

Hanslope Primary School

Design and Technology

Progression map

Level expected at the end of EYFS.

We have aimed to select the Early Learning Goals that link most closely to the Design and Technology National Curriculum.

Expressive Arts and Design (Creating with materials)

Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. 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, art, music, dance, role play and stories.

Creating with Materials

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.
- Make use of props and materials when role playing characters in narratives and stories.

Physical Development (Moving and Handling)

Children handle equipment and tools effectively, including pencils for writing.

Fine motor skills -

- Hold a pencil effectively in preparation for fluent writing- using the tripod grip in almost all cases.
- Use a range of small tools, including scissors, paintbrushes and cutlery.
- Begin to show accuracy and care when drawing.

KS1 National Curriculum Expectations.

Design

Pupils should be taught to:

- 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.

Make

Pupils should be taught to:

- 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.

Evaluate

Pupils should be taught to:

- explore and evaluate a range of existing products;
- evaluate their ideas and products against design criteria.

Technical Knowledge

Pupils should be taught to:

- build structures, exploring how they can be made stronger, stiffer and more stable;
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Cooking and Nutrition

Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes;
- understand where food comes from.

KS2 National Curriculum Expectations.

Design

Pupils should be taught to:

- 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.

Make

Pupils should be taught to:

- 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.

Evaluate

Pupils should be taught to:

- 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.
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures;
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages];
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors];
- apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

Pupils should be taught to:

- understand and apply the principles of a healthy and varied diet;
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques;
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Skills	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing (generate ideas)	<p>Design appealing products for a particular user based on simple design criteria.</p> <p>Develop and communicate these ideas through talk and drawings and mock ups where relevant.</p>	<p>Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</p> <p>Develop, model and communicate their ideas through talking, mock-ups and drawings.</p>	<p>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.</p> <p>Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web based recipes to develop and communicate ideas.</p>	<p>Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</p> <p>Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</p> <p>Generate, develop, model and communicate realistic ideas through discussion and, as</p>	<p>Generate innovative ideas through research including surveys, interviews and questionnaires and discussion with peers to develop a design brief and criteria for a design specification.</p> <p>Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</p> <p>Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.</p>	<p>Use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products.</p> <p>Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.</p> <p>Generate and develop innovative ideas and share and clarify these through discussion.</p>

				appropriate, annotated sketches, cross-sectional and exploded diagrams.	and, where appropriate, computer-aided design	Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design, pictorial representations of electrical circuits or circuit diagrams.
Making	<p>Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card.</p> <p>Select from a range of ingredients and materials according</p>	<p>Plan by suggesting what to do next.</p> <p>Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices.</p> <p>Select new materials, and</p>	<p>Plan the main stages of making.</p> <p>Select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product.</p> <p>Select from and use finishing techniques</p>	<p>Order the main stages of making.</p> <p>Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products.</p> <p>Explain their choice of</p>	<p>Produce detailed lists of equipment and fabrics relevant to their tasks.</p> <p>Write a step-by-step plan, including a list of resources required.</p> <p>Select from and use, a range of appropriate</p>	<p>Formulate a stepby-step plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select from and use appropriate tools to accurately measure, mark, cut and assemble</p>

	<p>to their characteristics to create a chosen product.</p>	<p>components, reclaimed materials and construction kits (where appropriate) to build and create their products.</p> <p>Use simple finishing techniques suitable for the products they are creating.</p>	<p>suitable for the product they are creating.</p>	<p>materials according to functional properties and aesthetic qualities.</p> <p>Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties.</p>	<p>utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources.</p>	<p>materials, and securely connect electrical components to produce reliable, functional products.</p> <p>Use finishing and decorative techniques suitable for the product they are designing and making.</p>
<p>Evaluating</p>	<p>Taste, explore and evaluate a range of products to determine the intended user's preferences for the product.</p> <p>Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose.</p>	<p>Explore a range of existing products related to their design criteria.</p> <p>Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the</p>	<p>Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project.</p> <p>Test their product against the original design criteria and with the intended user.</p>	<p>Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used.</p> <p>Test and evaluate their own products against design criteria and</p>	<p>Investigate and analyse products linked to their final product.</p> <p>Compare the final product to the original design specification and record the evaluations.</p> <p>Test products with intended user and critically evaluate</p>	<p>Continually evaluate and modify the working features of the product to match the initial design specification.</p> <p>Critically evaluate their products against their design specification, intended user and</p>

		original design criteria.	Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.	the intended user and purpose. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.	the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work	purpose, identifying strengths and areas for development, and carrying out appropriate tests. Test the system to demonstrate its effectiveness for the intended user and purpose.
Vocabulary	planning, investigating design, evaluate, make, user, purpose, ideas, product,	investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing	evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype
Knowledge	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food	Understand where a range of fruit and vegetables come	Understand where a range of fruit and vegetables come	Know how to use appropriate equipment and utensils to	Know how to use appropriate equipment and utensils to	Know how to use utensils and equipment including heat	Know how to use utensils and equipment including heat

