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 productsevaluate their ideas and products against design criteria**Technical knowledge** build structures, exploring how they can be made stronger, stiffer and more stableExplore 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 dishesUnderstand 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 groupsgenerate, 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], accuratelyselect 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 productsevaluate their ideas and products against their own design criteria and consider the views of others to improve their workunderstand 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 structuresunderstand 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 |
| DesignGenerate ideas for design from own experiences, reading, class researchUse 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 researchUse talking and pictures and labels, templates.‘Explored diagrams’ appropriate to the year group. | DesignGather information and the needs of othersDevelop design criteriaResearch designs‘Explored diagrams’ appropriate to the year group.. | DesignGather information and the needs of othersDevelop design criteriaResearch designs‘Explored diagrams’ appropriate to the year group. | DesignCarry out research. preferences and the needs of othersDevelop design criteriaResearch designs and specification.‘Explored diagrams’ appropriate to the year group. | DesignCarry out research. preferences and the needs of othersDevelop design criteriaResearch designs and specification.‘Explored diagrams’ appropriate to the year group. |
| FoodDevelop food vocabulary e.g. taste, smell, texture and feelCut 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 dishesUnderstand where food comes from.Take part in gardening – growing simple crops | FoodUnderstand the need for a varied diet.Understand where food comes from. – **Linked with Science work.**Cut peel, grate, chopPrepare 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: ???** | FoodAnalyse taste, texture, smell and appearanceCut peel, grate, chop, mix, stir, grateFollow a recipeWeigh 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. | FoodAnalyse taste, texture, smell and appearanceCut peel, grate, chop, mix, stir, grateFollow a recipeWeigh and measure ingredients (in grams)Cost recipesHygienically 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. | FoodPrepare 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, bakingFollow more complex recipesWeigh and measure ingredients. (in grams)Cost recipes/ unitHygienically prepare and cook predominantly savoury dishes.Understand the need for correct storage.Know that a healthy diet is made up of nutrients, water and fibreShow an awareness of a healthy diet.Propagate celery | FoodPrepare food taking into account properties of ingredientsCombine food ingredients e.g. rubbing, baking, kneading Weigh and measure using scalesWork out ratios recipes.Weigh and measure ingredients. (in grams)Cost recipes/ unitHygienically prepare and cook predominantly savoury dishes.Understand the need for correct storage.Know that a healthy diet is made up of nutrients, water and fibreExplore farming methods/ organic etc. |
| Construction & mechanicsDevelop technical vocabulary e.g. lever.Follow safety proceduresMark out materials using a template.Roll paper to create tubes and curls.Understand and make simple levers and sliders e.g. moving pictureUse simple pop upsUse a hole punchUse split pins.Make structures from a variety of materials. | **Construction & mechanics**Develop technical vocabulary e.g. axisFollow safety proceduresUse 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 & mechanicsMark and measure wood/ dowelling in cmsUse a glue gunCut slotsCut internal shapesUse and explore complex pop upsCreate nets | Construction & mechanicsIncorporate a bulb or a buzzer into a modelMake leversExplore ways of making structures more sturdy by adding diagonalsUse pneumatics, hydraulics | Construction & mechanicsCut strips of wood/ dowel to mm accuracy.Build a framework using a range of materialsUse a cam to make a mechanism workCut slotsUse a glue gunUse ICT control programmes. | Construction & mechanicsUse a bradawl to mark holesUse a hand drillCut 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 fabricUse running stitchesDecorate fabric with sequins, buttons ribbons etc.Wool winding around simple shapes. | **Textiles**Use fabric paints on textiles Use running and over stitchesDecorate fabric with sequins, buttons ribbons etc. **Product::****Fabric picture.**Simple paper weaving **Product:****Christmas tree picture.** | TextilesJoin fabrics using running StitchAdd decorations to fabric work by gluing or sewing | TextilesJoin fabrics using back stitchMake a prototype e.g. using a J clothExplore fastenings e.g. add buttons or loops | TextilesUse pattern pieces and a seam allowanceDecorate textiles and join componentsPin and tack fabric pieces together.Investigate tie-dying. | TextilesJoin and decorate fabrics using different stitches Experiment with embroidery frames.Experiment with knitting. |
| EvaluateTake 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/ architectsSir Christopher Wren. | Designers/ architects Cath KidsonApollodous of Damascus | Designers/ architectsBridge –Isambard Kingdom Brunel | Designers/ architectsMichelangelo | Designers/ architectsFamous buildingsChichen Itza MacKintosh  |