a product and make sure that it looks attractive.</p>	<p>I produce a plan and explain it.</p> <p>I present a product in an interesting way.</p>	<p>I produce a detailed step-by-step plan.</p> <p>I suggest alternative plans; outlining the positive features and drawbacks.</p> <p>I make a prototype before I make a final version.</p>	<p>I follow and refine my plans.</p> <p>I justify my plans in a convincing way.</p> <p>I explain how products should be stored and give reasons.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>equipment, materials, product, attractive, annotate, diagrams: cross-sectional and exploded, prototypes, pattern pieces, computer aided design (CAD), justify, convince</p>
<b>Make</b>	<p>I select the most appropriate tools and techniques for a given task.</p> <p>I work accurately to measure, make cuts and holes.</p>	<p>I measure accurately and choose appropriate tools, equipment and techniques.</p>	<p>I use a range of tools and equipment competently.</p> <p>I understand the importance of making accurate measurements.</p>	<p>I can independently select and use a range of tools and equipment.</p> <p>I construct products using permanent joining techniques</p>	<p>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p>	<p>appropriate tools, techniques, accuracy, competent, cutting, shaping, joining</p>

				I pin, sew and stitch materials together create a product		
	I choose a material for both its suitability and its appearance.	I can explain why I have chosen a particular material or component.	I can explain and evaluate my choice of materials.	I can independently select from a wide range of materials and explain and evaluate my choices.	Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities - construction materials	suitability, appearance, components, functionality, aesthetic, construction, materials
	I choose a material for both its suitability and its appearance.	I can explain why I have chosen a particular textile.	I can explain and evaluate my choice of textiles.	I know that a 3D textiles product can be made from a combination of fabric shapes	Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities - textiles	suitability, appearance, components, functionality, aesthetic, construction, textiles
	I describe how food ingredients come together.	I can explain why I have chosen a particular ingredient.	I can explain and evaluate my choice of ingredients.	I understand which ingredients can and cannot be substituted in a recipe	Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities - ingredients	suitability, appearance, components, functionality, aesthetic, construction, ingredients

<b>Evaluate</b>	I prove that my design meets some set criteria.	I use ideas from other people when I am designing.  I evaluate products for both their purpose and appearance.	I come up with a range of ideas after collecting information from different sources.	I use market research to inform my plans and ideas.	Investigate and analyse a range of existing products	investigate, analyse, evaluate, research,
	I can evaluate other people's work.  I can say whether my design meets the given criteria.	I evaluate and suggest improvements for my designs.  I explain how I have improved my original design.  I persevere and adapt my work when my original ideas do not work.	I evaluate appearance and function against original criteria.	I show that I can test and evaluate my products.  I evaluate my product against clear criteria.	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	investigate, analyse, evaluate, research, test, improve
	I can investigate a designer and use their work as inspiration for my own designs.	I investigate where products were designed and made	I can investigate why certain products were designed and made.	I investigate how well products work and why.  I can reflect on how designs have changed and been adapted over time.  I show that I consider culture and	Understand how key events and individuals in design and technology have helped shape the world	

				society in my plans and designs.		
<b>Technical Knowledge</b>	I know how to make strong, stiff shell structures	I know what materials are best used to create a strong, stiff structure.	I know how to join materials to create a 3D object.	I know how to reinforce/strengthen a 3D framework	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	strengthen, stiffen, reinforce, complex structures
	I make a product which uses both electrical and mechanical components.	I can explore different mechanical systems and follow instructions to create a product.	I understand how cams, pulleys and gears create movement	I can choose a mechanical system to achieve the desired effect.	Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	mechanical systems, gears, pulleys, cams, levers, linkages,
	I make a product which uses both electrical and mechanical components.	I understand how simple electrical circuits and components can be used to create functional products	I understand how more complex electrical circuits and components can be used to create functional products	I can choose electrical circuits and components to create functional products with the desired effect.	Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	electrical systems, series circuits, switches, bulbs, buzzers, motors
	I can explore how programming can achieve a desired outcome.	I understand how programming can be used to achieve a desired outcome.		I understand how to program a computer to monitor changes in the environment / control their products	Apply their understanding of computing to program, monitor and control their products	monitor, control
<b>Cooking and nutrition</b>	I know how a healthy diet is made up from a variety	I know that to be active and healthy, food and drink are	I evaluate a meal and consider if it	I know different food and drink contain different	Understand and apply the principles	healthy, varied, balanced, diet, food groups

	and balance of different food and drink	needed to provide energy for the body and identify healthy high energy foods	contributes towards a balanced diet	substances (nutrients, water and fibre) that are needed for health	of a healthy and varied diet	
	I understand how to prepare and cook a variety of dishes including experience of using a heat source.	I know how to be both safe and hygienic when using food.	I show that I can be both hygienic and safe in the kitchen.  I weigh and measure accurately (time, dry ingredients, liquids)	I know how to prepare and cook a variety of predominantly savoury dishes including the use of a heat source	Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	safe, hygienic, savoury, bake, boil, grill, roast, fry, steam, microwave
	I identify foods which come from the UK and other countries in the world		I know that food ingredients can be fresh, pre-cooked and processed	I explain how ingredients were grown, reared and caught.  I understand that seasons may affect the food available.	Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	fresh, processed, season, grown, reared, caught