

**Progression**

**Subject area: DT**

**Curriculum leader: Lesley Langton**

Progression	
EYFS - Reception	
	<p>We teach Design and Technology in our Reception class as an integral part of the topic work covered during the year and as set out in the Early Years Foundation Stage Framework which underpin the curriculum planning for children aged three to five. We encourage the development of skills, knowledge and understanding that help pupils make sense of their world as an integral part of our work. This learning forms the foundations for later work in Design and Technology. These early experiences include asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control. We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the pupil's interest and curiosity.</p>

Design	Key Stage 1	Key Stage 2
Understanding contexts, users and purposes	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> <li>• work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment</li> <li>• state what products they are designing and making</li> <li>• say whether their products are for themselves or other users</li> <li>• describe what their products are for</li> <li>• say how their products will work</li> <li>• say how they will make their products suitable for their intended users</li> <li>• use simple design criteria to help develop their ideas</li> </ul>	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> <li>• work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</li> <li>• describe the purpose of their products</li> <li>• indicate the design features of their products that will appeal to intended users</li> <li>• explain how particular parts of their products work</li> </ul> <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• gather information about the needs and wants of particular individuals and groups</li> <li>• develop their own design criteria and use these to inform</li> </ul>

		<p>their ideas</p> <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• carry out research, using surveys, interviews, questionnaires and web-based resources</li> <li>• identify the needs, wants, preferences and values of particular individuals and groups</li> <li>• <i>develop a simple design specification to guide their thinking</i></li> </ul>
Generating, developing, modelling and communicating ideas	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> <li>• generate ideas by drawing on their own experiences</li> <li>• use knowledge of existing products to help come up with ideas</li> <li>• develop and communicate ideas by talking and drawing</li> <li>• model ideas by exploring materials, components and construction kits and by making templates and mock ups</li> <li>• use information and communication technology, where appropriate, to develop and communicate their ideas</li> </ul>	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> <li>• share and clarify ideas through discussion</li> <li>• model their ideas using prototypes and pattern pieces</li> <li>• use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</li> <li>• use computer-aided design to develop and communicate their ideas</li> </ul> <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• generate realistic ideas, focusing on the needs of the user</li> <li>• <i>make design decisions that take account of the availability of resources</i></li> </ul> <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• generate innovative ideas, drawing on research</li> <li>• <i>make design decisions, taking account of constraints such as time, resources and cost</i></li> </ul>
<b>Making</b>	<b>Key Stage 1</b>	<b>Key Stage 2</b>
Planning	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> <li>• <i>plan by suggesting what to do next</i></li> <li>• select from a range of tools and equipment, <i>explaining their choices</i></li> <li>• select from a range of materials and components according to their characteristics</li> </ul>	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> <li>• select tools and equipment suitable for the task</li> <li>• <i>explain their choice of tools and equipment in relation to the skills and techniques they will be using</i></li> <li>• select materials and components suitable for the task</li> <li>• explain their choice of materials and components according to functional properties and aesthetic qualities</li> </ul> <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• <i>order the main stages of making</i></li> </ul>

		<p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• <i>produce appropriate lists of tools, equipment and materials that they need</i></li> <li>• <i>formulate step-by-step plans as a guide to making</i></li> </ul>
Practical skills and techniques	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> <li>• follow procedures for safety and hygiene</li> <li>• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components</li> <li>• measure, mark out, cut and shape materials and components</li> <li>• assemble, join and combine materials and components</li> <li>• use finishing techniques, including those from art and design</li> </ul>	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> <li>• follow procedures for safety and hygiene</li> <li>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> </ul> <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• measure, mark out, cut and shape materials and components with some accuracy</li> <li>• assemble, join and combine materials and components with some accuracy</li> <li>• apply a range of finishing techniques, including those from art and design, with some accuracy</li> </ul> <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• accurately measure, mark out, cut and shape materials and components</li> <li>• accurately assemble, join and combine materials and components</li> <li>• accurately apply a range of finishing techniques, including those from art and design</li> <li>• <i>use techniques that involve a number of steps</i></li> <li>• demonstrate resourcefulness when tackling practical problems</li> </ul>
<b>Evaluating</b>	<b>Key Stage 1</b>	<b>Key Stage 2</b>
Own ideas and products	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> <li>• talk about their design ideas and what they are making</li> <li>• make simple judgements about their products and ideas against design criteria</li> <li>• <i>suggest how their products could be improved</i></li> </ul>	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> <li>• identify the strengths and areas for development in their ideas and products</li> <li>• consider the views of others, including intended users, to improve their work</li> </ul>

