

Design and Technology Progression of Knowledge and Skills

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will 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 will be taught to:

Design	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 computer-aided design
Evaluate	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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.

Cooking and nutrition

As part of their work with food, pupils will 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 will be taught to:

- 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.

Long-Term Plan

	Lower KS2		Upper KS2	
Topic	Year 3	Year 4	Year 5	Year 6
Structures	Stone Age shelters	Earthquake-proof buildings		
Mechanical Systems		Moving toys	Water wheels	
Electrical Systems		Safari trucks		Fairground rides
Textiles			Prayer mats	Christmas stockings
Cooking and Nutrition	Dips and dippers			WW2 food

In Lower Key Stage 2 and Upper Key Stage 2 pupils at Waverley Abbey will be able to (red = knowledge, green = skills):

Skill	Lower Key Stage 2 (Years 3 and 4)	Upper Key Stage 2 (Years 5 and 6)
<p>Design Understanding contexts, users and purposes</p> <p>Generating, developing, modelling and communicating ideas</p> <p>Planning</p>	<ul style="list-style-type: none"> ● gather information about user needs; ● develop their own design criteria; ● describe the user, purpose and design features of their products and explain how they will work. ● generate realistic ideas based on user needs; ● use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design. 	<ul style="list-style-type: none"> ● carry out research; ● develop a simple design specification; ● describe the user, purpose and design features of their products and explain how they will work. ● generate innovative ideas drawing on research; ● use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design.
<p>Make Planning</p> <p>Practical skills and techniques</p>	<ul style="list-style-type: none"> ● order the main stages of making; ● select suitable tools, equipment, materials and components and explain their choices. ● follow procedures for safety and hygiene; ● use a wider range of materials and components; ● measure, mark out, cut, shape, assemble, join, combine and finish with <i>some</i> accuracy. 	<ul style="list-style-type: none"> ● formulate lists of resources and step-by-step plans; ● select suitable tools, equipment, materials and components and explain their choices. ● follow procedures for safety and hygiene; ● use a wider range of materials and components; ● measure, mark out, cut, shape, assemble, join, combine and finish with accuracy.
<p>Evaluate Own ideas and products</p> <p>Existing products</p>	<ul style="list-style-type: none"> ● evaluate their ideas and products against their design criteria. ● investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; ● know why materials have been chosen, the methods of construction used and how well they work. 	<ul style="list-style-type: none"> ● identify strengths and areas to develop in their ideas and products against their design specification; ● consider the views of others to make improvements. ● investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; ● know why materials have been chosen, the methods of construction used, how well they work, and how innovative and sustainable they are.
<p>Technical Knowledge Making products work</p>	<ul style="list-style-type: none"> ● know that materials have functional and aesthetic qualities; 	<ul style="list-style-type: none"> ● know that materials have functional and aesthetic qualities; ● that systems have an input, process and output;

	<ul style="list-style-type: none"> • know that systems have an input, process and output; • know how to program a computer to control their products; • know how to make strong, stiff shell structures; • use the correct technical vocabulary. 	<ul style="list-style-type: none"> • how to program a computer to control and monitor their products; • how to reinforce and strengthen a framework; • use the correct technical vocabulary.
<p>Cooking and nutrition Where food comes from</p> <p>Food preparation, cooking and nutrition</p>	<ul style="list-style-type: none"> • know that food is grown, reared and caught in the UK, Europe and the wider world. • know how to prepare a variety of dishes safely and hygienically; • know that a healthy diet is made from a variety and balance of different food and drink; • know that food and drink are needed to provide energy for the body. 	<ul style="list-style-type: none"> • know that food is grown, reared and caught in the UK, Europe and the wider world; • that seasons may affect the food available; • how food is processed into ingredients. • know how to prepare and cook a variety of dishes safely and hygienically using, where appropriate, a heat source; • that different food and drink contain nutrients, water and fibre that are needed for health.

Practical Foods Skills Progression

In Lower Key Stage 2 and Upper Key Stage 2 pupils at Waverley Abbey will be able to:

