DT – progression in knowledge and skills

National curriculum statutory coverage for Key Stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, for example, the home, school, leisure, culture, enterprise, industry and the wider environment. When designing and making, pupils should be taught to:

Design

- 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

Make

- select from and use a wider range of tools and equipment to perform practical tasks, such as 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

Evaluate

- 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

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products, (for example as 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 programme, monitor and control their products.

Cooking and Nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. 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.

Progression of Geographical knowledge and skills

	Design	Make	Evaluate	Technical Knowledge
Year 3	I will show that my design meets a range of requirements. I will put together a step-by-step plan which shows the order and also what equipment and tools I will need. I will be able to describe my design using an accurately labelled sketch and words My design will be achievable to make. I will show that my design meets a range of requirements. I will put together a step-by-step plan which shows the order and also what equipment and tools I will need. I will be able to describe my design using an accurately labelled sketch and words. My design will be achievable to make. I will show that my design meets a range of requirements. I will put together a step-by-step plan which shows the order and also what equipment and tools I will need. I will be able to describe my design using an accurately labelled sketch and words. My design will be achievable to make.	I will use equipment and tools accurately.	I will make changes to make my design even better.	I will select the most appropriate tools and techniques to use for a given task. I will make a product which uses my knowledge of shapes to strengthen my structures. I can use a number of components. I will be able to join textiles of different types in different ways. I will choose textiles both for their appearance and also qualities. I will be able to choose the right ingredients for a product. I will use equipment safely. I will be able to make sure that my product looks attractive. I will describe how my combined ingredients come together.

Year 4	I will consider of the ideas of others when designing. I will be able to produce a plan and explain it to others. I will suggest some improvements and say what was good and not so good about my original design. I will show that my design meets a range of requirements. I will put together a step-by-step plan which shows the order and also what equipment and tools I will need. I will be able to describe my design using an accurately labelled sketch and words. My design will be achievable to make. I can show that my design meets design criteria. I can put together a step-by-step plan which shows the order and also what equipment and tools I need. I can describe my design using an accurately labelled sketch and words. My plan ideas will be achievable to make. I will be able to discuss how my idea will be made. I will consider the ideas of others. I will be able to produce a plan and explain it to others. I will be able to suggest some improvements and say what was good and not so good about my original design.	I will be able to tell if my finished product is going to be good quality. I will be aware of the need to produce something that will be liked by others. I will show a good level of expertise when using a range of tools and equipment. I will use equipment and tools accurately.	I will think about how I will check that my design is successful. I will be able to explain how they I can improve my original design. I will evaluate my product, thinking of both appearance and the way it works. I will make changes to make my design even better.	I will select the most appropriate tools and techniques to use for a given task. I will make a product which uses both electrical and mechanical components. I will use a simple circuit. I can use a number of components. I will measure carefully so as to make sure I have not made mistakes. I will attempt to make my product strong. I will take time to consider how I could have made my idea better. I will work at my product even though my original idea might not have worked. I will select the most appropriate tools and techniques to use for the task. I will try to use a number of components. I will be able to make alternations if needed after checking it. I will be confident about trying out new and different ideas. I will use the most appropriate materials. I will work accurately to make cuts and holes. I know how to join materials. I will measure carefully so as to make sure I have not made mistakes. I will know how to make my product strong. I will take time to consider how I can make my idea better. I will work at my product even though my original idea might not have worked.
Year 5	I can create with a range of ideas after I have collected information. I can consider a user's view into account when designing a product. I can produce a detailed step-by-step plan.	I can explain why my finished product is going to be of good quality.	I will keep checking that my design is the best it can be.	My measurements will be accurate enough to ensure that everything is precise and my design is strong and fit for purpose. I will be able to justify why I have selected specific materials.

	I can think of a range of ideas and take a user's view into account when I am designing. I can produce a detailed step-by-step plan. I can suggest some alternative plans and say what the good points and drawbacks are about each are. I can create with a range of ideas after I have collected information. I can consider a user's view into account when designing a product. I can produce a detailed step-by-step plan. I can suggest some alternative plans and say what the good points and drawbacks are.	I can explain how my product will appeal to the audience. I can use a range of tools and materials precisely.	I will check whether anything could be improved. I will evaluate the appearance and function against the original criteria.	I will describe what I need to do to be both hygienic and safe. I will present my product well.
Year 6	I can use market research to inform my plans. I can they follow and refine my plan if necessary. I can justify my plan to someone else. I can consider culture and society in my designs. I can use market research to inform my plans. I can they follow and refine my plan if necessary. I can justify my plan to someone else. I can consider culture and society in my designs. I can use market research to inform my plans. I can they follow and refine my plan if necessary. I can justify my plan to someone else. I can consider culture and society in my designs.	I can use a range of tools and materials precisely. I can change the way I am working if needed	I will be able to test and evaluate my finished product. I will consider if it is useable and how I could improve it. I will make sure that my product meets all design criteria.	I will consider how my product could be sold. I will consider what would improve my product even more. I will be able to explain how my product should be stored with reasons. I will set out how to grow my own products with a view to making a salad, taking account of time requires to grow different foods. I will be able to explain why I have selected specific materials. I will work within a budget. I will ensure that my work is precise and accurate. I will ensure that I hide joints so as to improve the look if my product.