

Design and Technology Progression of Knowledge and Skills



Concepts	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	- To use own experiences to generate ideas. - To design a product based on a design criteria for an intended user. - To explain their plan through talking and drawings.	- To use existing products and their own experiences to generate ideas. - To design a product with a purpose and for an intended user. - To explain their plan through talking and annotated drawings. - To design models using appropriate information and communication technology. - To test ideas using templates / mock-ups.	- To develop and follow a simple design criteria. - To identify features of their product that will appeal to the target individual / group. - When planning, identify appropriate materials / components that will work both functionally and aesthetically. - To annotate sketches and explore a variety of initial ideas before selecting a final design. - To design for a range of relevant contexts, using knowledge on existing products to help with design. - To explore prototypes. - Where appropriate, begin to use computer-aided design to communicate ideas.	- To develop, follow and discuss a design criterion. - To design products that will appeal to the target individual / group. - When planning, explain appropriate materials / components that will work both functionally and aesthetically. - To annotate sketches and use cross-sectional drawings before selecting a final design. - To design for a range of relevant contexts, using their broad knowledge on a range of existing products to help with design. - To use prototypes to support in finalising a design. - To use computer-aided design to research / communicate ideas.	- To develop and follow a design criteria by using research. - To use research to create a product fit for purpose and aimed for a target individual / group. - To plan a range of ideas and clearly discuss the final design. - To explore the use of annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design to develop and share ideas. - To create prototypes to assist in the design making process. - To explore pattern pieces. - To have an awareness of cost when planning. - To design for a range of relevant contexts, using their broad knowledge on a range of existing products to help with design.	- To use research to inform and develop detailed design criteria. - To consider how to make a products innovative, functional, appealing, fit for purpose and aimed for a target individual / group. - To plan a range of ideas and clearly discuss, explaining why using research gathered, the final design. - To use annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design to develop and share ideas. - To use prototypes and pattern pieces when appropriate. - To consider the availability and costings when planning out designs. - To design for a range of relevant contexts, using their broad knowledge on a range of existing products to help with design.
Make	- To be able to cut materials safely and shape them using techniques such as tearing and folding. - To shape materials using a template. - To decorate materials / textiles. - To combine materials together (e.g. gluing).	- To measure and cut materials safely and join them together using a range of techniques. - To begin to join using a running stitch. - To decorate materials / textiles using a range of techniques. - To explore the use of computer software.	- To cut materials accurately by selecting appropriate equipment. - To begin to measure and mark materials using standard units of measure. - To choose an appropriate joining technique. - To understand seams and join textiles using an appropriate stitching technique.	- To cut materials accurately by selecting appropriate equipment. - To measure and mark to the nearest cm. - To assemble, join and combine materials using a degree of accuracy. - To join textiles using an appropriate sewing technique.	- To cut a range of materials with precision. - To independently take accurate measurements. - To assemble, join and combine materials and components with accuracy. - To being to measure, make a seam allowance, tape, pin, cut shape and join fabric with precision. - To join textiles with a greater variety of stitches. - To begin to use a full range of materials and components, including construction materials kits, textiles and mechanical components within a design. - To refine the finish of a product.	- To cut a range of materials with precision up to 1mm. - To assemble, join and combine materials and components with accuracy. - To demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make products more complex. - To be able to confidently join textiles using stitches such as backstitch, whip stitch and blanket stitch. - To use a full range of materials and components, including construction materials kits, textiles and mechanical components within a design. - To independently identify and refine the finish of a product.
Evaluate	- To explore a range of existing products and share likes and dislikes. - To suggest improvements on own work.	- To explore a range of existing products and record likes and dislikes. - To suggest improvements on own and others work. - To compare own ideas / products against set design criteria.	- To evaluate own ideas / products against a design criteria. - To be introduced to key individuals / events in Design and Technology. - To evaluate existing products.	- To evaluate own ideas / products against a design criteria during and at the end of the project. - To use knowledge on key individuals / events in Design and Technology to influence and generate ideas for design. - To evaluate existing products by disassembling them.	- To set own design criteria. - To evaluate own ideas / products against personally set design criteria throughout the making process (e.g. use of prototypes). - To combine elements from key individuals / events to inspire and evaluate own products. - To seek evaluation from others. - To evaluate both the existing final product and the process used to make it.	- To set own design criteria that has been influenced from a range of key individuals / events / previously made products. - To evaluate the user experience. - To give reasons for choices. - To seek evaluation from others and demonstrate how this feedback has been used.

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Technical Knowledge	- To build a simple structure and discuss how it could be better. - To name a variety of materials / equipment. - To explore and create products using the mechanisms levers and sliders.	- To build a simple structure and evaluate how it could be made stronger, stiffer and more stable. - To understand material properties and how some simple mechanisms / components work. - To explore and create products using the mechanisms wheels and axles.	- To understand materials functional properties and aesthetic qualities. - To understand how to strengthen more complex structures in order to improve a product. - To be introduced to mechanical systems that create movement (e.g. levers). - To understand that mechanical and electrical systems have an input / output.	- To apply understanding of how to strengthen, stiffen and reinforce more complex structures in order to improve a product. - To explain how mechanical systems such as levers / linkages create movement. - To make and represent simple electrical circuits.	- To apply understanding of how to strengthen, stiffen and reinforce more complex structures in order to create a more useful product. - To understand and demonstrate that mechanical and electrical systems have an input, process and output. - To explore how mechanical systems (e.g. cams) create movement and use mechanical systems in their products. - To begin to program a product.	- To apply understanding of how to strengthen, stiffen and reinforce more complex structures in order to create a more useful product. To also explain reasoning why. - To explain how mechanical systems (e.g. cams) create movement and use mechanical systems in their products. - To apply understanding to program, monitor and control a product.
Cooking and Nutrition	- To assemble and cut ingredients safely and hygienically. - To identify basic healthy and unhealthy food. - To understand that food comes from plants or animals. - To understand why we should eat 5 portions of fruit and vegetables.	- To assemble, cut, peel and grate ingredients safely and hygienically. - To begin to measure out ingredients. - To explain where in the world different types of foods originate from. - To name and sort foods into the groups from the Eatwell Guide. - To use knowledge from the Eatwell Guide to create and prepare dishes.	- To follow a simple recipe. - To be able to measure ingredients accurately. - To prepare ingredients using correct utensils safely and hygienically. - To be able to explain and create a healthy diet using the EatWell Guide. - To understand the importance of healthy food and drink to provide energy.	- To assemble and cook ingredients by following a recipe. - To measure in standard units of measure. - To be able to control temperature when cooking (e.g. hob / oven). - To begin to know when, where and how food in the UK and wider are grown (e.g. herbs, strawberries etc.). - To start to understand seasonality.	- To assemble and cook a range of sweet and savoury dishes demonstrating a range of cooking techniques. - To understand the importance of storing and handling ingredients correctly. - To give examples of food that is grown (e.g. potatoes), reared (e.g. cattle) and caught (e.g. fish) in the UK and wider. - To understand substances (e.g. protein) that are needed for health. To think of recipes based on this knowledge.	- To follow, refine and create recipes (e.g. ingredients, cooking times, methods). - To measure accurately and calculate ratios when editing recipes. - To explain examples of food that is grown (e.g. potatoes), reared (e.g. cattle) and caught (e.g. fish) in the UK and wider and to create recipes using these ingredients. - To understand about seasonality and how this can influence recipes.