

Whole School DT Overview

Intent:

The design and technology curriculum will enable pupils to use their creativity and imagination to design and make products that solve real and relevant problems. The scheme of work is designed to develop skills and to draw on disciplines such as mathematics, science, engineering, computing and art. Through the evaluation of past and present design and technology, they will develop a critical understanding of how aspects of DT have an impact on daily life. The scheme is aimed to make a connection between products, their marketing and their use. The scheme builds on the National Curriculum. Pupils build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users. They critique, evaluate and test their ideas and products and the work of others and understand and apply the principles of nutrition and learn how to cook.

CONTENT

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Clothes and textiles – how they feel, how they are used for different clothes ie to keep feet dry, to keep dry from the rain	Market research. Shaping materials to make Christmas cards, baubles, table decorations.	Market research. Mixing materials to make ice lollies, drinks and sledges.	Transporting an egg safely. Creating an Easter egg box. Decorating an egg. Learn about Faberge eggs.	Making wooden frames. Creating a wooden bird house. Learn fixing techniques.	Ingredients for ice cream. Making their own design of ice cream. Transporting sand. Design a way to hold and transport sand.
Year 2	1960s and 70s fashion and design. Create a vintage T shirt. Learn to sew. Make a tie dyed garment e.g. T-shirt	Using different materials and tools to make a Hallowe'en spider, skeleton and an advent calendar.	Designing and making a moving vehicle. Understanding the idea of axles.	Using clay to design and make an egg cup. Problem solving, how to keep an egg warm and an egg cup resilient to heat.	Food technology. Ingredients and recipes to make French, Italian, Spanish, German and Irish salads.	Build a bird box exploring how they can make it stronger, stiffer and more stable
Year 3	Construction equipment. Levers and mechanisms. Problem solving, how to move soil from one place to another. Use levers to lift and deposit soil. Solve a problem to sieve different materials. Create sieve to sieve different sized rocks.	Problem solving: how to build a pyramid. How to build a bridge that will support enough weight for a toy vehicle to cross.	3D nets. Using mirrors to make a kaleidoscope. Recycling materials to create a new mirror.	Textiles: create a toga for a peg doll/figure. Food: create a Greek salad, hummus and a Simnel cake.	Using magnets to make a toy that moves; to make a fridge magnet. Look at how magnets are used around the world.	Aerodynamics. How rockets work. Create a rocket and some model planets. Computer-aided design.
Year 4	Solve problems using pulleys. Learn about gears and use them to create a fairground ride.	Use levers in a greetings card. Use measuring skills and decorating skills to make a Christmas cake and mince pies.	Design and make a weather vane. Use cogs to make a windmill.	Knitting, sewing, weaving.	Using electrical circuits to make products.	Pneumatics. Moving substances through air. Create a volcano model.
Year 5	Chassis, using motors to power a vehicle. Creating a vehicle that moves with	Making puppets and moving parts in a model of the globe theatre.	Food technology: researching and making Mexican recipes for a Mexico day. Making a	Textiles: making a woollen Peruvian product. Problem solving with pulleys	Technological wonders of the USA e.g. Hoover Dam, Golden Gate bridge; Empire	Dwellings for indigenous Indians in the USA. Using hinges for openings.

	battery power Space rockets Lunar vehicles		headdress for Mexico day.	and levers.	state building	
Year 6	Cookery: Create and then make a vegetarian meal. Know how temperature kills unhelpful microbes. Problem solving: identify skills and equipment to make an outdoor shelter for a plant throughout winter.	Textiles. Combining textile skills to create a Victorian Sampler and a soft toy.	Plastics. Making a plastic badge to accompany a marketing campaign. Making other products to accompany the campaign.	Computer-led technology: making traffic lights on a model.	Problem solving activities	Marketing, advertising. Creating a product from which to make money. The idea of profit and loss.

