

# Progression of Skills in Design Technology

## Assessment points:

**Design**

**Evaluate**

## Statement of Intent

We wish the children in our school to understand the relevance of design and technology on today's society. We believe it is important that children develop their ability to suppress and explore their ideas in a variety of ways. We believe children should be able to evaluate before, during and after they have completed products, reflected critically on success and improvements. We believe it is important that children develop their ability to express and explore their design ideas in a variety of ways. We believe that children need to be able to evaluate before, during and after they have completed products, reflecting critically on success and improvements.

## Implementation

All teaching of DT should follow the design, make and evaluate cycle. Each stage should be rooted in technical knowledge and use the subject progression ladder to ensure year on year progression. The design process should be rooted in real life, relevant contexts to give meaning to learning. While making, children should be given choice and a range of tools to choose freely from. They should learn from their mistakes and be reflective in their learning. To evaluate, children should be able to evaluate their own products against a design criteria. Each of these steps should be rooted in technical knowledge and vocabulary. DT should be taught to a high standard, where each of the stages should be given equal weight. There should be evidence in each of these stages in the topic books which are used from year 1 – 6 , which should also develop to show clear progression across the key stages as they are passed up through each phase. Year R pupils will have photos, observations and quotes in their learning journeys.

## Impact

A range of ongoing assessments take place throughout the year. Teachers use this information to inform future lessons; ensuring children are supported and challenged appropriately. Teachers use 'design' and 'evaluate' as their assessment focus, as well as considering the rest of the programme of study. SEN pupils are carefully considered and adaptations are made to ensure that they are included and well supported. Data is collected at the end of the school year and recorded on SIMS so teachers can see year on year which pupils are exceeding, met or working below national expectation.

Children in Foundation Stage are assessed within Expressive Arts and Design and Knowledge and Understanding of the World and their progress is tracked termly using the Tapestry. Age related expectation levels are reported to parents at the end of the reception year. SEN pupils are carefully considered and adaptations are made to ensure that they are included and well supported. Data is collected at the end of the school year and recorded on SIMS so teachers can see year on year which pupils are exceeding, met or working below national expectation.

## Cultural Capital

With our firm belief that knowledge is transferable, our pupils are given every opportunity to participate in a wide range of learning experiences beyond their classroom. Our carefully structured DT curriculum provides opportunities additional to the NC endpoints, to build cultural capital and, through exposure DT lessons to life-skills such as innovation and entrepreneurship, enable pupils to become well-rounded members of society in preparation for later life. Cultural Capital in DT is explored through learning and developing life-skills such as sawing, sowing and cooking. Children experience using a range of tools and materials, such as saws, needles, wood, glue guns and fabrics, to explore their ideas.



