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| **Design and Technology Progression of Skills** | | | | | | | |
| **EYFS** | **ELG Creating with Materials**  Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function**.**  **ELG Creating with Materials**  Share their creations, explaining the process they have used.  **ELG Creating with Materials**  Make use of props and materials when role-playing characters in narratives and stories. | | | | **EYFS End Point:**  By the end of Foundation 2, pupils will have safely explored and used a variety of tools, techniques and materials. They will have learnt about how to use and combine media and materials and represented their own thoughts, feelings and ideas through discussions, drawings and models. This will prepare children to readily access the KS1 curriculum. | | |
|  | **Year 1** | **Year 2** | | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **National Curriculum**  **(Design)** | **Pupils should be taught:**   * 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. | | **Pupils should be taught:**   * 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. | | | | |
| **Design** | Create simple designs for a product.  Communicate simple designs through words and pictures. | Use design criteria to design purposeful, practical, appealing products for themselves and other users.  Communicate designs through:   * Discussions * Drawings * Templates | | Analyse existing products to design own practical and functional product.  Pupils study inventors, designers, engineers, chefs and manufacturers who have developed innovative products.  Communicate designs through:   * Annotated sketches * diagrams * mock-ups * basic computer programmes | Pupils study inventors, designers, engineers, chefs and manufacturers who have developed innovative products.  Communicate designs through:   * Annotated sketches * cross-sectional diagrams * basic computer programmes | Pupils study inventors, designers, engineers, chefs and manufacturers who have developed innovative products.  Carry out market research to inform design decisions.  Use knowledge of existing products to design own practical and functional product.  Communicate designs through:   * Exploded diagrams * Annotated sketches * Proto-types * Computer-aided design | Use research gathered from study of inventors/ designers/engineers/chefs/manufacturers to inform own design decisions.  Communicate design ideas through:   * Annotated sketches * Cross-section diagrams * Proto-types * Pattern pieces * Computer-aided design |
| **National Curriculum**  **(Make)** | **Pupils should be taught to:**   * 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. | | **Pupils should be taught to:**   * 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. | | | | |
| **Make** | Select from and use a range of tools and equipment to perform practical tasks e.g cutting, shaping, joining and finishing. | Choose appropriate tools, equipment, techniques and materials from a wide range.  Safely measure, mark out, cut and shape materials and components using a range of tools. | | Safely mark, measure out, cut, assemble and join with some accuracy.  Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them. | Use techniques which require more accuracy to cut, shape, join and finish his/her work eg. Cutting internal shapes, slots in frameworks.  Use techniques which require more accuracy to cut, shape, join and finish his/her work eg. Cutting internal shapes, slots in frameworks.  Use techniques which require more accuracy to cut, shape, join and finish his/her work eg. Cutting internal shapes, slots in frameworks. | Create prototypes to show his/her ideas.  Make careful and precise measurements so that joins, holes and openings are in exactly the right place.  Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. | Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities.  Use technical knowledge accurate skills to problem solve during the making process. |
| **National Curriculum**  **(Evaluate)** | **Pupils should be taught to:**   * Explore and evaluate a range of existing products. * Evaluate their ideas and products against design criteria. | | **Pupils should be taught to:**   * 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. | | | | |
| **Evaluate** | Ask simple questions about existing products and those that he/she has made. | Evaluate and assess existing products and those that he/she has made, using a design specification. | | Investigate and analyse existing products and those he/she made, considering a wide range of factors. | Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user. | Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. | Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products he/she have made. |
| **National Curriculum**  **(Technical Knowledge)** | **Pupils should be taught to:**   * 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. | | **Pupils should be taught to:**   * 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. | | | | |
