## Subject Area: Design Technology

| KS1 POS | KS2 POS |
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| Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].<br>**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<br>**Make** select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]<br>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics<br>**Evaluate** explore and evaluate a range of existing products<br>evaluate their ideas and products against design criteria<br>**Technical knowledge** build structures, exploring how they can be made stronger, stiffer and more stable<br>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.<br>use the basic principles of a healthy and varied diet to prepare dishes<br>Understand where food comes from. | Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].<br>When designing and making, pupils should be taught to:<br>**Design**<br>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<br>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design<br>**Make**<br>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately<br>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<br>**Evaluate**<br>investigate and analyse a range of existing products<br>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work<br>understand how key events and individuals in design and technology have helped shape the world<br>**Technical knowledge**<br>apply their understanding of how to strengthen, stiffen and reinforce more complex structures<br>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]<br>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]<br>Apply their understanding of computing to program, monitor and control their products |

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **Design**<br><br>Take part in exploring simple products from primary sources, including deconstructing where appropriate.<br>Generate ideas for design from own experiences, reading, class research<br>Use talking and pictures, simple templates.<br>Record in books using simple diagrams appropriate to the year group. | **Design**<br><br>Take part in exploring simple products from primary sources, including deconstructing where appropriate.<br>Generate ideas for design from own experiences, reading, class research<br>Use talking and pictures and labels, templates.<br>Labelled diagrams appropriate to the year group. | **Design**<br><br>Take part in exploring simple products from primary sources, including deconstructing where appropriate.<br>Gather information about requirements of the product.<br>Plan from a design criteria.<br>Research designs.<br>Detailed annotated diagrams showing initial and adaptive stages with appropriate technical vocabulary used. | **Design**<br><br>Take part in exploring simple products from primary sources, including deconstructing where appropriate.<br>Gather information about requirements of the product.<br>Plan from a design criteria.<br>Research designs.<br>Detailed annotated diagrams showing initial and adaptive stages. Include appropriate technical vocabulary. | **Design**<br><br>Take part in exploring simple products from primary sources, including deconstructing where appropriate.<br>Carry out research.<br>Develop design criteria<br>Research designs and specification.<br>Detailed annotated diagrams including measurements and materials used. Showing multiple adaptations and improvements. | **Design**<br><br>Take part in exploring simple products from primary sources, including deconstructing where appropriate.<br>Carry out research.<br>Develop design criteria<br>Research designs and specification.<br>Detailed annotated diagrams including measurements and materials used. Showing multiple adaptations and improvements. |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |

