



CHINLEY PRIMARY SCHOOL

DESIGN AND TECHNOLOGY POLICY

INTRODUCTION

Our approach to teaching and learning in Design and Technology (D&T) is to provide children with the opportunity to develop their skills in design, creativity and production of solutions to practical problems. We want the children to experience D&T in mathematics, science, engineering, computing and art amongst other areas.

Pupils should learn to use resources and tools effectively in order that they can apply that understanding to their practical activities.

INTENT:

- To develop our pupils' practical and thinking skills, enabling them to offer possible solutions to practical problems.
- To provide hands-on experience and investigation, where things can be changed and improved.
- To develop pupils' abilities to evaluate past designs and suggest improvements; this should include designs made by themselves, their peers and adult designers.
- To develop pupils ability to select appropriate materials, tools and components and use these with due regard to safety.
- To enable pupils to apply skills, knowledge and understanding from other subjects, where appropriate.

OBJECTIVES

Our objectives in teaching Design and Technology are that all children should be able to:

- Show interest and motivation in designing and making.
- Show knowledge of a variety of materials, tools and components.
- Show an awareness of the need to exercise safe and hygienic practices and to employ these whilst working.
- Creatively apply their knowledge and skills when designing and making.
- Communicate their ideas orally, in writing, drawing and in 3 D models.
- Plan work individually and as a member of a team.
- Evaluate and make appropriate modifications within their designing and making.
- Evaluate the work of others, including those from other times and cultures.
- Understand and apply the principles of nutrition and healthy diets

IMPLEMENTATION

Health and Safety

An important aspect of Design and Technology is the need to develop the children's awareness of the need to work safely and with due regard to the health and safety of themselves and others. Children will be shown how to use equipment correctly and will be given the opportunity to practice skills and techniques under supervision..

The teacher is the final decision maker about safety in his/her classroom. If there is any doubt about how to work safely, or the capacity to provide the necessary level of supervision then the activity should be postponed until advice from the Headteacher has been obtained. If activities are deemed to be dangerous then other alternatives should be sought.

Equal Opportunities

All children at Chinley Primary School have complete access to Design and Technology regardless of age, sex, or ability. Individual tasks should be structured so that all pupils can achieve success whatever their level of ability or special circumstance Pupils will work in a variety of grouping, i.e. individually, in pairs, small groups and large groups.



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APPENDIX 1

PROGRESSION MAP

YEAR GROUP	TOPIC/ACTIVITY	SKILLS LINKED TO THE NATIONAL CURRICULUM	KEY VOCABULARY BY KEY STAGE
Year 1	Product design Diwali lamps Our own sketchbooks Rain gauges Structures 3D shapes using spaghetti and marshmallows Paper mache planets Junk modelling Puppet Making Alien sock puppets equipped for planet conditions Shadow puppets using light and jointing Textile crafts Ojo de dios Zapotec blankets	Design - Design purposeful, functional, appealing products for themselves and other users based on design criteria. Make - Select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping, joining and finishing; - Select from and use a wide range of materials and components, including construction materials, textiles. Evaluate - Explore and evaluate a range of existing products; - Evaluate their ideas, processes and products against design criteria. Technical knowledge - Build structures, exploring how they can be made stronger, stiffer and more stable;	Plan Prepare Design Materials Ideas Use Model Template Turn Wind up Design Draw Sketch Tools Fix Glue Attach Features Brick Wood Stone Cloth Metal Foam Felt Paper Tissue Newspaper Cardboard String Wool Clay Scissors Tape Cut Stick Decorate Change Improve Prefer Useful
Year 2	The Fire of London Design and create a London Street Room on the Broom Design and create a witch's broom Explorers Designing and creating ships	Design - Design purposeful, functional, appealing products for themselves and other users based on design criteria; - Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Make - Select from and use a range of tools and equipment to perform practical tasks such as, cutting, shaping, joining and finishing; - Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Evaluate - Explore and evaluate a range of existing products;	Wood Stone Cloth Metal Foam Felt Paper Tissue Newspaper Cardboard String Wool Clay Scissors Tape Cut Stick Decorate Change Improve Prefer Useful



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		- Evaluate their ideas and products against design criteria using a range of vocabulary. Technical knowledge - Build structures, exploring how they can be made stronger, stiffer and more stable; - Explore and use mechanisms including levers, sliders, wheels and axles, in their products.	Unsuccessful Future Progress Original Finished article Evaluate
Year 3	Cavemen to Celts Design and build a hill fort Create Stone Age feeding bowls/tools Casting fossils The Iron Giant Design a treasure chest Create a spaceship for the Iron Giant Grow Your Own Create a recipe for herb bread and make it Design and create packaging, logo and an advert for your product	Design - Identify the design features of their products that will appeal to intended customers; - Use their knowledge of a broad range of existing products to help generate their ideas; - Design innovative and appealing products that have a clear purpose and are aimed at a specific user; - Explain how particular parts of their products work; - Use annotated sketches and cross-sectional drawings to develop and communicate their ideas. Make - With growing confidence, carefully select from a range of tools and equipment, explaining their choices; - Select from a range of materials and components according to their functional properties and aesthetic qualities; - Place the main stages of making in a systematic order; - Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; - Use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; - With growing independence, measure and mark out to the nearest cm and millimetre; - Cut, shape and score materials with some degree of accuracy; - Assemble, join and combine material and components with some degree of accuracy. Evaluate	Designing Manufacturing Making Evaluating Plan Organise Prototype Initial ideas Criteria Diagrams Labels Annotate Brief Product Consumer Customer Target audience Purpose Client Materials Hand-made Packaging Presentation Dimensions Durable Healthy Unhealthy Healthy eating Hygiene Diet Taste Texture Flavour Disinfect Bacteria Assess Edit Improve Outcome