		<p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• refer to their design criteria as they design and make</li> <li>• use their design criteria to evaluate their completed products</li> </ul> <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</li> <li>• <i>evaluate their ideas and products against their original design specification</i></li> </ul>
Existing products	<p>Across KS1 pupils should explore:</p> <ul style="list-style-type: none"> <li>• what products are</li> <li>• who products are for</li> <li>• what products are for</li> <li>• how products work</li> <li>• how products are used</li> <li>• where products might be used</li> <li>• what materials products are made from</li> <li>• what they like and dislike about products</li> </ul>	<p>Across KS2 pupils should investigate and analyse:</p> <ul style="list-style-type: none"> <li>• how well products have been designed</li> <li>• how well products have been made</li> <li>• why materials have been chosen</li> <li>• what methods of construction have been used</li> <li>• how well products work</li> <li>• how well products achieve their purposes</li> <li>• how well products meet user needs and wants</li> </ul> <p>In early KS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> <li>• who designed and made the products</li> <li>• where products were designed and made</li> <li>• when products were designed and made</li> <li>• whether products can be recycled or reused</li> </ul> <p>In late KS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> <li>• how much products cost to make</li> <li>• how innovative products are</li> <li>• how sustainable the materials in products are</li> <li>• what impact products have beyond their intended purpose</li> </ul>
Key events and individuals	Not a requirement in KS1	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>• about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</li> </ul>

Technical Knowledge	Key Stage 1	Key Stage 2
Making products work	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> <li>• about the simple working characteristics of materials and components</li> <li>• about the movement of simple mechanisms such as levers, sliders, wheels and axles</li> <li>• how freestanding structures can be made stronger, stiffer and more stable</li> <li>• <i>that a 3-D textiles product can be assembled from two identical fabric shapes</i></li> <li>• <i>that food ingredients should be combined according to their sensory characteristics</i></li> <li>• <i>the correct technical vocabulary for the projects they are undertaking</i></li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>• how to use learning from science to help design and make products that work</li> <li>• how to use learning from mathematics to help design and make products that work</li> <li>• that materials have both functional properties and aesthetic qualities</li> <li>• <i>that materials can be combined and mixed to create more useful characteristics</i></li> <li>• that mechanical and electrical systems have an input, process and output</li> <li>• <i>the correct technical vocabulary for the projects they are undertaking</i></li> </ul> <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>• how mechanical systems such as levers and linkages or pneumatic systems create movement</li> <li>• how simple electrical circuits and components can be used to create functional products</li> <li>• how to program a computer to control their products</li> <li>• how to make strong, stiff shell structures</li> <li>• <i>that a single fabric shape can be used to make a 3D textiles product</i></li> <li>• <i>that food ingredients can be fresh, pre-cooked and processed</i></li> </ul> <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>• how mechanical systems such as cams or pulleys or gears create movement</li> <li>• how more complex electrical circuits and components can be used to create functional products</li> <li>• how to program a computer to monitor changes in the environment and control their products</li> <li>• how to reinforce and strengthen a 3D framework</li> </ul>