| Aims   | Key Element                                   | Key Skills   | Year R  | Year 1 / 2   | Year 3 / 4   | Year 5 / 6  | Word accumulation e/o Y6  | Skills accumulation E/O Y6   |
|--|---|--|---|--|--|---|---|--|
| <p>Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users</p> <p>Assessment statement:<br/>Design</p>            | Developing, planning and communicating ideas. | <p>Generating ideas</p> <p>Label drawings and plans</p>  | <p>Represent ideas, thoughts and feelings through design.</p> <p>Key vocab</p> <p>Idea, Drawing</p> | <ul style="list-style-type: none"> <li>Generate ideas by drawing on their own and other people's experiences</li> <li>Develop their design ideas through discussion, observation, drawing and modelling</li> <li>Identify a purpose for what they intend to design and make</li> <li>Identify simple design criteria, applying findings from their earlier research</li> <li>Make simple drawings and label parts</li> <li>Model their ideas in card and paper.</li> </ul> <p>Key Vocabulary<br/>Design, Observation, Modelling<br/>Research, Labelling</p>  | <ul style="list-style-type: none"> <li>Generate ideas for an item, considering the purpose for which they are designing, and the user/s</li> <li>Explore, develop and communicate design proposals by modelling ideas</li> <li>Evaluate products and identify criteria that can be used for their own designs</li> <li>Make labelled drawings from different views showing specific features</li> </ul> <p>Key vocabulary<br/>Specific features, Criteria, Perspectives, Design, Target<br/>Audience</p>   | <ul style="list-style-type: none"> <li>Generate ideas through brainstorming and identify a purpose for their product</li> <li>Develop a clear idea of what has to be done, planning how to use appropriate materials, equipment, tools, techniques and processes, and suggesting alternative methods of making if the first attempts fail</li> <li>Use results of investigations, information sources, including ICT when developing design ideas</li> <li>Communicate their ideas through detailed labelled drawings. Using a range of views and styles - nets, isometric?</li> <li>Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways</li> </ul> <p>Key Vocabulary<br/>Brainstorming, Alternative<br/>Detailing, Investigations<br/>Aspects, Design proposals</p> | <p>Design<br/>Observation<br/>Modelling<br/>Research<br/>Labelling<br/>Specific features<br/>Criteria<br/>Perspectives<br/>Design<br/>Target<br/>Audience<br/>Brainstorming<br/>Alternative<br/>Detailing<br/>Investigations<br/>Aspects<br/>Designa<br/>proposals</p>  | <p>Generate purposeful ideas for design</p> <p>Plan and model ideas drawing upon information sources, including ICT, to produce a clear design idea.</p> <p>Communicate their design plans through increasingly detailed plans</p>                           |
| <p>Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world</p> <p>Assessment statement:<br/>Make</p> | Practical expertise for making a product      | <p>Selecting tools</p> <p>Measuring</p> <p>Joining</p> <p>Cutting</p> <p>Hygiene awareness</p> | <p>Children will safely use and experiment with variety of tools materials and techniques.</p>      | <ul style="list-style-type: none"> <li>Make their design using appropriate techniques and begin to select tools and materials; use vocab' to name and describe them</li> <li>Measure, cut and score with some accuracy for woodwork (egg box cars)</li> <li>Use hand tools safely and appropriately</li> <li>Assemble, join and combine materials in order to make a product</li> <li>Choose and use appropriate finishing techniques to improve the appearance of their product Cut, shape and join fabric to make a simple garment.</li> <li>Begin to use a running stitch to join simple fabrics and pre-cut shapes eg puppets</li> </ul> <p>Key vocabulary<br/>Techniques, Tools, Materials<br/>Joins, Process, Appearance<br/>Measure</p> | <ul style="list-style-type: none"> <li>Select tools and techniques for making their product</li> <li>Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques for woodwork eg photoframes/photocube</li> <li>Work safely and accurately with a range of simple tools</li> <li>Think about their ideas as they make progress and be willing to change things if this helps them improve their work</li> <li>Measure, tape or pin, cut and join fabric (temporarily and permanently) with some accuracy using a range of different stitches, weave and knit (tack with running stitch,. Develop running stitch and cross stitch (Binca) and apply to product eg bookmark. Add decoration to the product.</li> <li>Use simple graphical communication techniques</li> <li>Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</li> </ul> <p>Key Vocabulary<br/>Accuracy, Equipment, Range, Graphic, Temporary, Permanent</p> | <ul style="list-style-type: none"> <li>Use materials, components and techniques and use these safely and accurately (moon buggy with axles and motors)</li> <li>Assemble components to make working models</li> <li>Construct products using permanent joining techniques eg pin, sew and stitch. Create a pattern with seams and use appropriate stitches to create a robust product. Eg cross, running, chain, blanket stitches. Apply to the creation of a product eg a cushion cover</li> <li>Make modifications as they go along to achieve a quality product.</li> </ul> <p>Key Vocabulary<br/>Components, Working models<br/>Construct, Modifications, Pattern<br/>Cross, chain, blanket and running stitches</p>  | <p>Techniques Tools<br/>Materials Joins<br/>Process<br/>Appearance<br/>Measure<br/>Accurately,<br/>Equipment,<br/>Range, Graphic<br/>Temporary,<br/>Permanent ,<br/>Thread, Needle ,<br/>Stitch Tack<br/>Components<br/>Working models<br/>Construct<br/>Modifications<br/>Pattern<br/>Cross, chain,<br/>blanket and<br/>running stitches</p> | <p>Select tools that enable designs to be created, working safely and accurately.</p> <p>Measure accurately to create working models using increasing skill and precision.</p> <p>Modify a product as it progresses so that it meets the design criteria</p> |

