 Design & Technology: Skills Progression Year Four

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|  | **Autumn** | **Spring** | **Summer 1** | **STEM Week** | **Additional projects** |
| **Year 4** | **How will you store your favourite things?** | **What shape will your pastry be?** | **Will this story surprise you?** | **Does this game stop you from being bored?** |  |
| **BIG task details** | .  The big task is to design and make a container that can hold one or two favourite small items safely and that, from its appearance, reflects the importance and nature of the contents. | The big task is to design and make a new pastry product for a particular group of people. The product will be based on the children’s experience of the traditional jam tart and each child will carry out market research to identify the needs and  preferences of their consumers. | The children will work in small groups, and each group will make a pop-up book that will intrigue, amuse and inform particular readers. The readers may be the children themselves or another identified group. | The big task is to design and make a toy or game that will amuse and intrigue a bed-ridden patient approximately nine years of age and that can be played with on a bed tray. |  |
| **Small tasks** | **Focused practical tasks**  1 Deciding on my treasure  2 Making different boxes from nets  3 Exploring how lids work  4 Exploring ways of organising  5 Exploring surface decoration | **Focused practical tasks**  1 Investigating jam tarts  2 Making traditional jam tarts  3 Finding out consumer preferences  3 Analysing consumer preferences  4 Modelling design ideas  5 Writing the specification | **Focused practical tasks**  1 Investigating pop-up books  2 Exploring the box fold and the mouth fold  3 Exploring the slider and the lift up flap  4 Exploring the rotator and the paper spring  5 Exploring illustration style  6 Writing the specification | **Focused practical tasks**  1 Exploring the situation  2 Exploring existing toys and games  3 Making a square card with a frame  4 Thinking about what if?  5 Thinking about preferences |  |
| **Vocab** | treasure, possessions, **net, cube,** **prism, lid, hinge, sliding, integral, block printing, peel specification,**  inexpensive, precious pyramid, **tab**, stiff, organise, padding, off, label, **illustrate, evaluation**  divider, layer, drawer | **product, packaging, consumer, questionnaire, interrogate, design design specification- evaluation**  **advertisement, data handling, preferences, ideas, modelling,** labelled  ingredients, dietary needs, allergies. **Experimenting, drawings** | **illustrated, fold, crease, slide, flap, tap, push rotate, spring, centre, path of travel, specification,**  score, **mark and pull levers, linkages,** split pins, three-  dimensional, two-dimensional **improvement,** **evaluation,** | safe, convenient, toy, rules, **template, square, preference**  **practical, cost effective, hand/eye skill, right angle, sawing board,**  **game, thinking skill,** chance **cutting mat, hacksaw, strip** |  |
| **Tools** | felt tip pens, rulers, stencils, pencils, scissors,  buttons, clips, fabric paint brushes, PVA glue, glue stick, blocks to produce simple ,fasteners, thin strip, straws, shapes, stapler, paper punch, | mixing bowl, sieve, round paper bladed knife, tablespoon  rolling pins, pastry cutters,  surface for rolling out, tartlet baking trays, cooling racks,  scales, oven gloves, pencils | scissors, rulers, hole punch,work mats, compasses,  or glue sticks, Sellotape/masking, set squares, tape,  felt pens and pencil crayons, point pen for scoring | pencils, junior hacksaws, sawing boards, brushes, safety rulers, scissors,  card, abrasive paper, PVA glue, coloured markers/felt tips,  string, fine line markers |  |
| **Skills: Design, Make , Evaluate** | **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 and prototypes  **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, according to their functional properties and aesthetic qualities  **Evaluate**     evaluate their ideas and products against their own design criteria and consider the views of others to improve their work  **Technical knowledge**   apply their understanding of how to strengthen, stiffen and reinforce more complex structures | **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 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  **Cooking and Nutrition**   understand and apply the principles of a healthy and varied diet   prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques   understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. | **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, pulleys, cams, levers and linkages] | **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 electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] |  |
| **Learning purposes** | t to identify small items that are  precious;  t to develop 3D form from 2D sheet  using nets;  t about different means of producing lids for containers;  t about different means of organising contents in a container;  t to apply surface decoration using  block printing, peel-off/stick-on labels, illustrations and found items;  t to use scissors, safety ruler, staples,  adhesive tape and PVA glue to  construct simple 3D forms from thin  card. | t to examine a common commercial  food product, considering cost,  packaging, ingredients, nutritional  information and sensory appreciation  (e.g. taste, texture, smell, colour) and compare with the home-made version;  t to design and use a simple  questionnaire to gather information  about the needs and preferences of a  particular group of consumers;  t to use ICT to analyse the gathered  information and present their findings;  t to make traditional jam filled pastry tarts by following a recipe;  t to model a variety of design ideas  using Playdough;  t to prepare and bake a new pastry  product which they have designed and to collect consumer responses to it. | t about pop-up books and why they are so popular;  t how different card mechanisms create different sorts of movement;  t about the accurate cutting, scoring, folding and joining techniques needed to produce working, reliable card mechanisms;  t to develop different graphic styles and match these to the needs of different audiences;  t to match card mechanisms to the  movements they want to achieve in their book. | t to develop their designs by thinking about the purpose of the toy and the needs of possible users;  t to mark, measure, cut and join  materials with increasing accuracy;  t to develop their ideas through  modelling with wooden strip, paper,  card and found materials. |  |