

DT progression of skills

	EYFS	Year 1 and 2	Year 3 and 4	Year 5 and 6
Cooking and nutrition	<p>ELG Creating with materials</p> <ul style="list-style-type: none"> To safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. To share their creations, explaining the process they have used. To make use of props and materials when role playing characters in narratives and stories. 	<p>All around us (Spr 2 A)</p> <p><u>Eat more fruit and vegetables</u></p> <p>Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.</p> <ul style="list-style-type: none"> To name a variety of fruit and vegetables. To know that some fruit and vegetables need to be washed, cut, cored, peeled or grated before they can be eaten. To use a range of utensils to prepare some fruit and vegetables. To understand basic food hygiene. 	<p>From field to fork (Aut 2 A)</p> <p><u>Seasonal foods</u></p> <p>Understand and apply the basic principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <ul style="list-style-type: none"> To know what the term seasonal food means and that different parts of the world have different seasonal foods. To discuss the benefits and problems of seasonal foods being available in shops all year round. To practise cooking skills including slicing, dicing, beating, whisking, folding, sieving, rolling and grating. 	<p>Going green (Sum 1 A)</p> <p><u>Burgers</u></p> <p>Understand and apply the basic principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <ul style="list-style-type: none"> To know that most foods we buy have nutrition labels to make us help informed choices about what we eat. To know that calories come from fats, proteins and carbohydrates. To evaluate how healthy foods are based on their nutrition label. To offer suggestions for alternatives for bread. To explore different ways of making and seasoning burgers (patties, buns and sauces). To design a burger menu to incorporate different patties, sides and sauces. To follow a recipe to make a burger patty and bun. To make and evaluate a burger following a recipe and design.
	<p>ELG Fine motor</p> <ul style="list-style-type: none"> To use a range of small tools, including scissors, paintbrushes and cutlery. 	<p>Back to school (Spr 2 B)</p> <p><u>Perfect pizzas</u></p> <p>Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.</p> <ul style="list-style-type: none"> To use the model of a balanced plate to learn about healthy eating. To understand why each of the food groups is important for a balanced diet. To explore and evaluate different types of bread for a pizza base. To identify and sort toppings based on different criteria. 	<ul style="list-style-type: none"> To know some of the nutrients we get from fruit, vegetables, meat, fish and dairy products and know some vegetarian options that provide the same nutrients as meat. To follow recipes to make a range of food products (fairy cakes, season fruit tarts, stuffed peppers and meatballs). To design a healthy menu using seasonal food. 	

		<ul style="list-style-type: none"> To design, make and evaluate a healthy pizza following given criteria. 		
<p style="text-align: center;">Design, make, evaluate</p>		<p>The design, making and evaluation processes are embedded within all of the DT units taught.</p> <p>Design</p> <ul style="list-style-type: none"> 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, where appropriate, information and communication technology <p>Make</p> <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria 	<p>The design, making and evaluation processes are embedded within all of the DT units taught.</p> <p>Design</p> <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 <p>Make</p> <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 <p>Evaluate</p> <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 	
		<p style="text-align: center;">Textiles</p>		<p>Inside the castle walls (Sum 2 B) <u>Puppets</u></p> <ul style="list-style-type: none"> To explore a variety of puppets, identifying the features.

- To cut out felt using a simple template.
- To attach felt in different ways.
- To use running stitch and overstitch to join 2 pieces of fabric together.
- To attach a button using sewing.
- To design, make and evaluate a puppet for a particular purpose.

- To explain the difference between the function and the visual appeal of a product.
- To evaluate the function and visual appeal of a variety of Christmas stockings.
- To use pins to temporarily fasten fabric together.
- To use running stitch, back stitch, overstitch and zig zag stitch to join 2 pieces of fabric together.
- To learn how to hide the finishing knot.
- To sew buttons, beads and sequins onto fabric.
- To embroider shapes and patterns.
- To use applique to add decoration.
- To use a template to cut out front and back pattern pieces.
- To design, make and evaluate a Christmas stocking, incorporating decorative techniques.

