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| Year 4 | | |
| KS2 National Curriculum Objectives | | |
| 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 4 Key Skills | | |
| Autumn Term | Spring Term | Summer Term |
| **Design**   * Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas   **Make**   * Making a torch with a working electrical circuit and switch * Using appropriate equipment to cut and attach materials * Assembling a torch according to the design and success criteria   **Evaluate**   * Evaluating electrical products * Testing and evaluating the success of a final product and taking inspiration from the work of peers   **Technical knowledge**   * Learning how electrical items work * Identifying electrical products * Learning what electrical conductors and insulators are * Understanding that a battery contains stored electricity and can be used to power products * Identifying the features of a torch * Understanding how a torch works * Articulating the positives and negatives about different torches | **Design**   * Writing design criteria for a product, articulating decisions made * Designing a personalised Book sleeve   **Make**   * Making and testing a paper template with accuracy and in keeping with the design criteria. * Measuring, marking and cutting fabric using a paper template * Selecting a stitch style to join fabric, working neatly sewing small neat stitches * Incorporating fastening to a design   **Evaluate**   * Testing and evaluating an end product against the original design criteria * Deciding how many of the criteria should be met for the product to be considered successful * Suggesting modifications for improvement   **Technical knowledge**   * Understanding that there are different types of fastenings and what they are * Articulating the benefits and disadvantages of different fastening types | **Design**   * Designing a biscuit within a given budget, drawing upon previous taste testing   **Make**   * Following a baking recipe * Cooking safely, following basic hygiene rules * Adapting a recipe   **Evaluate**   * Evaluating a recipe, considering: taste, smell, texture and appearance * Describing the impact of the budget on the selection of ingredients * Evaluating and comparing a range of products * Suggesting modifications   **Technical knowledge**   * Understanding the impact of the cost and importance of budgeting while planning ingredients for biscuits * Understanding the environmental impact on future product and cost of production |
| Year 4 Curriculum Enrichment Opportunities | | |
| Enterprise Week –  Children involved in making a product to sell at the Christmas Fair. Children will consider Purpose, Product, user. |  |  |
| Year 4 Vocabulary | | |
| Switch, Buzzer, Bulb, Wire, CAD, Prototype | Sew, Stitch, Fastenings, Pattern, Seam Allowance | Ingredients, Recipe, Batch, Scales, Mixture, Adaptation |