

DT & Cookery Progression of Skills and Coverage

Key Stage 1 National Curriculum Objectives

When designing and making, pupils should be taught:

Structures – exploring how they can be made stronger and more stable

Mechanisms – levers, sliders, wheels and axles

Textiles – sewing skills

Explore:

- Explore and evaluate a range of existing products (past and present)

Design:

- Design purposeful, functional, appealing products for themselves and other users based on design criteria.
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT.

Make:

- Use a range of tools and equipment to perform practical tasks.
- Use a wide range of materials and components, according to their characteristics.

Evaluate:

- Evaluate their ideas and products against a design criteria.

Cookery – Children should be taught how to cook and apply principles of nutrition and healthy eating.

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

Key Stage 2 National Curriculum Objectives

When designing and making, pupils should be taught to:

Structures – exploring how they can be made stronger, stiffer and more stable using reinforcements

Mechanisms – gears, pulleys, cams, levers and linkages – using electrical systems in their products

Textiles – sewing skills

Computing - apply their understanding of computing to design, program, monitor and control their products

Explore:

- Investigate and analyse a range of existing products (past and present) and evaluate whether they are fit for purpose.
- Use research and develop design criteria to inform future designs

Design:

- Design innovative, functional, appealing products that are fit for purpose and aimed at individuals and groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams, prototypes, pattern pieces and **computer-aided design**.

Make:

- Use a range of tools and equipment to perform practical tasks accurately.
- Use a wide range of materials and components, according to their characteristics (functional properties and aesthetic qualities)

Evaluate:

- Evaluate their ideas and products against a 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.

Cookery – Children should be taught how to cook and apply principles of nutrition and healthy eating.

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominately savoury dishes using a range of cooking techniques
- Understand seasonality, and know where a variety of ingredients are grown, reared, caught and processed.

Technical Knowledge	Sequence	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Structures	Explore	<p><u>LAND AHOY (SUMMER 2)</u></p> <p><u>LIGHTHOUSES</u></p> <p><u>Lighthouse history</u></p> <ul style="list-style-type: none"> - Why lighthouses were invented - Henry Winstanley - Explore a range of different lighthouse structures. 	<p><u>FANTASTIC MR FOX (SUMMER 1)</u></p> <p><u>CHICKEN COOPS</u></p> <p><u>Waterproof materials</u></p> <ul style="list-style-type: none"> - Exploring different fabrics and their properties (relate to real life – tents/jackets/umbrella/bike shed) - Chicken coops – what features do they need? - Link to science – materials that are fit for purpose. 		<p><u>SUPER STRUCTURES (SUMMER 1)</u></p> <p><u>BRIDGES</u></p> <p><u>Types of Bridge</u></p> <p>Research different types of bridge</p> <p><u>History of bridges</u></p> <p>Isambard Brunel</p> <p>Emily Roebling</p> <p><u>Enrichment:</u></p> <p><u>London</u></p>		<p><u>TOIL AND TROUBLE (AUTUMN 2)</u></p> <p><u>TUDOR BUILDINGS</u></p> <p><u>Historical Architecture</u></p> <p>Investigate the design features of an existing product in the context of the culture or society in which it was built or made</p>
	Design	<p>To draw a simple picture of an intended design with basic labelling</p>	<p>- To draw a sketch of their product</p> <p>- To consider different materials that could be used to make the coop fit for purpose (cardboard, plastic, paper, foil, cling film, fabric)</p>		<p>To generate a prototype bridge, showing awareness of how to strengthen, stiffen and reinforce</p>		<p>-Use CAD programs to design and explain their ideas and intentions.</p> <p>-Build a prototype to check measurements</p>
	Make	<p>- To build a simple lighthouse structure that stands up independently</p> <p>- Use a range of different joining</p>	<p>- To build a freestanding structure.</p> <p>- To use a range of materials and joining techniques to ensure</p>		<p>-To build a bridge using a glue gun with close supervision.</p> <p>-Follow health and safety advice.</p>		<p>-Build a framework using a range of materials, measuring and marking to the nearest millimetre.</p>

