Design and Technology

Subject Rationale, Intent and Progression

Overview of Design and Technology

Intent:

- Provide opportunities for all the children to design and make quality products.
- Provide children with the opportunity to explore food and cooking techniques along with healthy eating.
- Develop design and making skills, knowledge and understanding to the best of each child's ability; using and selecting a range of tools, materials and components.
- Become creative problem solvers as individuals and members of a team.
- Develop an ability to criticise constructively and evaluate their own products and those of others.

D&T is a foundation subject in the National Curriculum for KS1 and KS2 and is a key skill developed across the Early Years Foundation Stage learning goals. D&T helps to prepare children for the developing world. The subject encourages children to become creative problem solvers, both as individuals and as part of a team. Through the study of design and technology they combine practical skills with an understanding of aesthetic, social and environmental issues. D&T helps all children to become informed consumers and potential innovators. It should assist children in developing a greater awareness and understanding of how everyday products are designed and made.

Overview of Design and Technology

Implementing D&T

D&T can be taught as a discrete whole-class lesson and within its own right but is also taught in smaller groups. Any knowledge, understanding and skills taught within discrete D&T lessons can be applied across the curriculum. D&T excites and enthuses children who enjoy art, craft and design experiences, resulting in a positive impact in all areas of learning and creative thinking.

Pupils learn through a practical approach by exploring existing products which enables their learning to come to life.

Key learning vocabulary is shared and explored with pupils so that they are fluent in demonstrating their learning.

Pupils work independently, in pairs, and in small groups; this enables effective learning discussions to take place and the sharing and modelling of knowledge, understanding and skills.

Children demonstrate their ability in Design and Technology in a variety of different ways. Teachers will assess children's work as they observe them during lessons. On completion of a piece of work, the teacher assesses the work and gives oral and written feedback to inform attainment and promote next steps to ensure progression. Pupils are encouraged to make judgements about how they can improve their own work and participate in peer assessment.

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Values and Impact

British Values are promoted – Children learn how DT has impacted and shaped our nation in technological advances. Through DT we promote all of the British Values of tolerance and respect for the diverse world they live in.

Spiritual development - Pupils have the opportunity to ask meaningful questions to extend their understanding about design technology; use and apply their learning purposefully and creatively, and how DT can be used to explore beliefs and new experiences.

Moral development – Collaborative work in DT develops respect for the abilities of others and a better understanding of themselves. In addition, they develop a respect for the environment, for their own health and safety and that of others.

Social development – children will effectively communicate and collaborate with others during activities, whilst appreciating the diverse views of others.

Cultural development – children learn how DT has influenced the way in which people live, how technology has developed over different periods in history and enables them to recognise and develop an appreciation of the diverse world around them.

Design and Technology: Progression of skills

	Year 1	Year 2	Year 3	Year 4	Year 5
Developing Planning and Communicating Ideas	Draw on their own experience to help generate ideas Suggest ideas and explain what they are going to do Identify a target group for what they intend to design and make Model their ideas in card and paper Develop their design ideas applying findings from their earlier research	Generate ideas by drawing on their own and other people's experiences Develop their design ideas through discussion, observation , drawing and modelling Identify a purpose for what they intend to design and make Identify simple design criteria Make simple drawings and label parts	Generate ideas for an item, considering its purpose and the user/s Identify a purpose and establish criteria for a successful product. Plan the order of their work before starting Explore, develop and communicate design proposals by modelling ideas Make drawings with labels when designing	Generate ideas, considering the purposes for which they are designing Make labelled drawings from different views showing specific features Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail Evaluate products and identify criteria that can be used for their own designs	Generate ideas through brainstorming and identify a purpose for their product Draw up a specification for their design Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail Use results of investigations, information sources, including ICT when developing design ideas

Design and Technology: Progression of skills

	Year 1	Year 2	Year 3	Year 4	Year 5
Working with tools, equipment, materials and components to make quality products (inc-food)	Make their design using appropriate techniques With help measure, mark out, cut and shape a range of materials Use tools eg scissors and a hole punch safely Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape Select and use appropriate fruit and vegetables, processes and tools Use basic food handling, hygienic practices and personal hygiene Use simple finishing techniques to improve the appearance of their product understand where food comes from	Begin to select tools and materials; use vocab' to name and describe them Measure, cut and score with some accuracy Use hand tools safely and appropriately Assemble, join and combine materials in order to make a product Cut, shape and join fabric to make a simple garment. Use basic sewing techniques Follow safe procedures for food safety and hygiene understand where food comes from Choose and use appropriate finishing techniques	Select tools and techniques for making their product Measure, mark out, cut, score and assemble components with more accuracy Work safely and accurately with a range of simple tools Think about their ideas as they make progress and be willing change things if this helps them improve their work Measure, tape or pin, cut and join fabric with some accuracy Demonstrate hygienic food preparation and storage Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT	Select appropriate tools and techniques for making their product Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques Join and combine materials and components accurately in temporary and permanent ways Sew using a range of different stitches, weave and knit Measure, tape or pin, cut and join fabric with some accuracy Use simple graphical communication techniques understand and apply the principles of a healthy and varied diet	Select appropriate materials, tools and techniques Measure and mark out accurately Use skills in using different tools and equipment safely and accurately Weigh and measure accurately (time, dry ingredients, liquids) Apply the rules for basic food hygiene and other safe practices *e.g. hazards relating to the use of ovens* Cut and join with accuracy to ensure a good-quality finish to the product prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

Design and Technology: Progression of skills

	Year 1	Year 2	Year 3	Year 4	Year 5
Evaluating processes and products	Evaluate their product by discussing how well it works in relation to the purpose Evaluate their products as they are developed, identifying strengths and possible changes they might make. Evaluate their product by asking questions about what they have made and how they have gone about it	Evaluate against their design criteria Evaluate their products as they are developed, identifying strengths and possible changes they might make. Talk about their ideas, saying what they like and dislike about them	Evaluate their product against original design criteria e.g. how well it meets its intended purpose Disassemble and evaluate familiar products	Evaluate their work both during and at the end of the assignment Evaluate their products carrying out appropriate tests	Evaluate a product against the original design specification Evaluate it personally and seek evaluation from others

Design and Technology: Progression of skills

	Year 1	Year 2	Year 3	Year 4	Year 5
Technical Knowledge	Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products [for example, 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 program, monitor and control their products.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products [for example, 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 program, monitor and control their products.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products [for example, 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 program, monitor and control their products.