| **Food** | **Food** | **Food** | **Food** | **Food** | **Food** |
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| Develop food vocabulary e.g. taste, smell, texture and feel<br><br>Cut peel, grate, chop<br>Use simple equipment to mix and spread ingredients Prepare food (without a heat source) hygienically.<br><br>Group familiar foods e.g. fruit and vegetables.<br>Use the basic principles of a healthy diet to prepare dishes<br>Salad<br><br>Understand where food comes from. Take part in gardening – growing simple crops. This links with the Science topic.<br>Children will be growing salad vegetables | Understand the need for a varied diet.<br>Understand where food comes from. – **Linked with Science work.**<br>Cut peel, grate, chop<br>Prepare food (without a heat source) hygienically.<br>Know everyone needs five portions of fruit and vegetables each day.<br>Use the basic principles of a healthy diet to prepare dishes.<br>Product<br>Fruit face pancake.<br>Healthy wrap<br><br>Measure and weight food in non-statutory units e.g. cups.<br>Gingerbread product<br><br>Take part in gardening – growing simple crops.<br>Variety of vegetables linked to science and healthy eating topic.<br>Children will be growing beans (Science) + tomatoes and peas. | Analyse taste, texture, smell and appearance.<br><br>Cut peel, grate, chop, mix, stir, grate<br><br>Follow a recipe<br>Weigh and measure ingredients. (in grams)<br>Cost a simple recipe<br><br>.<br><br>Hygienically prepare and cook predominantly savoury dishes.<br><br>Know that a healthy diet is made up of a balance of food and drink e.g. 'Healthy Plate'.( Science)<br>Make Norwegian salad<br><br>Understand how ingredients are grown, caught, reared and processed in UK, Europe and wider world.<br>Fishing – link with Fleetwood. | Analyse taste, texture, smell and appearance – Taste testing of exotic fruit.<br><br>Cut peel, grate, chop, mix, stir, grate<br>Follow a recipe<br>Weigh and measure ingredients (in grams)<br>Cost recipe<br>Make a South American Salsa.<br><br>Know that a healthy diet is made up of a balance of food and drink e.g. 'Healthy Plate'. ( Link PSCHE)Awareness of healthy eating.<br>Tasting exotic fruits link to South America geography work. | Prepare food for a purpose, taste food and take into consideration sensory vocabulary.<br><br>Cut and shape ingredients using appropriate tools<br>Combine food ingredients e.g. rubbing, baking<br><br>Follow more complex recipes<br>Weigh and measure ingredients. (in grams)<br>Cost recipes/ unit.<br>Viking flatbread<br><br>Know that a healthy diet is made up of nutrients, water and fibre.<br>**Link with PSCHE**<br>Show an awareness of a healthy diet.<br>Propagate celery as part of Science work. | Prepare food taking into account properties of ingredients.<br>Hygienically prepare and cook predominantly savoury dishes.<br>Combine food ingredients e.g. rubbing, baking, kneading.<br><br>Weigh and measure using scales. Work out ratios recipes.<br>Weigh and measure ingredients. (in grams)<br>Cost recipes/ unit. – tortillas and cupcakes.<br><br>Understand the need for correct storage.<br><br>Know that a healthy diet is made up of nutrients, water and fibre<br>Explore farming methods/ organic etc. |

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| | | Process of making cheese – link with Stone age.<br>Grow seasonal crops linked to Science topics – tubers (potatoes) & bulbs (onions) | | | |

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **Construction & mechanics**<br><br>Develop technical vocabulary e.g. lever.<br>Follow safety procedures<br>Roll paper to create tubes and curls.<br>Make 3D trees linked to topic. Communal piece.<br>Understand and make simple levers and sliders e.g. moving picture.<br>Sliding pictures – Christopher Columbus and Explores journey.<br>Use simple pop ups.<br>Christmas cards and/or Mother's Day card.<br>Use a hole punch<br>Use split pins.<br>Moveable astronauts.<br>Make structures from a variety of materials.<br>Experiment with wooden bricks.<br>Junk modelling – town hall (group project). | **Construction & mechanics**<br><br>Develop technical vocabulary e.g. axis<br>Follow safety procedures<br>Use wood, dowel and a hacksaw. Make a vehicle with an axel and free running wheels.<br>Product:<br>Design and make a model of an emergency vehicle.<br><br>Create card hinges.<br>Product:<br>Celebration card.<br><br>Explore how to make strong stable structures from a variety of materials.<br>Product<br>Little Pig's house that is difficult for the wolf to blow over. – Other structure. | **Construction & mechanics**<br>Mark and measure wood/ dowelling in cms<br>Use a glue gun<br>Cut slots<br>Cut internal shapes – diagonal dowels for strength.<br>Products :<br>Roman shields and frame for sewing.<br>Research, explore and design and construct aqueduct models.<br>An aqueduct bridge connecting water source to town<br>Use and explore complex pop ups (concertina folds)<br>Product :<br>Easter cards<br>Revisit use of sliders using two movements and more specific measurements.<br>Create a picture to be turned into an animation ( link IT)<br>Incorporate pneumatics into designing and making a moving toy.<br>Product | **Construction & mechanics**<br>Incorporate a bulb or a buzzer into a model/ picture.<br>Product:<br>Working model<br>Incorporate a battery and a motor to create a moving 'robot'.<br>Product<br>Working Scribbler<br><br>Explore a counter-balance lever and best pivot shape to create a shaduf. This involves making prototypes.<br>Product:<br>Shaduf that can lift a weight e.g. 5g<br><br>Explore ways of making structures sturdy by strengthening and reinforcing.<br>Accurately measure in cms and use 'hot glue gun' with supervision.<br>Product<br>Square/ round towers to answer 'Which one is easier to defend?' | **Construction & mechanics**<br><br>Cut strips of wood/ dowel to mm accuracy.<br>Test and explore how cams work.<br>Use a cam to make a mechanism work.<br>Cut slots with greater precision.<br>Use a glue gun with supervision.<br>Product:<br>Pop-up Christmas toy that incorporates a cam. | **Construction & mechanics**<br><br>Use a craft knife and mat safely.<br>Make prototypes and use a variety of materials with increased independence.<br>Explore and adapt designs<br>Product:<br>WW1 trenches.<br><br>Use ICT control with construction kits.<br>Assemble and control models.<br><br>Incorporate pulleys into a design to solve a specific brief.<br>'Squashed tomatoes' products. |

