

DT Intent

DT at Beaminster St Mary's

Design and technology at Beaminster St Mary's is a fun and engaging subject that helps to prepare children for the developing world. The subject encourages children to become inquisitive and 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. Design and technology 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.

At Beaminster St Mary's Primary School, we follow the 'Design, Make, Evaluate' approach to the teaching of DT, as outlined in the National Curriculum Programmes of Study. At the beginning of each project, the children are given opportunities to explore existing products and their components, which helps to inform the design stage of their project. During the design stage, they will devise their own design criteria, be encouraged to draw detailed designs and make prototypes where appropriate. Whilst making their products, staff will guide them through the technical skills they will require, modelling good practice and highlighting safety considerations with the children. Through the evaluation stage, children are encouraged to reflect upon their final products against their original design criteria, considering the views of others and how they could have altered their design or techniques to impact the overall appearance and successfulness of their product.

Curriculum Drivers

	In all subjects...	In DT, this looks like...
Curiosity	We aspire for pupils to embrace challenge with a growth mind-set and show curiosity, independence and resilience in all that they do.	<ul style="list-style-type: none"> Becoming confident when using a range of materials. Having fantastic Design and Technology opportunities on visits. Creating products which are usable and celebrated.
Admiration	We aspire for pupils to become wise, respectful learners	<ul style="list-style-type: none"> Taking part in creative and engaging activities to create a purposeful final product. Developing a growth mind-set and resilience Critical of their own work and that of others, making evaluations, practising their skills in a constant effort to do their best.
Communication	We aspire for pupils to become emotionally mature with a depth of language that enables them to share ideas effectively.	<ul style="list-style-type: none"> Taught specific design and technological vocabulary Learning to talk about their designs and products – evaluating and analysing theories Expressing their thoughts and opinions on their work and the work of others.
Worldly	We aspire for pupils to become emotionally literate, tolerant and appreciative of an ever-changing global environment.	<ul style="list-style-type: none"> Having opportunities to look at designers from all over the world.

Learning knowledge is not an end point in itself, it is a springboard to learning more knowledge. Each unit in our overview is underpinned by rich, substantive knowledge and ambitious vocabulary, whilst also ensuring children are developing their disciplinary knowledge (DT skills). Each unit of work is planned carefully to ensure concepts are taught in optimal order to support children's understanding. As well as developing a breadth of subject knowledge, we want our children to develop subject specific skills. In addition to substantive and disciplinary knowledge, children will develop their experiential knowledge through carefully planned enrichment activities.

	EYFS	Year 1 and Year 2	Year 3 and Year 4	Year 5 and Year 6
Cycle 1	Moving vehicles Designing and building minibeasts	Structures – whose home? Moving Pictures Puppets	Night Lights Aprons Pneumatics – make a mascot	Design and make a bird hide Alarming vehicles Making bread
Cycle 2	Junk modelling	Working with slides and levers Joining and fastening fabrics Packets – banish broken biscuits	Bendy Bags Gears and Pulleys Dips and dippers	Christmas ginger biscuits Mechanisms with a message Willy Wonka’s fair-trade cookies

Substantive Concepts – these are the concepts that give a subject substance or content.

Our curriculum is refined yearly, but it maintains a consistent knowledge base to ensure conceptual progression. We have identified a set of key substantive concepts that children will repeatedly revisit throughout their time at St Mary’s. Our substantive concepts are:

designing	making	evaluating
The initial stage in the creation of a product where ideas are captured through notes and diagrams. Designers often produce several different versions of a design before beginning construction of a prototype.	The stage following design. A step by step process to complete a design. Using identified resources.	The ability to critique a product and suggest how the product has met the design brief and how it might be improved.
technical knowledge		cooking and nutrition
Technical skills refer to the specialized knowledge and expertise needed to accomplish complex actions, tasks, and processes relating to technology.		The key food groups and how these impact on health. The important parts of a balanced diet and which foods contribute toward this.

Second order concepts – Shape the enquiry

responsibility	function	product
working safely, how design can solve problems, choosing the right materials, responsibilities to customers to ensure quality / reliable products, healthy eating, quality ingredients	The purpose of a product that has been designed and made with this in mind.	The end of the design and make process.
innovation	structure	mechanism
The process of design stages including prototypes that evolve based on identified strengths and weaknesses and in response to consumer and customer need.	To know different types of structure and the decisions that are made when designing these, including how they are constructed to be fit for purpose.	Cams, levers, wheels, axles that are applied to different uses to provide movement. Pneumatics may be explored.
aesthetic	cause and consequence	significance
How a product is made attractive to a user or consumer.	identifying how things work, how an action can cause change/movement	significant designers and designs, real world examples of effective and successful products

Progression of Substantive Concepts

EYFS	KS1	LKS2	UKS2
Developing, planning and communicating ideas			
<ul style="list-style-type: none"> Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them 	<ul style="list-style-type: none"> 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 Explore and evaluate a range of existing products 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 Investigate and analyse existing products Use results of investigations, information sources, including ICT when developing design ideas Communicate their ideas through detailed labelled drawings Develop a design specification Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways Plan the order of their work, choosing appropriate materials, tools and techniques Understand how key events and individuals in design technology have heled shape the world
Working with tools, equipment, materials and components to make quality products			
<ul style="list-style-type: none"> Explore, use and refine a variety of artistic effects to express their ideas and feelings. Choose the right resources to carry out their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors. Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Create collaboratively, sharing ideas, resources and skills. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function 	<ul style="list-style-type: none"> Make their design using appropriate techniques With help measure, mark out, cut and shape a range of materials Use tools e.g 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 Use simple finishing techniques to improve the appearance of their product 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 Choose and use appropriate finishing techniques 	<ul style="list-style-type: none"> 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 to change things if this helps them improve their work Measure, tape or pin, cut and join fabric with some accuracy 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 	<ul style="list-style-type: none"> Select appropriate materials, tools and techniques Measure and mark out accurately Use skills in using different tools and equipment safely and accurately Pin, sew and stitch materials together to create a product Cut and join with accuracy to ensure a good-quality finish to the product Select appropriate tools, materials, components and techniques Assemble components to make working models Use tools safely and accurately Construct products using permanent joining techniques Make modifications as they go along Achieve a quality product

Evaluating processes and products			
<ul style="list-style-type: none"> • Explore how things work. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Share their creations, explaining the process they have used. 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Evaluate a product against the original design specification • Evaluate it personally and seek evaluation from others • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways that their product could be improved
Vocabulary			
bumpy cut dislike fix fold glue hard join like press rough shiny smooth snip soft stick use	cutting decorate design finishing folding function gluing idea instructions levers like/dislike material measure mechanism printing product properties shape sliders user assemble axel design criteria evaluate improved join mock-up model product safety stable stiffer stitching strengthen stronger templates textile tool wheel winding mechanism	annotate appeal criteria decision develop diagram equipment force inventor methods model monitor movement paper mâché pneumatic realistic resources shell strengths structures systems textiles adapt batteries bulbs buzzers circuit complete circuit components function improvement intended lights parallel patterns preference prototype reinforce research series sketches successful suitable switch wires	aesthetic annotations appealing back stitch cams components construction cross section designer development generate intended user investigate modelling motors movement pattern piece preferences purpose running stitch seam allowance suitability value algorithms aesthetics computer constraints control cross-sectional debug design specification enterprise exploded diagram functional ground-breaking industry innovative manufacture manufacturer procedures program prototype pulleys sequence sustainability