		techniques (taping, stapling or gluing)	their structure is waterproof. -Do an experiment to test (either leave outside or use a watering can)		- To measure and mark to the nearest centimetre.		-To cut safely and accurately to a marked line. -To use a range of joining techniques to strengthen.
	Evaluate	Talk about their own work and others' work, identifying strengths and weaknesses	To evaluate how effective their product was (was it waterproof?) What they could do next time to improve it?		Describe how a product could be made better, stronger or more sustainable.		Evaluate products against the design criteria.
Mechanisms	Explore	<p><u>EXCELLENT ENGINES (SPRING 2)</u></p> <p><u>CARS</u></p> <p><u>The invention of the wheel and the evolution of cars</u> Describing other's work and saying what they liked and dislike about it.</p> <p><u>Enrichment: Ricardos?</u></p>	<p><u>HOW TO TRAIN YOUR DRAGON (SPRING 2)</u></p> <p><u>SLIDING MECHANISMS</u></p> <p><u>Sliders and levers</u> Describe similarities and differences between products (a range of sliding books/birthday cards)</p> <p>- Explore different mechanisms</p>	<p><u>FOSSIL HUNTERS (AUTUMN 1)</u></p> <p><u>POP UP BOOKS</u></p> <p><u>Box folds/v folds/flaps</u> - Investigate a range of books with moving parts and say whether they do what they are supposed to do. - Explore different mechanisms</p>	<p><u>HUGO CABRET (SUMMER 2)</u></p> <p><u>CAM TOYS</u></p> <p><u>CAM mechanisms</u> - Comparing toys from the past to toys in the present day - Explain how existing products work and are fit for purpose - To explore a range of cams and their effect of movement.</p> <p><u>Enrichment: Toy Resource box?</u></p>	<p><u>RISE OF THE ROBOTS (SUMMER 2)</u></p> <p><u>ROBOTS</u></p> <p><u>Robotics</u> Explore prominent figures in robotics - George Devol – invented the Unimate – the first robot used in a line of production - Investigate robots that have been create to serve a purpose. - Create a timeline to sequence the</p>	<p><u>BATTLE OF BRITAIN (SPRING 1)</u></p> <p><u>ELECTRICAL GAMES</u></p> <p><u>(Links with Science)</u> - Explain the form and function of existing products - Explore similar games - Science links</p>

						development of robot designs over time	
	Design	Draw simple pictures with basic labelling.	Create a picture with labels that is based on a design criteria	Use labelled diagrams and models (prototypes) to design product that meets design criteria	Use information (Explore stage) to inform design in words and labelled pictures, keeping in mind purpose and intended effect.	Use various sources of information to create labelled sketches, cross sectional diagrams and models that fit a purpose - Using CAD to design	Develop detailed criteria for designs for products aimed at a particular audience.
	Make	<ul style="list-style-type: none"> - Fold, tear, cut and roll paper and card. - Cut accurately and safely with scissors. - Attach features to a vehicle, joining appropriately 	<ul style="list-style-type: none"> - Create simple sliders and hinges using card and split-pins. - Use glue and tape appropriately to accurately join. - Choose appropriate materials to use to fit purpose - Cut, measure, form and shape materials 	<ul style="list-style-type: none"> Create simple pop-ups using card. - Use glue, tape and split pins appropriately to accurately join, ensuring effectiveness of mechanism. 	<ul style="list-style-type: none"> - Choose from a range of materials showing an understanding of their characteristics - Cut internal shapes - Use CAMS and levers in their products effectively 	<ul style="list-style-type: none"> - Select and combine parts and materials with precision - Monitor and control more than one output in response to changes 	<ul style="list-style-type: none"> Design products incorporating the most appropriate electrical systems - Demonstrate how their product takes into account the safety of the user
	Evaluate	<ul style="list-style-type: none"> - Explain how they might fix a product (if their car is unsuccessful!) - Simply explain how they could improve their product. 	Explain how finished products meet their design criteria.	Suggest improvements to products made and describe how they might be achieved.	Identify what has worked well and what could be improved, evidencing and explaining thoughts.	Evaluate product against detailed design specification and detail any adaptations that took place as they	demonstrate modifications made to a product as a result of ongoing evaluation. Describe whether the end product is fit for purpose.

