DT Non-negotiables

DT skills should be taught through projects
where possible to ensure real world application.

Key DT skills

- Develop creative, technical and practical expertise to problem solve.
- Design and make high quality prototypes and products for a range of users.
- Critique, evaluate and test ideas and products.
- Understand and apply the principles of nutrition.

	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design **Developing, planning and communicating ideas.**	Use criteria to design and make purposeful, functional items. Make pictures of their design saying what they want to make. Critique and redraft the product when necessary.	Design and make purposeful and functional products. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and where appropriate, information and communication technology. Begin to draw on their own	Design and make purposeful, functional and appealing products. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and where appropriate, information and communication technology. Start to	Use research to develop the design of functional and appealing products. With growing confidence generate ideas for an item, considering its purpose. Start to order the main stages of making a product. Identify a purpose and establish	Use research and develop design criteria to design functional and appealing products that are fit for purpose. Start to generate ideas, linking mathematics and science. Confidently make labelled drawings from different views showing specific	Use research and develop design criteria to design innovative, functional and appealing products that are fit for purpose and aimed at particular groups or individuals. Start to generate, develop, model and communicate their ideas through discussions,	Use research and exploration to identify and understand user needs when designing a product. Generate, develop, model and communicate their ideas through discussions, annotated sketches, cross sectional and exploded diagrams, prototypes and

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		experiences to help generate ideas. Begin to understand the development of existing products. What they are for, how they work, materials used. Started to suggest idea and explain what they are going to do.	generate ideas by drawing on their own and other people's experiences. Begin to develop their ideas through discussion, observation, drawing and modelling. Identify a purpose for what they intend to design and make based in the criteria.	criteria for a successful product. Start to understand whether products can be recycled or reused. Record and plan by drawing labeled sketches or writing and discuss this while working. Explain choices of materials and components.	features. Develop clear ideas through planning how to use the materials, equipment and processes. Identify strengths and areas for development for their products.	annotated sketches, cross sectional and exploded diagrams, prototypes and pattern pieces. Confidently apply a range of finishing techniques. With growing confidence select appropriate material, tools and techniques. Start to understand how much products cost to make, how sustainable they are.	pattern pieces. Accurately apply a range of finishing techniques. Plan the order of their learning choosing appropriate tools and techniques. Identify strengths n dares of development in their products and ideas. Know how much products cost to make, how sustainable they are.

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		Learn about inventors, designers, engineers, chefs and manufactures why have developed ground breaking products.					
Make **Working with tools, equipment, materials and components to make quality products.**	Use the correct tools for the job. Know the tools they are using. Use equipment safely.	Select from and use a range of tools and equipment to perform practical tasks. Begin to make their own design using appropriate techniques. Use given tools for a variety of tasks e.g. knife, grater, chopping board, scissors, needles, pins, scissors, templates, glue and tape. Begin to assemble, join and combine materials and components using a variety	Select tools, equipment and materials to perform practical task. Use the correct vocabulary to name and describe them. E.g. spoons, cups, needles, yarn, scissors, saws and drills. Select materials from a wide range of materials and components e.g. Construction materials, textiles and ingredients. Measure, cut and score with some accuracy. Learn to use hand tools safely and	Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredient, mechanical components and electrical components. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Strat to understand that technical systems such as leers and linkages create	Select a wider range of tools and techniques for making their products safely. Know how to mark, measure, cut and shape a range of materials, using appropriate tools equipment and techniques Join and combine a range of materials, some with temporary, fixed or moving components. Know how	Select appropriate materials, tools and techniques e.g. Cutting, shaping, joining and finishing accurately. Begin to select from and use a wider range of materials and components including construction materials, textiles and ingredients taking into account their aesthetic properties. Understand how mechanical systems such as cams, pulleys or gears create	Confidently select appropriate tools, materials and components and techniques and use them. Assemble components to make working models. Aim to make and to achieve a quality. With confidence pin, sew and stitch materials together to create a product. Construct products using permeant joining techniques.

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		of temporary methods e.g. Glues or masking tape. Explore ideas by rearranging materials e.g. paper, card, ingredients, fabrics, sequins, buttons, tubes, dowel, cotton reels, paper, card and moldable materials.	appropriately. Assemble, join and combine materials in order to make a product. Demonstrate how to cut, shape and join fabrics to make simple product. Use basic sewing techniques.	movement. Measure mark out, cut, score and assemble components with more accurately. Start to measure, tape, pin, and cut and join fabric with some accuracy. Think ahead about the order of their work and plan tools and materials needed. E.g. Weighing scales, glue gun, ruler.	mechanical systems such as cams, pulleys or gears create movements. Understand how more complex electrical circuits and components can be used to create functional products. Understand how to reinforce and strengthen a 3D framework. Sew using a range of different stitches to weave and knit. Demonstrate	movements. Understand that mechanical and electrical systems have an input, process and output. Weigh and measure accurately (time, dry ingredients, liquids) Use finishing techniques to strengthen and improve the appearance of products.	Understand how mechanical systems such as cams, pulleys or gears create movements. Know how to reinforce and strengthen a 3D framework. Use finishing techniques to strengthen and improve the appearance of products.

