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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
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| 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 |