Hadley Wood Primary School

Design & Technology Curriculum Overview

Our Vision

...that every child will leave our school confident in their own abilities and excited about the future, with the strategies and skills to tackle tasks and situations in a capable manner and caring about their planet and their fellow humans.

Curriculum Intent:

At Hadley Wood we encourage children to develop as designers by ensuring they have the opportunity to broaden both their technical skills and their knowledge.

The teaching of design and technology in school is based on the skills and knowledge outlined in the progression of skills table below. These were devised by the Design and Technology Subject Lead – in collaboration with the teaching team – and are based on the revised National Curriculum objectives and also using the Chris Quigley objectives.

Teachers plan a sequence of lessons inspired by exciting and engaging topics to ensure they have progressively covered the knowledge, understanding and skills required in the National Curriculum. Children engage in a broad range of practical experiences to create innovative designs which solve relevant problems and improve children's ability to control materials, tools and techniques. Teachers implement the iterative design process by encouraging children to design based on prior knowledge, research, design criteria and real problems. Children with evaluate existing products and take risks when making new products, acquiring new skills and selecting from a wide range of materials and components. As part of the process children will be given time to evaluate and improve their products, using a design criteria to guide this reflection. Children will understand how key events and individuals in design and technology have helped to shape the world.

Design and Technology Curriculum Overview: EYFS – Year 6

Design & Technology	
Year 1 and beyond	**Early Years**
Toys: Using catalogues, create collage of toys Design own toy Using a range of material, create own toy	Variety of small world equipment Range of construction used to create their own toys, LEGO, junk modelling, wooden blocks, large blocks – outside area, etc. Programmable toys – Beebots – give instructions
Cooking: To learn about food hygiene and how to keep safe in the kitchen Follow a basic recipe Understand where food comes from Design a dish using Jamaican sourced ingredients	Fruit kebabs – make and consume, include the importance of washing hands and good hygiene Pancakes Chocolate crispy cakes at Easter – discuss melting Relevant stories, e.g. Handa's Surprise, The little Red Hen – make bread, etc. Make play dough
Houses: Test a range of materials for their suitability Design purposeful and functional products Select from and use a range of tools and equipment Evaluate ideas against design criteria	Making houses using junk modelling Bridges – tested with toy goats linked to The Three Billy Goats Gruff Dolls House – furniture and figures Create house/den etc. using a range of materials, e.g. Poddely, large cardboard boxes, tents, material, etc.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Year 1			Toys . Use catalogues to create a collage of popular toys . Use a range of materials to create a new toy	Jamaican Cooking . Learn about food hygiene and keeping safe in the kitchen . Follow a basic recipe understanding where the food comes from . Create a recipe using Jamaican sourced ingredients	Houses . Test a range of materials for their suitability to design functional products . Select from and use a range of tools and equipment . Evaluate ideas against design criteria	
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Year 2		Pirates . Apply knowledge from science topic to design and create a floating pirate ship . Test ideas and evaluate		Superheroes . Design purposeful, functional and appealing capes from themselves and others		

		final products to decide how we could improve		. Communicate ideas through talking, drawing, templates, mock-ups and ICT		
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Year 3	Volcanoes . Use research and design criteria to inform functional Volcano design . Children will evaluate their models and suggest ways it could be improved during a science lesson				Kites . Use a design criteria to create a purposeful, functional and appealing kite . Children will have the opportunity to test their kites by flying them on Dunstable Downs	Cooking . Discuss the functional properties of a range of ingredients . Children will become familiar with food groups in order to understand the purpose of a notional diet and select ingredients to produce a balanced savoury dish
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Year 4	Electricity . Use research to inform the design of an innovative, functional and appealing buzzer game . Children will understand and use electrical systems in their products . Evaluate ideas and products against design criteria and consider the views of others			Ancient Rome . Develop a design criteria to inform the design of an appealing mosaic that is fit for purpose . Communicate ideas through discussion, diagrams, prototypes and ICT . Investigate and analyse a range of existing products		The Amazon . Experiment with a range of materials to test and decide the best materials to build structures that would survive an earthquake . Select from and use a wide range of materials according to their functional properties
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Year 5			Rockets . Children will learn about the basic properties of rockets in order to design their own which can protect an egg . Rockets will be tested by being launched from a height . Evaluate product based on its speed and impact reducing features	Hydraulic Crane . Children will be briefed on a problem faced in certain climate zones around the world – the threat of earthquakes and landslides . Work as engineers to design and build a crane that can lift debris to a certain height above the ground	Anglo Saxons . Analyse relics of Anglo-Saxon logos in order to design a 'family flag', including symbolic features which hold meaning to themselves . Children will consider colour, line, shape and space before developing their sewing skills to create a flag	