	<p>from e.g. farmed or grown at home.</p> <p>Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of the eat well plate. Know and use technical and sensory vocabulary relevant to the project.</p>	<p>from e.g. farmed or grown at home.</p> <p>Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of the eat well plate.</p> <p>Know and use technical and sensory vocabulary relevant to the project.</p>	<p>prepare and combine food.</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</p> <p>Know and use relevant technical and sensory vocabulary appropriately.</p>	<p>prepare and combine food.</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</p> <p>Know and use relevant technical and sensory vocabulary appropriately.</p>	<p>sources to prepare and cook food.</p> <p>Understand about seasonality in relation to food products and the source of different food products.</p> <p>Know and use relevant technical and sensory vocabulary.</p>	<p>sources to prepare and cook food.</p> <p>Understand about seasonality in relation to food products and the source of different food products.</p> <p>Know and use relevant technical and sensory vocabulary.</p>
Vocabulary	<p><i>fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting,</i></p>	<p><i>fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin,</i></p>	<p><i>name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference,</i></p>	<p><i>name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist,</i></p>	<p><i>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten,</i></p>	<p><i>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy,</i></p>

	<i>squeezing, healthy diet, choosing, ingredients</i>	<i>seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients</i>	<i>greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</i>	<i>cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</i>	<i>dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble</i>	<i>varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble</i>
Structures		<p>Know how to make freestanding structures stronger, stiffer and more stable.</p> <p>Know and use technical vocabulary relevant to the project.</p>		<p>Develop and use knowledge of how to construct strong, stiff shell structures.</p> <p>Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</p> <p>Know and use technical vocabulary relevant to the project.</p>		<p>Understand how to strengthen, stiffen and reinforce 3-D frameworks.</p> <p>Know and use technical vocabulary relevant to the project.</p>
Vocabulary		<i>cut, fold, join, fix structure, wall,</i>		<i>shell structure, three-dimensional</i>		<i>frame structure, stiffen,</i>

		<p>tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder</p>		<p>(3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision,</p>		<p>strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent</p>
<p>Textiles</p>	<p>Understand how simple 3-D textile products are made, using a template to create two identical shapes.</p> <p>Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</p>		<p>Know how to strengthen, stiffen and reinforce existing fabrics.</p> <p>Understand how to securely join two pieces of fabric together.</p> <p>Understand the need for patterns</p>		<p>Produce a 3-D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</p> <p>Understand how fabrics can be strengthened, stiffened and</p>	

	<p>Explore different finishing techniques</p> <p>Know and use technical vocabulary relevant to the project.</p>		<p>and seam allowances.</p> <p>Know and use technical vocabulary relevant to the project.</p>		<p>reinforced where appropriate.</p> <p>Know and use technical vocabulary relevant to the project.</p>	
Vocabulary	<p><i>joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish</i></p>		<p><i>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance</i></p>		<p><i>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,</i></p>	
Mechanisms/mechanical systems	<p>Explore and use sliders and levers.</p> <p>Understand that different mechanisms produce different types of movement.</p> <p>Know and use technical vocabulary</p>	<p>Explore and use wheels, axles and axle holders.</p> <p>Distinguish between fixed and freely moving axles.</p> <p>Know and use technical vocabulary</p>	<p>Understand and use lever and linkage mechanisms.</p> <p>Distinguish between fixed and loose pivots.</p> <p>Know and use technical vocabulary</p>		<p>Understand that mechanical and electrical systems have an input, process and an output.</p> <p>Understand how gears and pulleys can be used to speed up, slow down or change</p>	

	relevant to the project.	relevant to the project.	relevant to the project.		the direction of movement. Know and use technical vocabulary relevant to the project.	
Vocabulary	<i>slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards</i>	<i>vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used</i>	<i>mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating</i>		<i>pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output</i>	
Electrical systems				Understand and use electrical systems in their products linked to science coverage. Apply their understanding of computing to program and		Understand and use electrical systems in their products linked to science coverage. Apply their understanding of computing to program, monitor

				<p>control their products.</p> <p>Know and use technical vocabulary relevant to the project.</p>		<p>and control their products.</p> <p>Know and use technical vocabulary relevant to the project.</p>
Vocabulary				<p>series circuit, fault, connection, toggle switch, push -to -make switch, push -to -break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device</p>		<p>reed switch, toggle switch, push - to -make switch, push -to -break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit</p>

Key: Autumn term, Spring term and Summer term

