



Princefield First School

Design Technology



		Early Years	Key Stage 1		Key Stage 2	
		Reception	Year 1	Year 2	Year 3	Year 4
Strand		Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Design purposeful, functional, appealing products for themselves and other users based on design criteria.		Research and design innovative, functional and purposeful products for individuals or groups based on design criteria.	
Designing	Understanding contexts, users and purposes	<p>Talk with children about where they can see models and plans in the environment.</p> <p>Make suggestions and ask questions to extend children's ideas of what is possible, for example, "I wonder what would happen if...".</p> <p>Support children in thinking about what they want to make, the processes that may be involved and the materials and resources they might need, such as a photograph to remind them what the climbing frame is like.</p> <p>Constructs with a purpose in mind, using a variety of resources.</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment state what products they are designing and making say whether their products are for themselves or other users describe what their products are for say how their products will work say how they will make their products suitable for their intended users use simple design criteria to help develop their ideas 		<p>Across lower KS2 pupils should:</p> <ul style="list-style-type: none"> work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment describe the purpose of their products indicate the design features of their products that will appeal to intended users explain how particular parts of their products work gather information about the needs and wants of particular individuals and groups develop their own design criteria and use these to inform their ideas 	
	Generating, developing, modelling and communicating ideas		<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> generate ideas by drawing on their own experiences use knowledge of existing products to help come up with ideas develop and communicate ideas by talking and drawing model ideas by exploring materials, components and construction kits and by making templates and mockups use information and communication technology, where appropriate, to develop and communicate their ideas 		<p>Across lower KS2 pupils should:</p> <ul style="list-style-type: none"> share and clarify ideas through discussion model their ideas using prototypes and pattern pieces use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas use computer-aided design to develop and communicate their ideas generate realistic ideas, focusing on the needs of the user <i>make design decisions that take account of the availability of resources</i> 	

Strand	Reception		Year 1	Year 2	Year 3	Year 4
	Safely use and explore a variety of materials, tools and techniques experimenting with colour, design, texture, form and function.		Select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping, joining and finishing.		Select and use a wide range of tools, equipment, materials and components to perform practical tasks.	
Making	Planning	<p>Demonstrate and teach skills and techniques associated with the things children are doing, for example, show them how to stop the paint from dripping or how to balance bricks so that they will not fall down.</p> <p>Begin to try out a range of tools and techniques safely.</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> • <i>plan by suggesting what to do next</i> • select from a range of tools and equipment, <i>explaining their choices</i> • select from a range of materials and components according to their characteristics 		<p>Across lower KS2 pupils should:</p> <ul style="list-style-type: none"> • select tools and equipment suitable for the task • <i>explain their choice of tools and equipment in relation to the skills and techniques they will be using</i> • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities • <i>order the main stages of making</i> 	
	Practical skills and techniques	<p>Join construction pieces together to build and balance.</p> <p>Realise tools can be used for a purpose.</p> <p>Investigate various construction materials.</p> <p>Construct with a purpose in mind, using a variety of resources.</p> <p>Selects tools and techniques needed to shape, assemble and join materials they are using</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> • follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design 		<p>Across lower KS2 pupils should:</p> <ul style="list-style-type: none"> • follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy 	
Strand	Reception		Year 1	Year 2	Year 3	Year 4
	Explain own knowledge and understanding, and ask appropriate questions of others.		Explore and evaluate a range of existing products		Investigate and analyse a range of existing products and their own products against a design criteria considering how to improve their own and others' work. Understand how key events and individuals in design and technology have helped to shape the world.	
Evaluating	Own ideas and products	<p>Have an area where models and works can be retained for a period of time for children to enjoy, develop, or refer to.</p> <p>Selects appropriate resources and adapts work where necessary.</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> • talk about their design ideas and what they are making • make simple judgements about their products and ideas against design criteria • <i>suggest how their products could be improved</i> 		<p>Across lower KS2 pupils should:</p> <ul style="list-style-type: none"> • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work • refer to their design criteria as they design and make • use their design criteria to evaluate their completed products 	
	Existing products		<p>Across KS1 pupils should explore:</p> <ul style="list-style-type: none"> • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products 		<p>Across lower KS2 pupils should investigate and analyse:</p> <ul style="list-style-type: none"> • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused 	

	Key events and individuals		Not a requirement in KS1		• about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	
Strand	Reception		Year 1	Year 2	Year 3	Year 4
	Safely use and explore a range of construction materials.		Build structures, exploring how they can be made stronger, stiffer and more stable.. Explore mechanisms such as levers, sliders, wheels and axles.		Apply their understanding of how to strengthen, stiffen and reinforce structures and show an understanding of how mechanical and electrical systems work. Develop their computing knowledge to monitor and control their products.	
Technical knowledge	Making products work	Investigate various construction materials and kits. Construct with a purpose in mind, using a variety of resources, including structured kits.	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • about the simple working characteristics of materials and components • about the movement of simple mechanisms such as levers, sliders, wheels and axles • how freestanding structures can be made stronger, stiffer and more stable • <i>that a 3-D textiles product can be assembled from two identical fabric shapes</i> • <i>that food ingredients should be combined according to their sensory characteristics</i> • <i>the correct technical vocabulary for the projects they are undertaking</i> 		<p>Across lower KS2 pupils should know:</p> <ul style="list-style-type: none"> • how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • <i>that materials can be combined and mixed to create more useful characteristics</i> • that mechanical and electrical systems have an input, process and output • <i>the correct technical vocabulary for the projects they are undertaking</i> • how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits and components can be used to create functional products • how to program a computer to control their products • how to make strong, stiff shell structures • <i>that a single fabric shape can be used to make a 3D textiles product</i> • <i>that food ingredients can be fresh, pre-cooked and processed</i> 	
Strand	Reception		Year 1	Year 2	Year 3	Year 4
	Explore and use a range of ingredients and simple tools and techniques		Use the basic principles of a healthy and varied diet to prepare dishes, considering where foods, in the recipes, come from.		Understand and apply the principles of a healthy and varied diet and use this knowledge to prepare and cook a variety of , predominately savoury dishes, using a range of cooking techniques. Develop an understanding of seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	
Cooking and Nutrition	Where food comes from	Manipulate food materials to achieve a planned effect	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught 		<p>Across lower KS2 pupils should know:</p> <ul style="list-style-type: none"> • 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 	
	Food preparation, cooking and nutrition	Use simple tools and techniques, when handling food products, competently and appropriately.	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating 		<p>Across lower KS2 pupils should know:</p> <ul style="list-style-type: none"> • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body 	

