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| **Design and Technology Programmes of study** **KS1****Design** * design purposeful, functional, appealing products for themselves and other users based on design criteria
* generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

**Make** * select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
* select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

 **Evaluate** * explore and evaluate a range of existing products
* evaluate their ideas and products against design criteria

**Technical knowledge** * build structures, exploring how they can be made stronger, stiffer and more stable
* explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

**Cooking and Nutrition*** use the basic principles of a healthy and varied diet to prepare dishes
* understand where food comes from.
 | **KS2****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.

**Cooking 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 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Designing and evaluating**  | Draw simple labelled diagrams to show an intended outcome.To discuss strengths and weaknesses of their own and others work.**Summer** | Create detailed labelled plans following a given criteriaTo identify how products, fulfil their purposes and give ideas for improvement**Autumn****Spring** | To design products that are fit for purpose, sharing their thoughts and ideas with others.Suggest improvements to be made and give thoughts on how to implement them.**Summer** | To use a number of different sources to inform their design of a product that is fit for purposeTo use evidence from research to inform strengths and weaknesses and how to overcome these. **Summer** | To use sources, labelled diagrams and cross sectional drawing to design products that meet a range of needsTo test and evaluate products against design criteria**Spring** | Create detailed criteria for designs for products that are aimed at specific individuals giving reasons for their choices**Spring****Summer** |
| **Joining**  | Join materials using tape or glue **Summer** | Attach features to a product using the appropriate material (glue, tape)**Autumn** | Join fabrics using a running stitch | Join fabrics using a running stitchTo select the most appropriate method for joining (stitching, gluing etc)**Autumn** | To use a glue gun with close supervision | To use a glue gun with close supervisionJoin materials using the most appropriate method for the materials/purpose**Spring** |
| **Structures** | Build simple 3D structures | Build simple 3D structuresImprove structures by making them stronger, stiffer**Autumn** | Create a framework using diagonal struts to strengthen**Summer** | Build 3D structures showing an understanding of how to strengthen and reinforce**Summer** | Use a range of materials to create a structure for a mechanism**Spring** | Select the most appropriate materials to create a 3D structure, ensuring it is strengthened and reinforced.**Summer** |
| **Mechanisms**  | Use levers and sliders | Use levers and slidersCreate and use levers, sliders, wheels and axels. **Autumn** | Create a use simple gears, pulleys, cams and linkagesCreate and use simple mechanisms within a product**Summer** | Create and use simple mechanisms within a product  | Use cams and gears in their productsSelect, create and use the most appropriate mechanism for a specific purpose.**Spring** | Select, create and use the most appropriate mechanism for a specific purpose.  |
| **Textiles** | Cut out shapes from a variety of fabrics and materials.**Summer** | Use a range of strategies to join different materials together **Summer (Art link)** | To practise using a simple running stitch to join materials together.  | To develop and improve accuracy in joining materials together using a range of strategies including stitchingTo practise using a simple running stitch to join materials together.**Autumn** | Create a 3D product with purpose using a range of stitching techniques (running, cross, back) | Create a 3D product with purpose using a range of stitching techniques (running, cross, back)Combine materials for more useful purposes, identifying and fixing snags and glitches. **Spring** |
| **Cooking and Nutrition**  | To understand where food comes from (field to fork)To identify the different food groupsMeasure and weigh ingredients using non-standard units (spoons, cups)**Autumn** | To identify different relating to their culture To recognise the food groups within a mealCut, peel, grate ingredients to make dishes from different countries. **Spring** | To identify which food is native to the UK and where other foods originateTo explain what a balanced diet is Combine ingredients more accurately using a range of cooking techniquesTo explain some of the process that food goes through to make it more appealing/preserve it etc? To make healthy choices and explain whyMeasure and weigh the appropriate ingredients following a given recipe**Spring** | To explain some of the process that food goes through to make it more appealing/preserve it etc? To make healthy choices and explain whyMeasure and weigh the appropriate ingredients following a given recipe | To identify which foods grow at different times of year and in different climatesDiscuss and evaluate whether a meal is balanced or not Combine food ingredients appropriately (kneading, stirring, whisking etc)  | To identify which foods grow at different times of year and in different climatesDiscuss and evaluate whether a meal is balanced or not Combine food ingredients appropriately (kneading, stirring, whisking etc)To identify how seasonality and current events can affect the production of foodsTo plan how to have a healthy/affordable diet. **Autumn** |