Whole School D & T Overview

Links to Curriculum

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make prototypes and products for different users	2a Make a prototypes cold drink and test out around the school and gather views and opinions.			2a Make a prototype vane	2a make a small prototype of a headdress before making the final version	
Critique, evaluate ideas and products	2a Critique sledges and what moves/slides in the snow.	2a evaluate how toy transport moves and works. Collect ideas about how to make a similar mode of transport.		2a Evaluate how weather vanes work, their designs. Look at how different shapes catch the wind.	2a Evaluate different headgear e.g. fascinators, different headdresses, their role in society	2a evaluate how dinosaurs and soft animals are made and constructed and identify ways of replicating it.
Nutrition and cookery	2a design and make a new flavoured healthy cold drink				2a Make guacamole Make a vegetable chilli	
Design functional products for themselves and others	2a design a sledge	2a design a toy car/ vehicle	2a design and make a kaleidoscope	2a Design a functional weather vane that catches the wind and points in a direction	2a design and make an Aztec headdress	
Generate, model, communicate ideas through templates, mock-ups	2a communicate their ideas about a new cold drink					2a make a template patterns for a fabric animal or dinosaur.
Range of tools	2a use a range of		2a	2a		

	knives, peelers, corers, kitchen equipment, blenders.					
Range of materials		2a use a range of materials to make a vehicle that moves	2a use cardboard to create a net for a prism		2a investigate how feathers can be stabilised and fixed so that they don't fall out	2a use a range of fabrics, cottons etc to construct a fabric animal
Build structures and make them stronger, stiffer and more stable			2a design nets for 3D shapes	2a unvestigate how to make a vane stronger in the wind and how to make it weather proof		2a investigate how to make the fabric anima stiffer and stronger. Identify some tricks used by professionals.
Explore and use mechanisms		2a explore axles, wheels,		2a explore mechanism of how things spin		

Whole School D & T Overview

SKILLS

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	<p>Explore the sensory qualities of materials</p> <p>Identify a target group for what they intend to design and make</p> <p>Take account of simple properties of materials when deciding how to cut, shape, combine and join them</p>	<p>Explore ways to construct models</p> <p>Recognise how structures can be made stronger, stiffer and more stable</p> <p>Use tools and materials with help</p>	<p>Use tools and materials with help</p> <p>Generate and talk about their own ideas</p>	<p>Recognise how structures can be made stronger, stiffer and more stable</p> <p>Generate and talk about their own ideas</p> <p>Take account of simple properties of materials when deciding how to cut, shape, combine and join them</p>	<p>Explore ways to construct models</p> <p>Recognise how structures can be made stronger, stiffer and more stable</p> <p>Use tools and materials with help</p>	<p>Explore the sensory qualities of materials</p> <p>Use tools and materials with help</p> <p>Take account of simple properties of materials when deciding how to cut, shape, combine and join them</p>
Year 2	<p>Explore a range of existing products</p> <p>Identify a purpose for what they intend to design and make</p> <p>Observe and take account of properties of materials when deciding how to cut, shape, combine and join them</p> <p>Measure, mark, cut out and shape a range of</p>	<p>Explore a range of existing products</p> <p>Identify simple design criteria then plan what to do next, using a variety of methods</p> <p>Use simple finishing techniques</p>	<p>Explore a range of existing products</p> <p>Identify a purpose for what they intend to design and make</p> <p>Use mechanisms in their products e.g. wheels, sliders</p>	<p>Discover where foods come from in choosing, preparing and tasting different dishes</p> <p>Identify what they could have done differently or how they could improve their work in the future</p> <p>Use simple finishing techniques</p>	<p>Identify a purpose for what they intend to design and make</p> <p>Observe and take account of properties of materials when deciding how to cut, shape, combine and join them</p> <p>Measure, mark, cut out and shape a range of materials</p> <p>Talk about their</p>	<p>Discover where foods come from in choosing, preparing and tasting different dishes</p> <p>Identify what they could have done differently or how they could improve their work in the future</p> <p>Use simple finishing techniques</p>