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| | | Monster with moving mouth.<br>Test the strength and durability of structures/products<br>Products:<br>Stone age dwellings/weapons. | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **<u>Textiles</u>**<br>Use printing/ painting techniques on fabric.<br>Use running stitches<br>Decorate fabric with sequins, buttons ribbons using glue.<br>Product:<br>Christmas Stocking<br>Mark out materials using a template.<br>Product:<br>Wool winding picture | **<u>Textiles</u>**<br>Use fabric paints on textiles.<br>Use running and over stitches<br>Decorate fabric with sequins, buttons ribbons etc.<br>Product::<br>Fabric picture.<br>Simple paper weaving<br>Product:<br>Christmas decoration. | **<u>Textiles</u>**<br>Join fabrics using running<br>Stitch.<br>Learn to thread a needle.<br>Add decorations to fabric work by gluing and sewing.<br>Design printing embellishments.<br>Embroidery – and running stitch and/ or chain stitch.<br>Product:<br>Highly decorative wall hanging inspired by work of the designers studied. | **<u>Textiles</u>**<br>To use weaving, embroidery and embellishments.<br>Building upon previously taught skills.<br>Product<br>Woven fabric piece. | **<u>Textiles</u>**<br>Use pattern pieces and a seam allowance<br>Decorate textiles and join components<br>Pin and tack fabric pieces together.<br>Product<br>Phone / purse / pencil case.<br>Use precise cross stitch for decoration.<br>Christmas present tag. | **<u>Textiles</u>**<br>Create designs on fabric using tie-dye/ fabric paint etc.<br>Product<br>Leaver's T-shirt. |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **<u>Evaluate</u>**<br>Evaluate their own designs against a simple | **<u>Evaluate</u>**<br>Evaluate their own designs against a criteria | **<u>Evaluate</u>**<br>Evaluate their own design against a given | **<u>Evaluate</u>**<br>Evaluate their own design against a given | **<u>Evaluate</u>**<br>Evaluate their own design against an agreed | **<u>Evaluate</u>**<br>Evaluate their own design against a given |

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| criteria. This can be scribed by an adult. | and suggest improvements. Say what they like/dislike. | criteria - suggest and make improvements to the original design. Explain why improvements are required and re-evaluate. | criteria – suggest, record and make multiple improvements to the original design. Explain why improvements are required and re-evaluate | criteria – suggest, record and make multiple improvements to the original design. Explain why improvements are required and re-evaluate. Suggest further improvements and seek the views of others in evaluation and further development. | criteria – suggest, record and make multiple improvements to the original design. Explain why improvements are required and re-evaluate. Suggest further improvements and seek the views of others in evaluation and further development. |
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| **Designers/ architects** Consider what an architect does | **Designers/ architects** Sir Christopher Wren. | **Designers/ architects** Cath Kidston and Coco Channel. | **Designers/ architects** William Henry Crossland – architect of Rochdale townhall | **Designers/ architects** Zaha Hadid | **Designers/ architects** Sunga Park |