		<ul style="list-style-type: none"> <li>• <i>that a 3D textiles product can be made from a combination of fabric shapes</i></li> <li>• <i>that a recipe can be adapted by adding or substituting one or more ingredients</i></li> </ul>
<b>Cooking &amp; Nutrition</b>	<b>Key Stage 1</b>	<b>Key Stage 2</b>
Where food comes from	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> <li>• that all food comes from plants or animals</li> <li>• that food has to be farmed, grown elsewhere (e.g. home) or caught</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>• that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</li> </ul> <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>• that seasons may affect the food available</li> <li>• how food is processed into ingredients that can be eaten or used in cooking</li> </ul>
Food preparation, cooking and nutrition	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> <li>• how to name and sort foods into the five groups in 'The Eatwell Plate'</li> <li>• that everyone should eat at least five portions of fruit and vegetables every day</li> <li>• how to prepare simple dishes safely and hygienically, without using a heat source</li> <li>• how to use techniques such as cutting, peeling and grating</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>• how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>• how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> </ul> <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>• that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eatwell Plate'</li> <li>• that to be active and healthy, food and drink are needed to provide energy for the body</li> </ul> <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>• <i>that recipes can be adapted to change the appearance, taste, texture and aroma</i></li> <li>• that different food and drink contain different substances - nutrients, water and fibre - that are needed for health</li> </ul>

	Skills					
	Year 1 (KS1 skills)	Year 2 (KS1 skills)	Year 3 (Lower KS2 skills)	Year 4 (Lower KS2 skills)	Year 5 (Upper KS2 skills)	Year 6 (Upper KS2 skills)
<b>Developing, planning and communicating ideas</b>	<p>Follow verbal instructions. Explain what they are making and which materials they are using. Name the tools they are using. Describe what they need to do next. Select materials from a limited range that will meet the design criteria. Model ideas with kits, reclaimed materials. Select pictures to help develop ideas. Discuss their work as it progresses.</p>	<p>Select and name tools needed to work the materials.</p> <p>Select appropriate techniques explaining: First... Next... Last...</p> <p>Use pictures and words to convey what they want to design and make.</p> <p>Describe models and drawings of ideas and intentions.</p> <p>Use kits/reclaimed materials to develop an idea.</p> <p>Use drawings to record ideas as they are developed.</p> <p>Add notes to drawings to help explanations. + Year 1 skills.</p>	<p>Investigate similar products to the one to be made to give starting points for a design.</p> <p>Draw/sketch products to help analyse how they are made.</p> <p>Think ahead about the order of their work and decide upon tools and materials.</p> <p>Plan a sequence of actions to make a product.</p> <p>Record the plan by drawing (labelled sketches) or writing.</p>	<p>Draw/sketch products to help understand how they are made.</p> <p>Develop more than one design or adaptation of an initial design.</p> <p>Propose realistic suggestions as to how they can achieve their designs.  + Year 3 skills.</p>	<p>Investigate products/images to collect ideas.</p> <p>Sketch and model alternative ideas.</p> <p>Record ideas using annotated diagrams.</p> <p>Make prototypes.</p> <p>Use found information to inform decisions.</p>	<p>Combine modelling and drawing to refine ideas.</p> <p>Plan a sequence of work using a storyboard.</p> <p>Use a computer to model ideas.</p> <p>Draw plans which can be read/followed by someone else.</p> <p>Give a report using correct technical vocabulary.  + Year 5 skills.</p>
<b>Food</b>	<p>Develop a food vocabulary using taste, smell, texture and touch. Group familiar food products e.g. fruit and vegetables. Cut and peel a range of ingredients. Work safely and</p>	<p>Grate and chop a range of ingredients. Measure and weigh food items - non-statutory measures e.g. spoons, cups.  + Year 1 skills.</p>	<p>Develop sensory vocabulary/knowledge using taste, smell, texture and touch. Follow instructions. Make healthy eating choices from an understanding of a balanced diet. Join and combine a range of ingredients.</p>	<p>Analyse the taste, texture, smell and appearance of a range of food.  + Year 3 skills.</p>	<p>Prepare food products taking into account the properties of ingredients and sensory characteristics. Select and prepare foods for a particular purpose. Taste a range of ingredients/food items to develop a sensory food vocabulary for use when designing. Weigh and measure using scales. Cut and shape ingredients using appropriate tools and equipment. Join and combine food ingredients appropriately. Decorate appropriately.</p>	