				. Test and evaluate products		
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Year 6		WW2 . Design an Anderson shelter to withstand pressure and force . Learn how to cut wood and justify their decisions about materials and methods of construction . Reflect on their work using design criteria, stating how well the design fits the needs of the user and making suggestions on how to improve				Biscuits . Design biscuits and packaging with the user in mind . Create and refine recipes, including ingredients, methods, cooking and times . Demonstrate a range of baking and cooking techniques . Make products through stage of prototypes, making continual refinements

Design and Technology Progression of Skills: EYFS – Year 6

	EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**

Design (developing, planning and communicating ideas)	EAD – Being Imaginative - Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. - They represent their own ideas, thoughts and feelings through design and technology.	- Use catalogues to create a collage of toys in order to suggest ideas for a new toy design - Design purposeful and functional houses	- Use knowledge of floating and sinking to design purposeful, functional and appealing pirate ships - Design superhero capes for ourselves and others based on design criteria - Communicate cape designs through talking, drawing, templates, mock-ups and ICT	- Use research and design criteria to inform the design of a working volcano - Develop and communicate volcano designs through annotated sketches - Develop design criteria to inform the design of a functional kite which is fit for purpose	- Use research and develop design criteria to inform the design of an innovative, functional and appealing buzzer game which is fit for purpose and aimed at a particular audience - Communicate game ideas by generating prototypes - Use research and develop design criteria to design appealing mosaics that are fit for purpose	- Children will apply research to begin designing rockets by learning about their basic properties - In groups children will be briefed on a problem faced in certain climate zones around the world, they will develop their ideas through discussion and prototype cranes - Children will analyse relics of Anglo-Saxon logos to inform their design of a 'family flag' containing symbolic features which hold meaning to them	- To design an Anderson shelter to withstand pressure and force - Pupils will generate, develop, model and communicate their ideas through discussion, annotated sketches, diagrams and prototypes
Make (working with tools, equipment, materials and components)	EAD – Exploring and Using Media and Materials - Children safely explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	- Make a toy using appropriate techniques by selecting from a range of textiles and stitches	- Use a range of tools and equipment to build a ship, such as cutting, shaping, joining and finishing	- Select from a wide range of materials and textiles according to their functional properties and aesthetic qualities to make a kite	- Understand and use electrical systems in products, selecting from a range of materials and components such as switches, bulbs, buzzers and motors - Use a wider range of tools and equipment to make mosaics, such as cutting, shaping, joining and finishing accurately	- Pupils will select from a wider range of materials and components, including construction materials and textiles to make a rocket and hydraulically powered crane according to their functional properties and aesthetic qualities - Children will consider colour, line, shape and space before developing sewing skills using cloth, needles and thread to create a family flag	- Pupils will be able to select from a wider range of tools and equipment to perform practical tasks, such as cutting strip wood, dowels and square section wood - Children will be encouraged to justify their decisions about materials and methods of construction

Evaluate (processes and products)		- Explore and evaluate materials for their suitability when used to construct a house - Evaluate housing ideas against design criteria	- Pupils will test and evaluate their ships to identify how they can improve them in the future	- Pupils will test and evaluate their volcanos, considering the views of themselves and others to improve their work - Test kites by flying them on Dunstable Downs and evaluate against design criteria	- Pupils will evaluate their electrical circuits against their own design criteria - When exploring electricity children will understand how key events and individuals have helped shape the world - Investigate and analyse a range of existing mosaics	- When exploring earthquakes and landscapes children will understand how key events relate to design and technology - Pupils will evaluate their ideas against their own design criteria and consider the views of others to improve their work	- Pupils will reflect on their own design criteria, stating how well the design fits the needs of the intended audience and making suggestions as to how their design could be improved
Technical Knowledge	PD – Moving and Handling - Children handle equipment and tools effectively.	- When building structures explore how they can be made stronger, stiffer and more stable	- Explore mechanisms when creating ships	- Apply understanding of how to strengthen, stiffen and reinforce more complex structures	- Pupils will understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors	- Pupils will understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages	- Apply understanding of how to strengthen, stiffen and reinforce more complex structures to achieve a quality product
Cooking and Nutrition	PD – Health and Self-Care - Children know about the importance for a healthy diet and manage their own basic hygiene and personal needs successfully.	- Pupils will learn about food hygiene and how to keep safe in the kitchen - Follow a basic recipe to prepare dishes - Understand where food comes from, creating a dish using ingredients from Jamaica	- Through focus weeks children will have the opportunity to use the basic principles of a healthy a varied diet to prepare a range of dishes - During multi-cultural week children will understand where food comes from	- Pupils will be familiar with food groups, understanding the purpose of a nutritional diet - Select ingredients to produce a balanced and healthy savoury dish	- Through focus weeks children will have the opportunity to prepare and cook savoury dishes using a range of cooking techniques - During multi-cultural week children will understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed		- Children will expand their knowledge of cooking techniques and measure accurately, using ratios to scale up or down - Pupils will create and refine recipes including ingredients, methods, cooking times and temperatures