

# DESIGN TECHNOLOGY

## at Roydon Primary School



### Objectives from the National Curriculum:

<p><b>EYFS:</b> Early Learning Goals can be found by clicking <a href="#">here</a></p> <p>The <b>Early Learning Goal</b> is <b>Expressive arts and design:</b> They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p>	<p><b>Key Stage 1:</b> <u>Exploring &amp; Developing Ideas</u></p> <ul style="list-style-type: none"> <li>• Design purposeful, functional, appealing products for themselves and other users based on design criteria.</li> <li>• Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</li> <li>• Select from and use a range of tools and equipment to perform practical tasks.</li> <li>• Select and use a wide range of materials and components.</li> </ul> <p><u>Evaluating &amp; Developing Work</u></p> <ul style="list-style-type: none"> <li>• Explore and evaluate a wide range on existing products.</li> <li>• Evaluate their own ideas and products against design criteria.</li> <li>• Build structures, exploring how they can be made stronger, stiffer and more stable.</li> <li>• Explore and use mechanisms.</li> </ul>	<p><b>Key Stage 2:</b> <u>Exploring &amp; Developing Ideas</u></p> <ul style="list-style-type: none"> <li>• Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</li> <li>• Generate, develop, model and communicate ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer aided design.</li> <li>• Select from a wider range of tools and equipment.</li> <li>• Select from a wider range of materials and components.</li> </ul> <p><u>Evaluating &amp; Developing Work</u></p> <ul style="list-style-type: none"> <li>• Investigate and analyse a range of existing products.</li> <li>• Understand how key events and individuals in technology have helped shape the world.</li> <li>• Apply understanding of how to make more complex structures more stable.</li> <li>• Understand and use mechanical systems in their products.</li> <li>• Understand and use electrical systems in their products.</li> <li>• Apply their understanding of computing to program, monitor and control their products.</li> </ul>
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### Progression of Skills:

Reception and Year 1	Year 1 and Year 2	Year 3 and Year 4	Year 5 and Year 6
<b>Developing, planning and communicating ideas</b>			
<ul style="list-style-type: none"> <li>• Beginning to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces.</li> <li>• Realises tools can be used for a purpose.</li> <li>• Manipulates materials to achieve a planned effect.</li> <li>• Uses simple tools and techniques competently and appropriately.</li> <li>• Selects appropriate resources and adapts work where necessary.</li> <li>• Selects tools and techniques needed to shape,</li> </ul>	<ul style="list-style-type: none"> <li>• Follow verbal instructions. (Y1)</li> <li>• Explain what they are making and which materials they are using. (Y1)</li> <li>• Name the tools they are using. (Y1)</li> <li>• Describe what they need to do next. (Y1)</li> <li>• Select materials from a limited range that will meet the design criteria. (Y1)</li> <li>• Select and name tools needed. (Y2)</li> <li>• Select appropriate techniques explaining: First... Next... Last... (Y2)</li> <li>• Use pictures and words to convey what they</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate similar products to the one to be made to give starting points for a design. (Y3)</li> <li>• Draw/sketch products to help analyse how they are made. (Y3)</li> <li>• Think ahead about the order of their work and decide upon tools and materials. (Y3)</li> <li>• Plan a sequence of actions to make a product. (Y3)</li> <li>• Draw/sketch products to help understand how they are made. (Y4)</li> <li>• Record the plan by drawing (labelled sketches</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate products/images to collect ideas. (Y5)</li> <li>• Sketch and model alternative ideas. (Y5)</li> <li>• Record ideas using annotated diagrams. (Y5)</li> <li>• Make prototypes. (Y5)</li> <li>• Use found information to inform decisions. (Y5)</li> <li>• Combine modelling and drawing to refine ideas. (Y6)</li> <li>• Plan a sequence of work using a storyboard. (Y6)</li> <li>• Use a computer to model ideas. (Y6)</li> </ul>