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					how to measure, tape, pin, cut and join fabric with some accuracy.		
Technical knowledge	Build structures using different materials. Begin to make suggestions to make structures stronger and more stable. Begin to explore mechanisms such as levers, wheels and axels.	Build structures and investigate how they can be made more stable. Create models with wheels and axels. Insert paper fasteners for card linkages.	Build structures and investigate how they can be made stronger, stiffer and more stable. Use a range of materials to create models with wheels, axels. Levers of sliders. Investigate temporary, fixed and moving joints.	Create shell or frame structures and make structures more stable. Join and combine materials with temporary, fixed or moving joining. Incorporate a circuit with a bulb or buzzer into a model.	Prototype shell or frame structures. Strengthen frames with diagonal struts. Use lolly sticks/card to make levers and linkages.	Build frameworks using a range of materials e.g. wood, corrugated card, plastic to support mechanisms. Use linkages to make movement larger or more varied. Incorporate motor and a switch into a model.	Build complex frameworks using a range of materials to support mechanisms. Use a CAM to make an up and down mechanism. Control a model using an ICT control programme.

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Evaluate	Say what they like and dislike about products that are already known.

Begin to say how they could improve a product offering own ideas. | Start to evaluate their product by discussing how well it works in relation to the purpose.

Say what they like and do not like about existing products.

Consider and explain how the finished product could be improved. | Evaluate own learning against the design criteria.

Look at a range of existing products, explain what they like/dislike and why.

Talk about their developing designs and identify good points and areas to improve throughout the design process. | Start to evaluate their product against original design criteria.

Begin to dissemble and evaluate familiar products and consider the views of other to improve them.

Evaluate how key events and individuals in design and technology have helped shape the world.

Identify strengths and areas to improve in their own design.

Identify what does and does | Evaluate their products carrying out appropriate tests.

Check their work as it develops and modify approach in light of progress.

Discuss how well their product meets the design criteria and the needs of the user.

Evaluate how key events and individuals in design and technology have helped shape the world. | Start to evaluate their product against original design criteria and by carrying out tests.

Start to evaluate a product against Show a clear understanding of the specification and use this to inform decisions.

Justify decisions about materials and methods of construction.

Evaluate products and use of information sources.

Evaluate how key events and individuals in | Evaluate their products, identifying strengths and areas for development and carrying out appropriate teste.

Record their evaluations using drawing and labels.

Test, evaluate and refine ideas and products against a specification.

Justify decisions made during the design process.

Evaluate products and use of information sources throughout the process and |

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				not work in the product.		design and technology have helped shape the world.

Evaluate how key events and individuals in design and technology have helped shape the world. | use this to inform planning. |
| **Food and nutrition** | | Begin to understand that all food come from plants or animals.

Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught.

Start to understand how to name and sort food into | Understand that all food come from plants or animals.

Know that food has to be farmed, grown elsewhere (e.g. home) or caught.

Know how to name and sort food into the five groups in 'The Eat well plate'. | Start to know that food is grown (such as tomatoes, wheat and potatoes) reared (such as, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.

Understand how to prepare | Understand that food is grown (such as tomatoes, wheat and potatoes) reared (such as, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.

Understand how to prepare | Understand that food is grown (such as tomatoes, wheat and potatoes) reared (such as, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.

Begin to understand that seasons may affect the | Know that food is grown (such as tomatoes, wheat and potatoes) reared (such as, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.

Understand that seasons may affect the food available. Understand |

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		the five groups in 'The Eat well plate'. Begin to understand that everyone should eat at least five portions of fruit and vegetables every day. Know how to prepare simple dishes safely and hygienically without using a heat source, Know how to use techniques such as cutting, peeling and grating.	Know that everyone should eat at least five portions of fruit and vegetables every day. Demonstrate how to prepare simple dishes safely and hygienically without using a heat source. Demonstrate how to use techniques such as cutting, peeling and grating.	and cook a variety of predominantly savory dishes safely and hygienically including, where appropriate the use of a heat source. Begin to understand how to use range of techniques such as peeling, chopping, rating, slicing, mixing, spreading, kneading and baking. Start to understand that healthy diet is made up from a variety and balance of different food and drink, as	and cook a variety of predominantly savory dishes safely and hygienically including, where appropriate the use of a heat source. Know how to use range of techniques such as peeling, chopping, rating, slicing, mixing, spreading, kneading and baking. Know that healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The EAT well	food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how-to prepare and cook a variety of predominantly savory dishes safely and hygienically including, where appropriate, the use of a heat source. Start to understand how to use range of techniques such as peeling, chopping, rating, slicing, mixing,	how food is processed into ingredients that can be eaten or used in cooking. Know how-to prepare and cook a variety of predominantly savory dishes safely and hygienically including, where appropriate, the use of a heat source. Understand how to use range of techniques such as peeling, chopping, rating, slicing, mixing, spreading, kneading and

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				depicted in 'The EAT well plate'.

Begin to now that to be active and healthy, food and drink are needed to provide energy for the body. | plate'.

Know that to be active and healthy, food and drink are needed to provide energy for the body. | spreading, kneading and baking.

Begin to understand that different food and drink contain different substance – nutrients, water and fibre – that are needed for health. | baking.

Know that different food and drink contain different substance – nutrients, water and fibre – that are needed for health. |