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| Year 3 |
| 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.
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| Year 3 Key Skills |
| Autumn Term | Spring Term | Summer Term |
| **Structures** | **Food and Nutrition** | **Mechanisms** |
| **Design*** Designing a castle with key features to appeal to a specific person/ purpose
* Drawing and labelling a castle design using 2D shapes, labelling: - the 3D shapes that will create the features - materials need and colours

**Make** * Constructing a range of 3D geometric shapes using nets
* Creating special features for individual designs Making facades from a range of recycled materials

**Evaluation*** Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design
* Suggesting points for modification of the individual designs

**Technical Knowledge** * Identifying features of a castle
* Identifying suitable materials to be selected and used for a castle, considering weight, compression, tension
* Understanding the terminology of strut, tie, span, beam
* Understanding the difference between frame and shell structure
 | **Design*** Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish

**Make** * Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination
* Following the instructions within a recipe

**Evaluation*** Establishing and using design criteria to help test and review dishes
* Describing the benefits of seasonal fruits and vegetables and the impact on the environment
* Suggesting points for improvement when making a seasonal tart

**Technical Knowledge** * Working with cooking equipment safely and hygienically
* Learning that imported foods travel from far away and this can negatively impact the environment
* Learning that vegetables and fruit grow in certain seasons
* Learning that each fruit and vegetable gives us nutritional benefits
* Learning to use, store and clean a knife safely
 | **Design*** Designing a popup book which uses a mixture of structures and mechanisms
* Naming each mechanism, input and output accurately

**Make** * Following a design brief to make a pop up book, neatly and with focus on accuracy
* Making mechanisms and/ or structures using sliders, pivots and folds to produce movement
* Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result

**Evaluation*** Using the views of others to improve designs
* Testing and modifying the outcome, suggesting improvements

**Technical Knowledge** * Knowing that an input is the motion used to start a mechanism
* Knowing that output is the motion that happens as a result of starting the input
* Knowing that mechanisms control movement
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| Year 3 Curriculum Enrichment Opportunities |
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| Year 3 Vocabulary |
| Prototype, Structure, Measure, 2D, 3D, strut, tie, span, beam | Design, Savory, Senses, Ingredients, Products | Pop Up, Lever, Link, V Fold, Annotate, Accuracy |