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| Year 5 | | |
| 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. | | |
| Autumn Term | Spring Term | Summer Term |
| **Food and Nutrition** | **Textiles** | **Mechanisms** |
| **Design**   * Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients * Writing an amended method for a recipe to incorporate the relevant changes to ingredients * Designing appealing packaging to reflect a recipe   **Make**   * Using equipment safely, including knives, hot pans and hobs * Knowing how to avoid cross contamination * Following a step by step method carefully   **Evaluate**   * Identifying the nutritional differences between different products and recipes * Identifying and describing healthy benefits of food groups   **Technical knowledge**   * Understanding where food comes from * Understanding what constitutes a balanced diet * Learning to adapt a recipe to make it healthier | **Design**   * Record ideas using annotated diagrams. * Devise step by step plans which can be read / followed by someone else. * Use exploded diagrams and cross-sectional diagrams to communicate ideas. * Sketch and model alternative ideas. * Decide which design idea to develop.   **Make**   * Make prototypes. * Develop one idea in depth. * Use researched information to inform decisions. * Select from and use a wide range of tools. * Cut accurately and safely to a marked line. * Use appropriate finishing techniques for the project.   **Evaluate**   * Testing and evaluating an end product and giving point for further improvements   **Technical knowledge**   * Learning to sew blanket stitch to join fabric * Applying blanket stitch so the space between the stitches are even and regular * Threading needles independently | **Design**   * Designing a toy which uses a pneumatic system * Developing design criteria from a design brief * Generating ideas using thumbnail sketches and exploded diagrams * Learning that different types of drawings are used in design to explain ideas clearly   **Make**   * Creating a pneumatic system to create a desired motion * Building secure housing for a pneumatic system * Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy * Selecting materials due to their functional and aesthetic characteristics * Manipulating materials to create different effects by cutting, creasing, folding, weaving   **Evaluate**   * Evaluating the work of others and receiving feedback on own work * Suggesting points for improvement   **Technical knowledge**   * Understanding how pneumatic systems work * Learning that mechanisms are a system of parts that work together to create motion * Understanding that pneumatic systems can be used as part of a mechanism * Learning that pneumatic systems force air over a distance to create movement |
| Year 5 Curriculum Enrichment Opportunities | | |
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| Year 5 Vocabulary | | |
| Research, Weigh, Measure, Prepare, Tools, Recipes | Sew, Needle, Stitch, Thread, Prototype, Fastening | Pneumatic, system, syringes, functionality |