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|  LONG TERM FORECAST Key Stage 2 Design and Technology 2017-2019  |
|  |  Autumn  | **Spring**  | **Summer**  |
| **Aims**The national curriculum for design and technology aims to ensure that all pupils:* develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
* build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
* critique, evaluate and test their ideas and products and the work of others
* understand and apply the principles of nutrition and learn how to cook.
 | 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.

Cookery 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.
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| **Year 3- Topic**  | **Marble run** | **Pizza Subs** | **Money Bag** |
| Y3 Assessment milestone | Choose suitable techniques to construct products or to repair items.  | Prepare ingredients hygienically using appropriate utensils.  | Select the most appropriate techniques to decorate textiles. |
| **Year 4 Topic**  | **Photo Frame** | **Animals (moving mouths – lever)** | **Smoothies** |
| Y4 Assessment milestone | Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). | Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). | Follow a recipe. |
| **Year 5- Topic**  | **Bridges** | **Bread** | **Liverpool Fashion over the years** |
| Y5 Assessment milestone | Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). | Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. | Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).  |
| **Year 6 Topic**  | **Soup** | **Shelter** | **Moving toys** |
| Y6 Assessment milestone | Create and refine recipes, including ingredients, methods, cooking times and temperatures.  | Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). | Convert rotary motion to linear using cams. |