Skills		Lower Key Stage 2 (Years 3 and 4)	Upper Key Stage 2 (Years 5 and 6)
Food	Press	<ul style="list-style-type: none"> using a garlic press 	
	Peel	<ul style="list-style-type: none"> with a swivel peeler (supervision) 	<ul style="list-style-type: none"> with a swivel peel to create food ribbons to be used in a dish, e.g., courgette/carrot ribbons with supervision
	Spread	<ul style="list-style-type: none"> ingredients evenly over another food 	
	Shape and mould	<ul style="list-style-type: none"> to create visually appealing products e.g., mini cottage loaf or plait, wrap 	
	Mix/stir	<ul style="list-style-type: none"> any ingredients thoroughly whisk foods using a hand-whisk 	<ul style="list-style-type: none"> fold ingredients together carefully
	Spoon	<ul style="list-style-type: none"> be able to use two spoons to transfer ingredients into different size/shape containers with minimal spillage e.g., liquid foods into baking cases (muffin mixture) 	<ul style="list-style-type: none"> be able to gauge the quantities spooned to ensure an equal amount of ingredients in each container
	Measure	<ul style="list-style-type: none"> using a measuring jug with support to obtain accuracy and using digital scales with support to obtain accuracy 	<ul style="list-style-type: none"> using a measuring jug independently and accurately using digital and analogue scales accurately and independently
	Cut out	<ul style="list-style-type: none"> place the cutter in positions to make good of the material available and avoid waste 	
	Grate	<ul style="list-style-type: none"> firmer foods, e.g., carrots, apples 	<ul style="list-style-type: none"> using the zesting part of a grater, e.g., lemon, orange using a nutmeg grater
	Snip	<ul style="list-style-type: none"> with greater dexterity and control e.g., to shred lettuce or cabbage leaves for salad 	
	Thread	<ul style="list-style-type: none"> medium resistance foods with a vegetable know, e.g., cucumber 	<ul style="list-style-type: none"> higher resistance foods onto kebab sticks, e.g., peppers onions
	Cut	<ul style="list-style-type: none"> medium resistance foods with a vegetable knife, e.g. cucumber use a fork or the claw grip to secure foods 	<ul style="list-style-type: none"> higher resistance food with a vegetable knife, using the claw grip, e.g., celery, carrots. higher resistant foods from using the bridge hold, e.g., halve an apple, raw potato

		<ul style="list-style-type: none"> • medium resistant or partly prepared foods using a bridge hold e.g., cut half a tomato into a quarter, halve canned potatoes, halve large grapes 	
Recipe instructions	Follow	<ul style="list-style-type: none"> • a simple recipe with guidance from an adult 	<ul style="list-style-type: none"> • a simple recipe independently
	Carryout	<ul style="list-style-type: none"> • instructions independently 	<ul style="list-style-type: none"> • modifications to recipes
Equipment	Crushing/squeezing	<ul style="list-style-type: none"> • garlic press 	
	Peeling	<ul style="list-style-type: none"> • swivel peeler (adult supervision) 	
	Mixing	<ul style="list-style-type: none"> • blender (adult supervision) 	
	Measuring	<ul style="list-style-type: none"> • measuring jug • digital scales 	<ul style="list-style-type: none"> • Analogue scales
		<ul style="list-style-type: none"> • Vegetable knife (adult supervision) 	
	Grating	<ul style="list-style-type: none"> • grater (adult support) 	<ul style="list-style-type: none"> • Grater (light adult supervision)
	Heating	<ul style="list-style-type: none"> • toaster (adult support and under adult supervision) • hob (adult support and under adult supervision) 	<ul style="list-style-type: none"> • kettle (under adult supervision) • grill (under adult supervision) • oven (under adult supervision)

Vocabulary Progression

In Lower Key Stage 2 and Upper Key Stage 2 pupils at Waverley Abbey will be able to demonstrate knowledge and use of the following vocabulary:

Skill	Lower Key Stage 2 (Years 3 and 4)	Upper Key Stage 2 (Years 5 and 6)
<p>Design Understanding contexts, users and purposes</p> <p>Generating, developing, modelling and communicating ideas</p> <p>Planning</p>	<ul style="list-style-type: none"> • User • Design criteria • Purpose • Design features • Prototypes 	<ul style="list-style-type: none"> • User • Design criteria • Purpose • Design specification • Prototypes
<p>Make Planning</p> <p>Practical skills and techniques</p>	<ul style="list-style-type: none"> • Tools • Equipment • Materials • Components • Measure • Mark out • Cut • Shape • Assemble • Join • Combine • Finish 	<ul style="list-style-type: none"> • Tools • Equipment • Materials • Components • Measure • Mark out • Cut • Shape • Assemble • Join • Combine • Finish
<p>Evaluate Own ideas and products</p> <p>Existing products</p>	<ul style="list-style-type: none"> • Evaluate • Construction • Functional qualities • Aesthetic qualities 	<ul style="list-style-type: none"> • Evaluate • Construction • Functional qualities • Aesthetic qualities

Technical Knowledge Making products work	<ul style="list-style-type: none">• Input• Process• Output• Structures	<ul style="list-style-type: none">• Input• Process• Output• Frameworks
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