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<p>assemble and join materials they are using.</p> <ul style="list-style-type: none"> <li>• They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>• Follow verbal instructions. (Y1)</li> <li>• Explain what they are making and which materials they are using. (Y1)</li> <li>• Name the tools they are using. (Y1)</li> <li>• Describe what they need to do next. (Y1)</li> </ul> <p>Select materials from a limited range that will meet the design criteria. (Y1)</p> <ul style="list-style-type: none"> <li>• Model ideas with kits/reclaimed materials. (Y1)</li> <li>• Select pictures to help develop ideas. (Y1)</li> </ul> <p>Discuss their work as it progresses.(Y1)</p>	<p>want to design and make. (Y2)</p> <ul style="list-style-type: none"> <li>• Describe models, drawings of ideas &amp; intentions. (Y2)</li> <li>• Use kits/reclaimed materials to develop ideas. (Y2)</li> <li>• Model ideas with kits, reclaimed materials. (Y1)</li> <li>• Select pictures to help develop ideas. (Y1)</li> <li>• Discuss their work as it progresses.(Y1)</li> <li>• Use drawings to record ideas as they develop. (Y2)</li> <li>• Add notes to drawings to help explanations. (Y2)</li> </ul>	<p>or writing and develop more than one design or adaptation of an initial design. (Y3/Y4)</p> <ul style="list-style-type: none"> <li>• Propose realistic suggestions as to how they can achieve their designs. (Y4)</li> </ul>	<ul style="list-style-type: none"> <li>• Draw plans which can be read/followed by someone else. (Y6)</li> <li>• Give a report using correct technical vocabulary. (Y6)</li> </ul>
<p><b>Textiles</b></p>			
<ul style="list-style-type: none"> <li>• Beginning to be interested in and describe the texture of things.</li> <li>• Colour fabrics using a range of techniques e.g. fabric paints, printing and painting. (Y1)</li> <li>• Join fabrics with glue. (Y1)</li> <li>• Decorate fabrics with buttons, beads, sequins, braids and ribbons. (Y1)</li> </ul>	<ul style="list-style-type: none"> <li>• Colour fabrics using a range of techniques e.g. fabric paints, printing and painting. (Y1)</li> <li>• Join fabrics with glue. (Y1)</li> <li>• Decorate fabrics with buttons, beads, sequins, braids and ribbons. (Y1)</li> <li>• Cut out shapes which have been created by drawing around a template onto the fabric. (Y2)</li> <li>• Join fabrics by using a running stitch, staples, over sewing and tape. (Y2)</li> </ul>	<ul style="list-style-type: none"> <li>• Join fabrics using running stitch, over sewing and back stitch. (Y3)</li> <li>• Use appropriate decoration techniques (glue). (Y3)</li> <li>• Understand the need for patterns and create a simple pattern. (Y3/Y4)</li> <li>• Understand seam allowance. (Y4)</li> <li>• Explore &amp; recreate fastenings e.g. sew on buttons and make loops. (Y4)</li> <li>• Prototype a product using j cloths. (Y4)</li> <li>• Use appropriate decoration techniques (appliqué or simple stitches). (Y4)</li> </ul>	<ul style="list-style-type: none"> <li>• Create 3D products using pattern pieces and seam allowance. (Y5)</li> <li>• Understand pattern layout. (Y5)</li> <li>• Join fabrics using over sewing, back stitch and blanket stitch. (Y5)</li> <li>• Make quality products.(Y5)</li> <li>• Decorate textiles appropriately often before joining components. (Y6)</li> <li>• Pin and tack fabric pieces together. (Y6)</li> <li>• Combine fabrics to create more useful properties. (Y6)</li> </ul>
<p><b>Construction</b></p>			
<ul style="list-style-type: none"> <li>• Uses various construction materials.</li> <li>• Joins construction pieces together to build and balance.</li> <li>• Constructs with a purpose in mind, using a variety of resources.</li> <li>• Make vehicles with construction kits which contain free running wheels. (Y1)</li> </ul>	<ul style="list-style-type: none"> <li>• Make vehicles with construction kits which contain free running wheels. (Y1)</li> <li>• Attach wheels to a chassis using an axle. (Y2)</li> <li>• Join appropriately for different materials and situations e.g. glue and tape. (Y2)</li> <li>• Mark out materials to be cut using a template. (Y2)</li> <li>• Observe glue gun being used by an adult. (Y2)</li> </ul>	<ul style="list-style-type: none"> <li>• Make structures more stable by giving them a wide base. (Y3)</li> <li>• Create a shell or frame structure; strengthen frames with diagonal struts. (Y4)</li> <li>• Incorporate a circuit with a bulb or buzzer into a model.(Y4)</li> <li>• Prototype frame and shell structures. (Y4)</li> <li>• Measure and marksquare selection, strip and dowel accordingly to 1cm. (Y4)</li> <li>• Use a glue gun with close one to one supervision. (Y4)</li> </ul>	<ul style="list-style-type: none"> <li>• Use bradawl to mark hole positions. (Y5)</li> <li>• Join materials using appropriate methods. (Y5)</li> <li>• Control a model using ICT control program. (Y5)</li> <li>• Use a cam to make an up and down mechanism. (Y5)</li> <li>• Build frameworks using a range of materials to support mechanisms, e.g. wood, corrugated card and plastic. (Y5)</li> <li>• Use a glue gun with close supervision. (Y5)</li> <li>• Use hand drill to drill tight &amp; loose fit holes. (Y6)</li> <li>• Cut strip wood, dowel and square section wood accurately to 1cm. (Y6)</li> <li>• Incorporate motors &amp; switches into model. (Y6)</li> </ul>

