Subject Area: Design Technology

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| **KS1 POS**  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].  **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** 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** explore and evaluate a range of existing products  evaluate their ideas and products against design criteria  **Technical knowledge** 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.  use the basic principles of a healthy and varied diet to prepare dishes  Understand where food comes from. | | **KS2 POS**  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].  When designing and making, pupils should be taught to:  **Design**  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**  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**  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  **Technical knowledge**  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 | | | |
| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design  Generate ideas for design from own experiences, reading, class research  Use talking and pictures, simple templates.  Record in books using ‘Explored diagrams’ appropriate to the year group. | **Design**  Generate ideas for design from own experiences, reading, class research  Use talking and pictures and labels, templates.  ‘Explored diagrams’ appropriate to the year group. | Design  Gather information and the needs of others  Develop design criteria  Research designs‘  Explored diagrams’ appropriate to the year group.. | Design  Gather information and the needs of others  Develop design criteria  Research designs  ‘Explored diagrams’ appropriate to the year group. | Design  Carry out research. preferences and the needs of others  Develop design criteria  Research designs and specification.  ‘Explored diagrams’ appropriate to the year group. | Design  Carry out research. preferences and the needs of others  Develop design criteria  Research designs and specification.  ‘Explored diagrams’ appropriate to the year group. |
| Food  Develop food vocabulary e.g. taste, smell, texture and feel  Cut peel, grate, chop Use simple equipment to mix and spread ingredients Prepare food (without a heat source) hygienically.  Group familiar foods e.g. fruit and vegetables.  .  Use the basic principles of a healthy diet to prepare dishes  Understand where food comes from.  Take part in gardening – growing simple crops | Food  Understand the need for a varied diet.  Understand where food comes from. – **Linked with Science work.**  Cut peel, grate, chop  Prepare food (without a heat source) hygienically.  Know everyone needs five portions of fruit and vegetables each day.  Use the basic principles of a healthy diet to prepare dishes.  **Product**  **Healthy????**  Measure and weight food in non-statutory units e.g. cups.  Take part in gardening – growing simple crops.  Variety of vegetables linked to science and healthy eating topic.  **Crops: ???** | Food  Analyse taste, texture, smell and appearance  Cut peel, grate, chop, mix, stir, grate  Follow a recipe  Weigh and measure ingredients. (in grams)  Cost a simple recipe  .  Hygienically prepare and cook predominantly savoury dishes.  Know that a healthy diet is made up of a balance of food and drink e.g. ‘Healthy Plate’.  Understand how ingredients are grown, caught, reared and processed in UK, Europe and wider world.  Grow seasonal crops – grow cress in different conditions. | Food  Analyse taste, texture, smell and appearance  Cut peel, grate, chop, mix, stir, grate  Follow a recipe  Weigh and measure ingredients (in grams)  Cost recipes  Hygienically prepare and cook predominantly savoury dishes.  Know that a healthy diet is made up of a balance of food and drink e.g. ‘Healthy Plate’.  Awareness of healthy eating – tasting exotic fruits. | Food  Prepare food for a purpose, taste food and take into consideration sensory vocabulary.  Cut and shape ingredients using appropriate tools Combine food ingredients e.g. rubbing, baking  Follow more complex recipes  Weigh and measure ingredients. (in grams)  Cost recipes/ unit  Hygienically prepare and cook predominantly savoury dishes.  Understand the need for correct storage.  Know that a healthy diet is made up of nutrients, water and fibre  Show an awareness of a healthy diet.  Propagate celery | Food  Prepare food taking into account properties of ingredients  Combine food ingredients e.g. rubbing, baking, kneading  Weigh and measure using scales  Work out ratios recipes.  Weigh and measure ingredients. (in grams)  Cost recipes/ unit  Hygienically prepare and cook predominantly savoury dishes.  Understand the need for correct storage.  Know that a healthy diet is made up of nutrients, water and fibre  Explore farming methods/ organic etc. |
| Construction & mechanics  Develop technical vocabulary e.g. lever.  Follow safety procedures  Mark out materials using a template.  Roll paper to create tubes and curls.  Understand and make simple levers and sliders e.g. moving picture  Use simple pop ups  Use a hole punch  Use split pins.  Make structures from a variety of materials. | **Construction & mechanics**  Develop technical vocabulary e.g. axis  Follow safety procedures  Use wood, dowel and a hacksaw.  Make a vehicle with an axel and free running wheels.  **Product:**  **Design and make a model of an emergency vehicle.**  Create card hinges.  **Product:**  **Celebration card.**  Explore how to make strong stable structures from a variety of materials.  Product  **Little Pig’s house that is difficult for the wolf to blow over.** | Construction & mechanics  Mark and measure wood/ dowelling in cms  Use a glue gun  Cut slots  Cut internal shapes  Use and explore complex pop ups  Create nets | Construction & mechanics  Incorporate a bulb or a buzzer into a model  Make levers  Explore ways of making structures more sturdy by adding diagonals  Use pneumatics, hydraulics | Construction & mechanics  Cut strips of wood/ dowel to mm accuracy.  Build a framework using a range of materials  Use a cam to make a mechanism work  Cut slots  Use a glue gun  Use ICT control programmes. | Construction & mechanics  Use a bradawl to mark holes  Use a hand drill  Cut strips of wood/ dowel to mm accuracy.  Use a craft knife and mat safely.  Use ICT control programmes.  Use gears and pulleys |
| **Textiles**  Use printing/ painting techniques on fabric  Use running stitches  Decorate fabric with sequins, buttons ribbons etc.  Wool winding around simple shapes. | **Textiles**  Use fabric paints on textiles  Use running and over stitches  Decorate fabric with sequins, buttons ribbons etc.  **Product::**  **Fabric picture.**  Simple paper weaving  **Product:**  **Christmas tree picture.** | Textiles  Join fabrics using running  Stitch  Add decorations to fabric work by gluing or sewing | Textiles  Join fabrics using back stitch  Make a prototype e.g. using a J cloth  Explore fastenings e.g. add buttons or loops | Textiles  Use pattern pieces and a seam allowance  Decorate textiles and join components  Pin and tack fabric pieces together.  Investigate tie-dying. | Textiles  Join and decorate fabrics using different stitches  Experiment with embroidery frames.  Experiment with knitting. |
| Evaluate  Take part in deconstructing simple products.  Evaluate their own designs against criteria | **Evaluate**  Take part in deconstructing simple products.  Evaluate their own designs against criteria | Evaluate how well products have been designed, made, material use and construction methods.  How well do they meet a user’s need?  Investigate who designed and made products, when products were designed and can they be recycled/ reused Consider views of others. | Evaluate how well products have been designed, made, material use and construction methods.  How well do they meet a user’s need?  Investigate who designed and made products, when products were designed and can they be recycled/ reused?  Consider views of others | Evaluate how well products have been designed, made, material use and construction methods.  How well do they meet a user’s need?  Investigate who designed and made products, cost of products and sustainability of materials.  Critically evaluate against design criteria | Evaluate how well products have been designed, made, material use and construction methods.  How well do they meet a user’s need? Investigate who designed and made products, cost of products and sustainability of materials.  Critically evaluate against design criteria |
| Consider what an architect does and link this to Rochdale Town Hall. | Designers/ architects  Sir Christopher Wren. | Designers/ architects  Cath Kidson  Apollodous of Damascus | Designers/ architects Bridge – Isambard Kingdom Brunel | Designers/ architects  Michelangelo | Designers/ architects  Famous buildings  Chichen Itza  MacKintosh |