						developed product.	
Textiles	Explore			<u>FLOWER POWER (SUMMER 1)</u> <u>TOTE BAGS</u> <u>Types of Stitch</u> - Explore and practice running stitch		<u>MAGICAL MUGGLES (AUTUMN 2)</u> <u>HOUSE BANNERS</u> <u>Set Designers</u> - Research the work done by other textile artists and say what they like about a piece, identifying the techniques and materials used and the aesthetic value.	
	Design			Make a realistic plan, identifying process, equipment and materials needed. - Create a simple pattern for a design		To communicate design ideas using sketching and CAD, including details on process and materials needed.	
	Make			- Join fabrics using a running stitch		- Create a 3D product using a range of materials	

				- To understand the need for a seam allowance		and sewing techniques - Join fabrics using a range of stitches (running stitch, back stitch, over stitch and blanket stitch)	
	Evaluate			- Suggest improvements to products made and describe how to implement them.		Evaluate products against the design criteria. Demonstrate modifications made to a product as a result of ongoing evaluation.	
Cookery	Explore	<u>THROUGH THE DEEP, DARK WOOD (AUTUMN 2)</u> <u>FRUIT CRUMBLE</u> - Identify the source of common foods - Identify the main food groups	<u>AWESOME AFRICA (AUTUMN 1)</u> <u>JOLLOF RICE</u> - Explain where the food they eat comes from (animals/plants/countries) - Recognise the need for a variety of foods in our diet	<u>TOMB RAIDERS (SUMMER 2)</u> <u>BREAD</u> - Identify how food is made to look appealing - Described what a balanced diet is <i><u>Enrichment:</u></i> <i><u>Myton Cooking</u></i>	<u>GROOVY GREEKS (AUTUMN 2)</u> <u>FETA AND SPINACH PARCELS</u> - Identify which foods come from the UK, or other countries in the world - Explain why we should make healthy food choices	<u>MAYANS (SUMMER 1)</u> <u>SEASONAL RECIPES</u> - Explain what time of the year certain foods are in season <i><u>Enrichment:</u></i> <i><u>Cadbury World</u></i>	<u>BATTLE OF BRITAIN (SPRING 1)</u> <u>RATIONING MEALS</u> - Explain how ingredients were grown, reared, caught and processed during World War Two - To understand how certain ingredients could be substituted for others
	Design	To choose from a variety of fruits to combine flavours	- To choose from a variety of vegetables to combine flavours	- To choose a suitable shape,	- Choose a recipe based on the amount of	- To select seasonable fruit	- Plan how they could make a healthy and affordable meal

				pattern and topping	different ingredients, to suit personal preference.		
	Make	<ul style="list-style-type: none"> - To use the bridge knife technique to safely cut fruit - To observe how ingredients change when combined 	<ul style="list-style-type: none"> - To use the claw knife technique to chop hard foods - To observe changes during the cooking process - To select appropriate equipment for cooking 	<ul style="list-style-type: none"> - To measure ingredients accurately - To knead and shape bread to form a dough - To observe changes during the proofing process 	<ul style="list-style-type: none"> - To handle, roll and cut pastry - To fry ingredients safely - To shape and press the parcels to form a seal 	<ul style="list-style-type: none"> - To chop consistently sized pieces of food using a knife - To cook in an oven according to the recipe 	<ul style="list-style-type: none"> - To weigh, measure and combine ingredients according to a recipe
	Evaluate	Talk about their own work and others' work, identifying strengths and weaknesses	Explain what they could do better in the future	Suggest improvements to products made and describe how to implement them.	Identify what has worked well and what could be improved, evidencing and explaining thoughts.	Evaluate products against the design criteria, analysing and evidencing.	Demonstrate modifications made to a recipe as a result of ongoing evaluation.