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|   |   |   |  |  | Thread, Needle , Stitch Tack   |   |   |   |
| Assessment Statement:<br>Technical Knowledge  | Understanding the technical aspects of their designs and products | Sewing stitches<br><br>Circuits<br><br>Computer program                             |  | <ul style="list-style-type: none"><li>build structures, exploring how they can be made stronger, stiffer and more stable</li><li>explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li></ul><br><b>Key Vocabulary</b><br>Gears, pulleys.   | <ul style="list-style-type: none"><li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li><li>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkage</li></ul><br><b>Key Vocabulary</b><br>Gears, pulleys.   | <ul style="list-style-type: none"><li>- apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li><li>- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li><li>- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li><li>- apply their understanding of computing to program, monitor and control their products.</li></ul><br><b>Key Vocabulary</b><br>Cams, switches. Motors, bulbs, Buzzers, cells, series circuits |   |   |
| Understand and apply the principles of nutrition and learn how to cook.<br><br>Assessment statement:<br>Cooking | Practical expertise for making a nutritious food product          | Measure<br><br>Cut<br><br>Hygiene and safety awareness<br><br>Nutritional knowledge | Children will experience healthy snacks and the importance of washing hands before eating.           | <ul style="list-style-type: none"><li>Combine materials/ingredients in order to make a product</li><li>Select and use appropriate fruit and vegetables, processes and tools</li><li>Follow safe procedures for food safety and hygiene</li><li>Use the basic principles of a healthy and varied diet to prepare dishes</li><li>Understand where food comes from.</li></ul><br><b>Key vocabulary</b><br>Healthy, bacteria, knife, recipe, fruit, vegetables | <ul style="list-style-type: none"><li>Demonstrate hygienic food preparation and storage</li><li>Select tools and techniques for making their product</li><li>Understand and apply the principles of a healthy and varied diet</li><li>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li></ul><br><b>Key Vocabulary</b><br>Savoury, varied diet, temperature, portions, carbohydrate, protein. | <ul style="list-style-type: none"><li>Weigh and measure accurately (time, dry ingredients, liquids)</li><li>Apply the rules for basic food hygiene and other safe practices <i>e.g. hazards relating to the use of ovens</i></li><li>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li></ul><br><b>Key vocabulary</b><br>Liquids / dry ingredients, Hazards Bacteria and contamination, Seasonality, Nutrition   | healthy, bacteria, knife, recipe, fruit, vegetables, savoury, varied diet, temperature, portions, carbohydrate, protein, liquids / dry ingredients, hazards, bacteria and contamination, seasonality, nutrition | Use a range of tools safely and accurately to create a nutritional product<br><br>Understand variety and seasonality of foods<br><br>Link the importance of hygiene and safety in food production |
| Critique, evaluate and test their ideas and products and the work of others                                     | Evaluating processes and products                                 | Questioning<br><br>Reflection<br><br>Suggesting changes                             | Children will learn to reflect on their learning and think about whether they would change plans and | <ul style="list-style-type: none"><li>Evaluate their product by asking questions about what they have made and how they have gone about it</li><li>Evaluate against their design criteria</li><li>Evaluate their products as they are developed, identifvina strenaths and</li></ul>   | <ul style="list-style-type: none"><li>Evaluate their work both during and at the end of the assignment against original design criteria <i>e.g. how well it meets its intended purpose</i> and by carrying out appropriate tests.</li><li>Disassemble and evaluate familiar products</li></ul>   | <ul style="list-style-type: none"><li>Evaluate their product personally and seek evaluation from others</li><li>Evaluate their products against the original criteria identifying strengths and areas for development, and carrying out appropriate tests</li></ul>   | Evaluate, Success, Strengths Improve, Original, Purpose Strengths / weaknesses Disassemble, Product, Review   | Appreciate the importance of product evaluation against criteria<br><br>Consider how well a product has achieved its intended purpose   |



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| Assessment statement:<br>Evaluate |  |  | improve an idea. | possible changes they might make<br><br><b>Key Vocabulary</b><br>Evaluate, Success, Strengths<br>Improve | <b>Key Vocabulary</b><br>Original, Purpose, Strengths / weaknesses, Disassemble | <ul style="list-style-type: none"><li>Record their evaluations using drawings with labels</li></ul><br><b>Key Vocabulary</b><br>Product Review (self and others)<br>Amendment of product prototype | (self and others),<br>Amendment of product prototype |  |
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