	hygienically. Understand the need for a variety of foods in the diet.		Work safely and hygienically. Measure and weigh ingredients appropriately.		Work safely and hygienically. Show an awareness of a healthy diet from an understanding of a balanced diet.	
<b>Textiles</b>	Colour fabrics using a range of techniques e.g. fabric paints, printing and painting. Join fabrics with glue. Decorate fabrics with buttons, beads, sequins, braids and ribbons.	Cut out shapes which have been created by drawing around a template onto the fabric. Join fabrics by using a running stitch, staples, over sewing and tape. + Year 1 skills.	Join fabrics using running stitch, over sewing and back stitch. Use appropriate decoration techniques (glue). Create a simple pattern.	Understand seam allowance. Explore fastenings and recreate some e.g. sew on buttons and make loops. Prototype a product using j cloths. Use appropriate decoration techniques (appliqué or simple stitches). Understand the need for patterns.  + Year 3 skills.	Create 3D products using pattern pieces and seam allowance. Understand pattern layout. Join fabrics using over sewing, back stitch and blanket stitch. Make quality products.	Decorate textiles appropriately often before joining components. Pin and tack fabric pieces together. Combine fabrics to create more useful properties. + Year 5 skills
<b>Construction</b>	Make vehicles with construction kits which contain free running wheels.	Use a range of materials to create models with wheels and axels e.g. glue, tape, dowel and cotton reels. Attach wheels to a chassis using an axle. Join appropriately for different materials and situations e.g. glue and tape. Mark out materials to be cut using a	Make structures more stable by giving them a wide base.	Create a shell or frame structure; strengthen frames with diagonal struts. Incorporate a circuit with a bulb or buzzer into a model. Prototype frame and shell structures. Measure and mark square selection, strip and dowel accordingly to 1cm. Use a glue gun with close one to one supervision.	Use bradawl to mark hole positions. Join materials using appropriate methods. Control a model using an ICT control programme. Use a cam to make an up and down mechanism. Build frameworks using a range of materials to support mechanisms. E.g. wood, corrugated card and plastic. Use a glue gun with close supervision.	Use a hand drill to drill tight and loose fit holes. Cut strip wood, dowel and square section wood accurately to 1cm. Incorporate a motor and a switch into a model.  + Year 5 skills.



		<p>template. Observe glue gun being used by an adult.</p>		+ Year 3 skills.		
<b>Sheet materials</b>	<p>Fold, tear and cut paper and card. Roll paper to create tubes. Cut along lines, straight and curved. Use a hole punch. Insert paper fasteners for card linkages. Create hinges. Use simple pop ups.</p>	<p>Curl paper. Investigate strengthening sheet materials. Investigate joining temporary, fixed and moving materials.  + Year 1 skills.</p>	<p>Cut slots. Cut internal shapes. Use lolly sticks/card to make levers and linkages.</p>	<p>Use linkages to make movement larger or more varied. Use and explore complex pop ups. Create nets.  + Year 3 skills.</p>	<p>Cut slots. Cut accurately and safely to a marked line. Join and combine materials with temporary, fixed or moving joints. Use a craft knife, cutting mat and safety ruler with one to one supervision if appropriate. Choose an appropriate sheet material for a purpose.</p>	
<b>Evaluating</b>	<p>Say what they like and do not like about items they have made and attempt to say why. Talk about their designs as they develop and identify good and bad points. Talk about changes made during the marking process.</p>	<p>Discuss how closely their finished products meet their design criteria.  + Year 1 skills.</p>	<p>Identify the strengths and weaknesses of their design ideas. Consider and explain how the finished product could be improved. Discuss how well the finished product meets the design criteria and how well it meets the needs of the user.</p>	<p>Decide which design idea to develop.  + Year 3 skills.</p>	<p>Use design criteria to inform decisions about ways to proceed. Justify 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. Identify what does and does not work in a product. Make suggestions as to how their design could be improved.</p>	