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		- Explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; - Explore what materials/ingredients products are made from and suggest reasons for this; - Consider their design criteria as they make progress and are willing to alter their plans;; - Evaluate their product against their original design criteria; - Evaluate the key events, including technological developments, and designs of individuals in design. Technical knowledge - Understand that materials have both functional properties and aesthetic qualities; - Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; - Explain how mechanical systems such as levers and linkages create movement.	Develop Analyse Effective Fit for purpose Design criteria Quality Function Functionality
Year 4	Ancient Greeks Design and build a Greek building Christmas Christmas cooking Romans and settlements Design and create a Roman artefact Music/Science Design, make and evaluate a musical instrument Vanishing Rainforest Design, make and evaluate a Fair Trade product MFL – French French café cooking session	Design - Identify the design features of their products that will appeal to intended customers; - Use their knowledge of a broad range of existing products to help generate their ideas; - Design innovative and appealing products that have a clear purpose and are aimed at a specific user; - Explain how particular parts of their products work; - Use annotated sketches and cross-sectional drawings to develop and communicate their ideas; - When designing, explore different initial ideas before coming up with a final design; - When planning, start to explain their choice of materials and components including function and aesthetics; - Test ideas out through using prototypes; - Develop and follow simple design criteria; - Work in a broader range of relevant contexts, for example entertainment, the	



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		home, school, leisure, food industry and the wider environment. Make • Confidently and carefully select from a range of tools and equipment, explaining their choices; • Select from a range of materials and components according to their functional properties and aesthetic qualities; • Place the main stages of making in a systematic order; • Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; • Use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; • Independently, measure and mark out to the nearest cm and millimetre; • Cut, shape and score materials with some degree of accuracy; • Assemble, join and combine material and components with some degree of accuracy. Evaluate • Explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; • Explore what materials/ingredients products are made from and suggest reasons for this; • Consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; • Evaluate their product against their original design criteria; • Evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world. Technical knowledge • Understand that materials have both functional properties and aesthetic qualities; • Apply their understanding of how to	
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		strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; • Understand and demonstrate how mechanical and electrical systems have an input and output process; • Make and represent simple electrical circuits, such as a series and parallel, and components to create functional products; • Explain how mechanical systems such as levers and linkages create movement.	
Year 5	Christmas Craft Design and create Christmas themed crafts. Create and cook savory food Saxons and Vikings Design and create an Anglo Saxon brooch Create illuminated letters Design and build Viking longhouses Earth Design and create a Solar system using sewing Design and create sundials/shadow clocks Create volcanoes Design earthquake proof houses Science Investigate and use pulleys and levers	Design • Use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market; • Use their knowledge of a broad range of existing products to help generate their ideas; • Design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user; • Explain how particular parts of their products work; • Use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; • Generate a range of design ideas and clearly communicate final designs. Make • Independently plan by suggesting what to do next; • With growing confidence, select from a wide range of tools and equipment, explaining their choices; • Select from a range of materials and components according to their functional properties and aesthetic qualities; • Create step-by-step plans as a guide to making; • Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; • Independently take exact measurements	



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		and mark out, to within 1 millimetre; • Use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; • Cut a range of materials with precision and accuracy; • Assemble, join and combine materials and components with accuracy; • Demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; • Join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch. Evaluate • Complete detailed competitor analysis of other products on the market; • Critically evaluate the quality of design, manufacture; • Evaluate their ideas and products against the original design criteria, making changes as needed. Technical knowledge • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; • Understand and demonstrate that mechanical and electrical systems have an input, process and output; • Explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; • Apply their understanding of computing to program, monitor and control a product.	
Year 6	Ancient Egypt: Explore the construction of pyramids using Lego Mummification of a tomato Make papyrus by weaving World War 2 Ration cooking	Design • Use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market; • Use their knowledge of a broad range of existing products to help generate their ideas; • Design products that have a clear purpose	



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	Make do and mend – learning to darn, sew on buttons and rag rug making Create & test the durability of WW2 Anderson shelters School production Construction of scenery and props Lea Green Shelter making	and indicate the design features of their products that will appeal to the intended user; • Explain how particular parts of their products work; • Use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; • Generate a range of design ideas and clearly communicate final designs; Make • Independently plan by suggesting what to do next; • With growing confidence, select from a wide range of tools and equipment, explaining their choices; • Select from a range of materials and components according to their functional properties and aesthetic qualities; • Create step-by-step plans as a guide to making; • Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; • Independently take exact measurements and mark out, to within 1 millimetre; • Use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; • Cut a range of materials with precision and accuracy; • Shape and score materials with precision and accuracy; • Assemble, join and combine materials and components with accuracy; Evaluate • Critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; • Evaluate their ideas and products against the original design criteria, making changes as needed. Technical knowledge • Apply their understanding of how to strengthen, stiffen and reinforce more	
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		complex structures in order to create more useful characteristics of products.	
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Policy reviewed by Peter Lambert and Hannah Daley

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