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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. | | | | |
|  | **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 criteria  To 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 purpose  To 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 needs  To 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 stitch  To 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 supervision  Join materials using the most appropriate method for the materials/purpose  **Spring** |
| **Structures** | Build simple 3D structures | Build simple 3D structures  Improve 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 sliders  Create and use levers, sliders, wheels and axels.  **Autumn** | Create a use simple gears, pulleys, cams and linkages  Create and use simple mechanisms within a product  **Summer** | | Create and use simple mechanisms within a product | Use cams and gears in their products  Select, 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 stitching  To 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 groups  Measure and weigh ingredients using non-standard units (spoons, cups)  **Autumn** | To identify different relating to their culture  To recognise the food groups within a meal  Cut, peel, grate ingredients to make dishes from different countries.  **Spring** | To identify which food is native to the UK and where other foods originate  To explain what a balanced diet is  Combine ingredients more accurately using a range of cooking techniques  To explain some of the process that food goes through to make it more appealing/preserve it etc?  To make healthy choices and explain why  Measure 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 why  Measure and weigh the appropriate ingredients following a given recipe | To identify which foods grow at different times of year and in different climates  Discuss 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 climates  Discuss 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 foods  To plan how to have a healthy/affordable diet.  **Autumn** |