Kingdom of bronze (Sum 1 B)

Pencil cases

- To explain and evaluate the function and visual appeal of a product.
- To use running stitch, back stitch and whip stitch to join fabric.
- To learn how to create a secure button, popper and toggle fastening.
- To explore and experiment with different ways of adding embellishments to fabric.

- To know that different textiles have different properties and are used for different purposes.
- To identify and use a variety of stitches, including straight stitch, zig zag stitch, whip/blanket stitch, blind stitch, button hole stitch and overlock stitch.
- To sew a hem.
- To sew an applique decoration.
- To use a range of stitches to embroider.
- To use pattern pieces to measure, mark, cut and sew fabric.
- To design a drawstring bag including the necessary pattern pieces.
- To join 2 pieces of fabric using an appropriate stitch.
- To design, make and evaluate a drawstring bag according to design criteria.

			<ul style="list-style-type: none"> • To design, make and evaluate a pencil case using sewn seams and embellishments. 	
Mechanical		<p>Up, up and away (Sum 1 A A)</p> <p><u>Vehicles</u></p> <p>Explore and use mechanisms, e.g. levers, sliders, wheels and axles in their products.</p> <ul style="list-style-type: none"> • To investigate a range of vehicles, identifying their features. • To know what an axle is. • To know what a chassis is. • To explore different ways of using axles, chassis and wheels to create a moving base. • To design, make and evaluate a vehicle with wheels, axles, a chassis and a body. <p>Never eat shredded wheat (Aut 1 B)</p> <p><u>Moving minibeasts</u></p> <p>Explore and use mechanisms, e.g. levers, sliders, wheels and axels in their products.</p> <ul style="list-style-type: none"> • To make a sliding mechanism out of card • To know what a pivot and lever are. • To make a pivot and lever mechanism using card and a split pin. • To make a wheel mechanism using card and a split pin. • To match a mechanism to the type of movement they produce. 	<p>A child of the times (Aut 1B)</p> <p><u>Storybooks</u></p> <p>Understand and use mechanical system in their products, e.g. gears, pulleys, cams, levers and linkages.</p> <ul style="list-style-type: none"> • To explore moving parts in story books, suggesting how they work and what purpose they serve. • To explain what the words linkage, pivot, rotate and lever mean. • To use levers to create moving parts. • To make a pop-out using paper methods. • To create a moving wheel mechanism to create different effects. • To design, make and evaluate a storybook using moving mechanisms. • To add graphic features to the book. 	

		<ul style="list-style-type: none"> • To design a moving minibeast picture to include a variety of moving mechanisms. • To design, make and evaluate a moving minibeast picture for a particular purpose. 		
<p style="text-align: center;">Stable structures</p>		<p>Toy story (Spr 1 A)</p> <p><u>Stable structures</u></p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <ul style="list-style-type: none"> • To know what stable means. • To make changes to the design of a stable structure to make it fit for purpose. • To explore a range of materials and evaluate the usefulness of their properties for a particular project. • To explore how to make stable structures that hold a given object. • To follow a design to make and evaluate a structure against a given set of criteria. 	<p>Under the canopy (Spr 2 A)</p> <p><u>Mini greenhouses</u></p> <p>Apply their understanding of how to strengthen, stiffen and reinforce complex structures.</p> <ul style="list-style-type: none"> • To explain how the shape of a structure affects its stability. • To know that the weight of the structure needs to be evenly spread on the base to make it secure. • To know that the wider a structure's base is, the more stable it will be. • To use 3d nets to explore potential structures for a greenhouse, assessing their stability. • To investigate ways of making a structure more stable (e.g. by inserting doweling or adding triangles at the joins) • To experiment with a range of materials to determine which would be most appropriate in the structure of a mini greenhouse. • To design and make a mini greenhouse using specific design criteria and appropriate tools. • To evaluate the finished mini greenhouse for stability, effectiveness and visual appeal. 	<p>Frozen (Aut 1 A)</p> <p><u>Bird house builders</u></p> <p>Apply their understanding of how to strengthen, stiffen and reinforce complex structures.</p> <ul style="list-style-type: none"> • To identify the materials used to construct a variety of bird house and suggest how they have been put together. • To know what a flat pack diagram is and can use it to identify each part of a structure. • To create a flat pack diagram of a constructed bird house. • To draw an exploded diagram of a bird house. • To identify the tools associated with basic woodworking. • To measure, clamp, saw, sand and join wood. • To use a hand drill to drill a hole in a piece of wood. • To follow safety rules when doing woodworking. • To design a bird house for a particular bird, taking into account the bird's needs. • To select appropriate tools and materials when making and designing a bird house. • To create a sturdy bird house frame using wood. • To evaluate the effectiveness of the bird house.

