Design and Technology Long Term Overview

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|  | **Design** | **Make** | **Evaluate** | **Technical Knowledge**  **(Select as appropriate to the focus of the design and technology focuses in the year group)** | **Cooking and Nutrition** |
| Nursery | • Explore - Uses 3D and 2D structures to explore materials and/or to express ideas. • Design – Explores a variety of construction materials independently. • Make – Make simple constructions. • Tools and equipment - Shows increasing control in holding, using and manipulating a range of tools and objects such as hammers. • Safety – Begins to recognise the need to use tools safely. | | | | |
| EYFS | Explore – experiment and build with a range of construction resources, find out about the properties and functions of different construction materials. • Design – talk about ideas, choose resources, tools and techniques with a purpose in mind. • Make – make models using different construction materials, e.g. construction kits, reclaimed materials, experiment with different ways to build, construct and join resources. • Evaluate – talk about what they like/dislike about their models/constructions, say why, and how they would change them. • Tools and equipment – use equipment and tools to build, construct and make simple models and constructions; use tools and equipment linked to food preparation. • Safety – handle and use equipment appropriately and safely | | | | |
| Year 1 | * Use pictures and words to convey what they want to design / make. * Explore ideas by rearranging materials. * Select pictures to help develop ideas. * Use mock-ups e.g. recycled material trial models to try out their ideas. | * Select materials from a limited range. * Explain what they are making. * Name the tools they are using. | * Explore existing products and investigate how they have been made (including teacher-made examples). * Talk about their design as they develop and identify good and bad points. * Say what they like and do not like about items they have made and attempt to say why. | * Start to use technical vocabulary. * Cut out shapes which have been created by drawing round a template. * Join materials in a variety of ways. * Decorate using a variety of techniques. * Know some ways of making structures stronger. * Show how to stiffen some materials. * Know how to make a simple structure more stable. * Attach wheels to a chassis using an axle. * Know some different ways of making things move in a 2-D plane. | * Group familiar food products e.g. fruit and vegetables. * Cut and chop a range of ingredients. * Work safely and hygienically. * Know about the need for a variety of foods in a diet. |
| Year 2 | * Propose more than one idea for their product. * Use ICT to communicate ideas. * Use drawings to record ideas as they are developed. * Add notes to drawings to help explanations. | * Discuss their work as it progresses. * Select and name the tools needed to work the materials. * Explain which materials they are using and why. | * Decide how existing products do / do not achieve their purpose. * Discuss how closely their finished product meets their own design criteria. | * Cut, peel, grate, chop a range of ingredients. * Work safely and hygienically. * Know about the *Eatwell Plate*. * Understand where food comes from. |
| Year 3 | * Develop more than one design or adaptation of an initial design. * Plan a sequence of actions to make a product. * Think ahead about the order of their work and decide upon tools and materials. * Propose realistic suggestions as to how they can achieve their design ideas. | * Select from a range of tools for cutting, shaping, joining and finishing. * Use tools with accuracy. * Select from materials according to their functional properties. * Use appropriate finishing techniques. | * Investigate similar products to the one to be made to give starting points for a design. * Research needs of user. * Decide which design idea to develop. * Consider and explain how the finished product could be improved. * Discuss how well the finished product meets the user’s design criteria. * Investigate key events and individuals in design and technology. | * Use an increasingly appropriate technical vocabulary for tools materials and their properties. * Understand seam allowance. * Prototype a product. * Sew on buttons and make loops. * Strengthen frames with diagonal struts. * Measure and mark square section, strip and dowel accurately to 1cm. * Incorporate a circuit into a model. * Use electrical systems such as switches bulbs and buzzers. * Use ICT to control products. * Use linkages to make movement larger or more varied. | * Follow instructions / recipes. * Join and combine a range of ingredients. * Begin to understand the food groups on the *Eatwell Plate*. |
| Year 4 | * Record the plan by drawing using annotated sketches. * Use prototypes to develop and share ideas. * Consider aesthetic qualities of materials chosen. * Use CAD where appropriate. | * Prepare pattern pieces as templates for their design. * Select from techniques for different parts of the process. | * Draw / sketch existing products in order to analyse and understand how products are made. * Identify the strengths and weaknesses of their design ideas in relation to purpose / user. * Consider and explain how the finished product could be improved. * Investigate key events and individuals in design and technology. | * Use an increasingly appropriate technical vocabulary for tools materials and their properties. * Understand seam allowance. * Prototype a product. * Sew on buttons and make loops. * Strengthen frames with diagonal struts. * Measure and mark square section, strip and dowel accurately to 1cm. * Incorporate a circuit into a model. * Use electrical systems such as switches bulbs and buzzers. * Use ICT to control products. * Use linkages to make movement larger or more varied. | * Make healthy eating choices – use the *Eatwell plate.* * Understand seasonality. * Know where and how ingredients are reared and caught. * Prepare and cook using different cooking techniques. |
| Year 5 | * Record ideas using annotated diagrams. * Use models, kits and drawings to help formulate design ideas. * Sketch and model alternative ideas. * Decide which design idea to develop. | * Develop one idea in depth. * Select from and use a wide range of tools. * Cut accurately and safely to a marked line. * Select from and use a wide range of materials. | * Research and evaluate existing products. * Consider user and purpose. * Consider and explain how the finished product could be improved related to design criteria. * Investigate key events and individuals in design and technology. | * Use the correct vocabulary appropriate to the project. * Join materials using appropriate methods. * Create 3=-D textile products using pattern pieces. * Understand pattern layout with textiles. * Cut strip wood, dowel, square section wood accurately to 1mm. * Build frameworks to support mechanisms. * Stiffen and reinforce complex structures. * Use mechanical systems such as cams, pulleys and gears. * Use electrical systems such as motors and switches. * Program, monitor and control using ICT. | * Join and combine a widening range of ingredients. * Select and prepare foods for a particular purpose. * Know where and how ingredients are grown and processed. |
| Year 6 | * Plan the sequence of work. * Devise step by step plans which can be read / followed by someone else. * Use exploded diagrams and cross-sectional diagrams to communicate ideas. | * Make prototypes. * Use researched information to inform decisions. * Produce detailed lists of ingredients / components / materials and tools. * Refine their product – review and rework / improve. | * Identify the strengths and weaknesses of their design ideas. * Report using correct technical vocabulary. * Discuss how well the finished product meets the design criteria having tested on/discussed outcomes with the user. * Understand how key people have influenced design in a variety of contexts. * Investigate key events and individuals in design and technology. | * Understand and apply the principles of a healthy and varied diet. * Choose ingredients to support healthy eating choices when designing their food products. * Prepare and cook a variety of mostly savoury dishes using a range of cooking techniques. |