| **Technical Knowledge** | Build structures, exploring how they can be made stronger, stiffer and more stable.  Use leavers and sliders in a product. | Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable.  Explore and use mechanisms (wheels and axels) | | Strengthen frames using diagonal struts (shell structures)  Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas. | Understand and use electrical systems in products. Understand how mechanical systems such as levers and linkages or systems create movement. | Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable. | Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately.  Apply his/her understanding of computing to program, monitor and control his/her product.  Understand how to use more complex mechanical and electrical systems. |
| **National Curriculum**  **(Food and Nutrition)** | **Pupils should be taught to:**   * Use the basic principles of a healthy and varied diet to prepare dishes. * Understand where food comes from. | | **Pupils should be taught to:**   * 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. | | | | |
| **Food and Nutrition** | Talk about what he/she eats at home and begin to discuss what healthy foods are.  Say where some foods come from and give examples of food that is grown.  Use simple tools with help, to prepare food safely. | Understand the need for a variety of food in a diet.  Understand that all foods have to be farmed, grown or caught.  Use a wider range of cookery techniques to prepare food safely. | | Talk about the different food groups and name food from each group.  Understand that food has to be grown, farmed or caught in Europe and the wider world.  Use a wider variety of ingredients and techniques to prepare and combine ingredients safely. | Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active.  Understand seasonality and the advantages of eating seasonal and locally produced food.  Understand seasonality and the advantages of eating seasonal and locally produced food. Understand seasonality and the advantages of eating seasonal and locally produced food | Understand the main food groups and the different nutrients that are important for health.  Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable / tasty to eat.  Select appropriate ingredients and use a wide range of techniques to combine them. | Confidently plan a series of healthy meals based on the principles of a healthy and varied diet.  Use information on food labels to inform choices.  Research, plan and prepare and cook a savoury dish, applying his/her knowledge of ingredients and his/her technical skills. |
| **Sticky Knowledge**  **(milestones to achieve end of Key Stage End Points)** | Design something using their own ideas  Make a simple plan before making a product  Choose appropriate tools, equipment and resources  Describe how something works  Explain what went well and how to improve  Know how to make their product stronger  Chop / slice fruit and vegetables safely | Think of an idea and plan what to do  Explain choices for tools, equipment and materials  Show different ways of joining materials / resources  Explain what went well and how to improve  Know how to make a model more stable / stronger  Weigh ingredients  Follow a simple recipe | | Show how a product meets the design criteria  Choose materials for suitability and appearance  Follow a step-by-step plan  Select and use appropriate tools and techniques  Accurately measure and cut  Explain how to improve a product  Know how to strengthen a product  Know where food ingredients come from  Can talk about which food it healthy and which is not | Know which tools to use for a task  Know which material is most suitable and why  Evaluate and suggest improvements | Know that market research informs design decisions.  Make prototypes to show design ideas.  Explain how products meet the needs of the intended users.  Know how to use ICT to enhance the quality of a product, where appropriate.  Know about seasonality and the advantages of eating seasonal and locally produced food. | Know that research is used to inform design ideas.  Know how to use technical knowledge and accurate skills to problem solve during the making process.  Know that the viewpoints of others can be used to improve products.  Use knowledge of computing to program, monitor and control a product.  Know how to research, plan, prepare and cook a savoury dish. |
| **End of Key Stage End Points.** | **KS1 End Point:**  By the end of Key Stage 1, pupils will be taught the knowledge, understanding and skills needed to support them through the process of designing and making. Pupils will be taught about design criteria and show that they can design for themselves and an intended user, based on a specification. In KS1, pupils will communicate their thoughts and ideas through discussions, drawings, labels and models. They will safely select and use a range of tools and equipment and have opportunities to evaluate existing products, as well as their own work. | | | **KS2 End Point:**  By the end of KS2, pupils will be taught the knowledge, understanding and skills needed to engage in the design process for a range of relevant contexts. They will learn about great designers and engineers and how they have helped to shape the world in which we live.  Pupils will use research to inform design criteria and design ideas. They will design and make appealing products that are fit for purpose, using a design specification. Pupils will communicate their ideas through discussions, annotated sketches, cross-section drawings, exploded diagrams, prototypes, pattern pieces and computer-aided design. Pupils will safely select and use a wide range of tools and equipment to perform practical tasks and make decisions about materials based on functional properties. | | | |