Pollution solution (Spr 2 B)

Building bridges

Apply their understanding of how to strengthen, stiffen and reinforce complex structures.

- To learn what beams and pillars are and how they are used in bridge construction.
- To predict which beams will be strongest from their cross section.
- To test the strength of different beam shapes using paper and card.
- To explain what a truss is and how trusses make bridges stronger.
- To identify the 3 types of trusses commonly used in bridge design.
- To build a truss bridge, spanning a width of 40cm using paper straws.
- To use a fair test to evaluate the strength of the truss bridge.
- To explain how arches make a bridge stronger.
- To make an arch frame.
- To explain how suspension bridges use tension forces to work.
- To design, make and evaluate a prototype suspension bridge using a scale 1:100 according to specific design criteria.

Children of the revolution (Aut 1 B)

Chinese inventions

- To explain how the invention of paper helped shape the world.
- To explain the traditional method for making paper.

				<ul style="list-style-type: none"> • To test a variety of types of paper for strength, absorbency, opacity, etc. • To make recycled paper. • To know how gunpowder was invented. • To explain how the invention of gunpowder helped shape the world. • To explain how the invention of the compass changed the world. • To make a hanging/floating compass. • To design and label my own compass. • To explain what water-powered machines are and how they helped change the world. • To explain why kites were first invented and how they were made. • To make a variety of kite prototypes and test their effectiveness. • To design, make and evaluate a kite according to specific design criteria.
<p>Programming and electrical</p>			<p>Invaders and settlers (Sum 2 A)</p> <p><u>Light up signs</u></p> <p>Understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors).</p> <ul style="list-style-type: none"> • To explore and analyse illuminated signs. • To create a simple circuit with incandescent bulbs and a switch. 	<p>Blitzed Britain (Sum 2 A)</p> <p><u>Programming pioneers</u></p> <p>Understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors). Apply understanding of computing to program, monitor and control their products.</p> <ul style="list-style-type: none"> • To explain how computers and computer programmes are used in a variety of products.

			<ul style="list-style-type: none">• To describe the difference between an LED and an incandescent bulb.• To create a simple circuit with an LED bulb and a resistor.• To make a circuit with a string of LED lights.• To design an illuminated light box against a set of design criteria.• To select materials, tools and components to create a free-standing structure to house an electrical circuit.• To strip, twist and join wire to make permanent connections.• To insert an electrical circuit into a free-standing structure to create an illuminated light box.• To evaluate the effectiveness of my finished product against the design criteria.	<ul style="list-style-type: none">• To explain how modern memory chips work to store information.• To write an algorithm to suggest how various appliances might work.• To develop and built a prototype pedestrian crossing using computer programming.• To develop, model and communicate ideas for an embedded system which monitors and controls a door, room or both.• To describe the typical design process for computer-controlled electronic products.• To debug errors in an algorithm.• To suggest ways to change an algorithm to improve a system.• To select and use electronic components to construct a prototype of an embedded computer-controlled room system.• To evaluate my design for a computer-controlled system.
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