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.
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| 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.
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| 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*.
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| 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.
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| 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.
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| 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.
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