

Progression of Skills at Whittlefield Primary School



Subject: <i>Design Technology</i>	By the end of <i>KS1</i>	By the end of <i>LKS2</i>	By the end of <i>UKS2</i>
<i>Design</i>	<ul style="list-style-type: none"> • To design purposeful, functional and appealing products for themselves (Year 1) and others (Year 2) based on design criteria. • To generate, develop and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. 	<ul style="list-style-type: none"> • To use research to design products that are fit for a purpose, aimed at particular individuals or groups. • To generate, develop, and communicate their ideas through discussion, annotated sketches and information and communication technology. • Create a design criteria 	<ul style="list-style-type: none"> • To 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. • To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Create a design criteria
<i>Make</i>	<ul style="list-style-type: none"> • To select from and use a range of tools and equipment to perform practical tasks (cutting, shaping, joining, finishing). • To select from and use a wide range of materials and components, including constructions materials, textiles (Year 2) and ingredients (Year 1), 	<ul style="list-style-type: none"> • To select from and use a wider range of tools and equipment to perform practical tasks (cutting, shaping, joining and finishing). • To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, 	<ul style="list-style-type: none"> • To select from and use a wider range of tools and equipment to perform practical tasks (cutting, shaping, joining and finishing) accurately. • To select from and use a wider range of materials and components, including construction materials, textiles and ingredients,

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	according to their characteristics.	according to their characteristics.	according to their functional properties and aesthetic qualities.
Evaluate	<ul style="list-style-type: none"> To explore (Year 1) and evaluate (Year 2) a range of existing products. To evaluate their ideas and products (Year 1) against design criteria (Year 2). 	<ul style="list-style-type: none"> To investigate a range of existing products. To evaluate their ideas and products against the design criteria and consider the views of others to improve their work. 	<ul style="list-style-type: none"> To investigate and analyse a range of existing products. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. To understand how key events and individuals in design and technology have helped shape the world (Year 6).
Technical knowledge	<ul style="list-style-type: none"> To build structures, exploring how they can be made stronger, stiffer and more stable (Year 1). To explore and use mechanisms (levers, sliders, wheels and axles) in their products (Year 2). 	<ul style="list-style-type: none"> To develop their understanding of how to strengthen, stiffen and reinforce structures. To explore and use mechanical systems in their products (gears, pulleys, cams, levers and linkages) (Year 3). To explore and use electrical systems in their products (series circuits incorporating switches, bulbs, and buzzers) (Year 4). 	<ul style="list-style-type: none"> To apply their understanding of how to strengthen, stiffen and reinforce more complex structures (Year 5). To understand and use mechanical systems in their products (gears, pulleys, cams, levers and linkages) (Year 5). To understand and use electrical systems in their products (series circuits incorporating switches, bulbs, buzzers and motors) (Year 6). To apply their understanding of computing to programme, monitor and control their products (Year 6).



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<p>Cooking and Nutrition</p>	<ul style="list-style-type: none"> • Use the basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from. 	<ul style="list-style-type: none"> • Understand and apply the principles of a healthy and varied diet • Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet • Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes] • Understand the source, seasonality and characteristics of a broad range of ingredients. 	<ul style="list-style-type: none"> • Understand and apply the principles of a healthy and varied diet • Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet • Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes] • Understand the source, seasonality and characteristics of a broad range of ingredients.
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Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria



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- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- 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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- 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.

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Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- 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

- 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

- 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

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

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Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key stage 2

- 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.

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Band 1 (5 statements)	Band 2 (9 statements)
<p>Cooking and Nutrition Say where some food comes from and give examples of food that is grown</p>	<p>Cooking and Nutrition Understand the need for a variety of food in a diet</p>
<p>Processes Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing</p>	<p>Cooking and Nutrition Understand that all food has to be farmed, grown or caught</p>
<p>Processes Use a range of simple tools to cut, join and combine materials and components safely</p>	<p>Processes Design purposeful, functional, appealing products for himself/herself and other users based on design criteria</p>
<p>Processes Ask simple questions about existing products and those that he/she has made</p>	<p>Processes Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p>
<p>Processes Use wheels and axles in a product</p>	<p>Processes Choose appropriate tools, equipment, techniques and materials from a wide range</p>
	<p>Processes Safely measure, mark out, cut and shape materials and components using a range of tools</p>
	<p>Processes Evaluate and assess existing products and those that he/she has made using a design criteria</p>
	<p>Processes Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable</p>
	<p>Processes Explore and use mechanisms e.g. levers, sliders, wheels and axles, in his/her products</p>

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Band 3 (5 statements)	Band 4 (8 statements)	Band 5 (7 statements)	Band 6 (3 statements)
<p>Cooking and Nutrition Use a wider variety of ingredients and techniques to prepare and combine ingredients safely</p>	<p>Cooking and Nutrition Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active</p>	<p>Cooking and Nutrition Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable / tasty to eat</p>	<p>Processes Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>
<p>Processes Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes</p>	<p>Cooking and Nutrition Understand seasonality and the advantages of eating seasonal and locally produced food</p>	<p>Processes Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product</p>	<p>Processes Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products he/she have made</p>
<p>Processes Safely measure, mark out, cut, assemble and join with some accuracy</p>	<p>Cooking and Nutrition Read and follow recipes which involve several processes, skills and techniques</p>	<p>Processes Create prototypes to show his/her ideas</p>	<p>Processes Apply his/her understanding of computing to program, monitor and control his/her product</p>
<p>Processes Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them</p>	<p>Processes Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience</p>	<p>Processes Make careful and precise measurements so that joints, holes and openings are in exactly the right place</p>	
<p>Processes Investigate and analyse existing products and those he/she has made, considering a wide range of factors</p>	<p>Processes Create designs using exploded diagrams</p>	<p>Processes Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work</p>	
	<p>Processes Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user</p>	<p>Processes Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable</p>	
	<p>Processes Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas</p>	<p>Processes Understand how to use more complex mechanical and electrical systems</p>	
	<p>Processes Understand and use electrical systems in products</p>		