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Sheet materials			
<ul style="list-style-type: none"> <li>• Fold, tear and cut paper and card. (Y1)</li> <li>• Roll paper to create tubes. (Y1)</li> <li>• Cut along lines, straight and curved. (Y1)</li> <li>• Use a hole punch. (Y1)</li> <li>• Insert paper fasteners for card linkages. (Y1)</li> <li>• Create hinges. (Y1)</li> <li>• Use simple pop ups. (Y1)</li> </ul>	<ul style="list-style-type: none"> <li>• Fold, tear and cut paper and card. (Y1)</li> <li>• Roll paper to create tubes. (Y1)</li> <li>• Cut along lines, straight and curved. (Y1)</li> <li>• Use a hole punch. (Y1)</li> <li>• Insert paper fasteners for card linkages. (Y1)</li> <li>• Create hinges. (Y1)</li> <li>• Use simple pop ups. (Y1)</li> <li>• Curl paper. (Y2)</li> <li>• Investigate strengthening sheet materials. (Y2)</li> <li>• Investigate joining temporary, fixed and moving materials (Y2)</li> </ul>	<ul style="list-style-type: none"> <li>• Cut slots. (Y3)</li> <li>• Cut internal shapes. (Y3)</li> <li>• Use lolly sticks/card to make levers and linkages.(Y3)</li> <li>• Use linkages to make movement larger or more varied. Y4)</li> <li>• Use and explore complex pop ups. (Y4)</li> <li>• Create nets. (Y4)</li> </ul>	<ul style="list-style-type: none"> <li>•Cut slots. (Y5)</li> <li>•Cut accurately and safely to a marked line, straight and curved. (Y5/Y6)</li> <li>•Join and combine materials with temporary, fixed or moving joints. (Y5)</li> <li>•Use a craft knife, cutting mat and safety ruler with one to one supervision if appropriate. (Y5)</li> <li>•Choose an appropriate sheet material for a purpose. (Y5)</li> <li>•Fold, tear and cut paper and card. (Y6)</li> <li>•Roll paper to create tubes. (Y6)</li> <li>•Use a hole punch. (Y6)</li> <li>•Insert paper fasteners for card linkages. (Y6)</li> <li>•Create hinges. (Y6)</li> <li>•Use simple pop ups. (Y6)</li> </ul>
Evaluating			
<ul style="list-style-type: none"> <li>• Say what they like and do not like about items they have made and attempt to say why. (Y1)</li> <li>• Talk about their designs as they develop and identify good and bad points. (Y1)</li> <li>• Talk about changes made during the marking process. (Y1)</li> </ul>	<ul style="list-style-type: none"> <li>• Say what they like and do not like about items they have made and attempt to say why. (Y1)</li> <li>• Talk about their designs as they develop and identify good and bad points. (Y1)</li> <li>• Talk about changes made during the marking process. (Y1)</li> <li>• Discuss how closely their finished products meet their design criteria. (Y2)</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the strengths and weaknesses of their design ideas. (Y3)</li> <li>• Consider and explain how the finished product could be improved. (Y3)</li> <li>• Discuss how well the finished product meets the design criteria and how well it meets the needs of the user. (Y3)</li> <li>• Decide which design idea to develop. (Y4)</li> </ul>	<ul style="list-style-type: none"> <li>•Use design criteria to inform decisions about ways to proceed. (Y5)</li> <li>•Justify decisions about materials and methods of construction. (Y5)</li> <li>•Reflect on their work using design criteria stating how well the design fits the needs of the user. (Y5)</li> <li>•Identify what does and does not work in a product. (Y5)</li> <li>•Make suggestions as to how their design could be improved and talk about changes made during the marking process. (Y5/Y6)</li> <li>• Say what they like and do not like about items they have made and attempt to say why. (Y6)</li> <li>• Talk about their designs as they develop and identify good and bad points. (Y6)</li> </ul>