	materials				ideas, saying what they like and dislike, and evaluate against their design criteria	
Year 3	<p>Generate, develop and explain ideas for products to meet a range of needs</p> <p>Identify a purpose and establish criteria for a successful product</p> <p>Communicate design ideas in different ways e.g.discussion, annotated sketches, cross-sectional diagrams and prototypes</p>	<p>Generate, develop and explain ideas for products to meet a range of needs</p> <p>Evaluate work, adapting and improving where appropriate</p> <p>Selecting appropriate tools and techniques, name and describe them</p>	<p>Generate, develop and explain ideas for products to meet a range of needs</p> <p>Evaluate work, adapting and improving where appropriate</p> <p>Measure, mark, cut out and shape a range of materials and assemble, join and combine components and materials with some accuracy</p>	<p>Explore ways of meeting design challenges with a food focus using a range of cooking techniques</p> <p>Identify a purpose and establish criteria for a successful product</p> <p>Selecting appropriate tools and techniques, name and describe them</p>	<p>Generate, develop and explain ideas for products to meet a range of needs</p> <p>Evaluate work, adapting and improving where appropriate</p> <p>Selecting appropriate tools and techniques, name and describe them</p>	<p>Generate, develop and explain ideas for products to meet a range of needs</p> <p>Identify a purpose and establish criteria for a successful product</p> <p>Measure, mark, cut out and shape a range of materials and assemble, join and combine components and materials with some accuracy</p>
Year 4	<p>Use research to inform their design</p> <p>Evaluate work, adapting and improving through the views of others to improve their work</p> <p>Select from and use a range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p>	<p>Use research to inform their design</p> <p>Evaluate work, adapting and improving through the views of others to improve their work</p> <p>Select from and use a range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p>	<p>Use research to inform their design</p> <p>Evaluate work, adapting and improving through the views of others to improve their work</p> <p>Measure, mark, cut out and shape a range of materials and assemble, join and combine components and materials with increasing accuracy</p>	<p>Use research to inform their design</p> <p>Evaluate work, adapting and improving through the views of others to improve their work</p> <p>Select from and use a range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p>	<p>Use research to inform their design</p> <p>Evaluate work, adapting and improving through the views of others to improve their work</p> <p>Communicate design ideas in different ways e.g.discussion, annotated sketches, cross-sectional diagrams and prototypes</p>	<p>Use research to inform their design</p> <p>Evaluate work, adapting and improving through the views of others to improve their work</p> <p>Select from and use a range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p>
Year 5	<p>Investigate ways of meeting design challenges with a construction focus</p> <p>Analyse a range of existing products</p> <p>Communicate design ideas in different ways e.g.discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>Investigate how the work of individuals in design and technology has helped to shape the world</p> <p>Analyse a range of existing products</p> <p>Plan what they have to do, including how to use materials, equipment and processes</p>	<p>Investigate how the work of individuals in design and technology has helped to shape the world</p> <p>Identify users' views and take these into account</p> <p>Plan what they have to do, including how to use materials, equipment and processes</p>	<p>Investigate ways of meeting design challenges with a construction focus</p> <p>Analyse a range of existing products</p> <p>Plan what they have to do, including how to use materials, equipment and processes</p>	<p>Investigate ways of meeting design challenges with a construction focus</p> <p>Estimate and measure using appropriate instruments and units</p> <p>Communicate design ideas in different ways e.g.discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>Investigate how the work of individuals in design and technology has helped to shape the world</p> <p>Estimate and measure using appropriate instruments and units</p> <p>Plan what they have to do, including how to use materials, equipment and processes</p>
Year 6	Explore alternative ways	Explore alternative ways	Explore alternative ways			

	<p>of making their product, if first attempts fail</p> <p>Check work as it develops and modify as necessary Draw on and use various sources of information, including ICT sources</p> <p>Generate and clarify ideas for products, considering intended purpose</p>	<p>of making their product, if first attempts fail</p> <p>Check work as it develops and modify as necessary Choose how to communicate design ideas as they develop, considering use and purpose</p> <p>Select from a wide range of tools and equipment to perform practical tasks accurately</p>	<p>of making their product, if first attempts fail</p> <p>Evaluate their products, identifying strengths and areas for development, and make appropriate changes</p> <p>Generate and clarify ideas for products, considering intended purpose</p> <p>Select from a wide range of tools and equipment to perform practical tasks accurately</p>			
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