St Mary's Bentworth CE Primary School
Design and Technology Progression

Our high-quality design and technology curriculum is planned as a journey across the school and, using creativity and imagination, our pupils design and make products within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Our pupils learn how to be resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world.

By the end of Key Stage 1

Through a variety of creative and practical activities, our pupils will have been taught the knowledge, understanding and skills needed to engage in the process of designing and making. They will have worked in a range of relevant contexts, for example, the home and school, gardens, the local community, industry and the wider environment.

Our pupils are taught to:

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, for example, 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 • evaluate their ideas and products against design criteria
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
Cooking and Nutrition	• use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from

By the end of Key Stage 2

Through a variety of creative and practical activities, our pupils will have been taught the knowledge, understanding and skills needed to engage in the process of designing and making. They will have worked in a range of relevant contexts, for example, the home, school, culture, enterprise, industry and the wider environment

Our pupils are 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, for example, 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, 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
Cooking and Nutrition	• 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

'Greater Depth' is achieved through a focus on ACE – tasks enable pupils to Apply, Connect and Explain & Evaluate	
Apply:	When evaluating and designing, pupils can apply skills, knowledge and understanding from their current, and previous, learning independently and in new contexts showing increased awareness, accuracy and detail.
Connect:	When designing and making, pupils can innovate, make clear, strong and appropriate connections between their skills, knowledge and understanding and the new context.
Explain & Evaluate:	Pupils are able to explain and critically evaluate the effectiveness of their products and designs after independently using a variety of taught techniques, tools and materials.

Oak Class: Year R/1

<table>
<tr><td colspan="2">EYFS
The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.</td></tr>
<tr><td><u>Food</u>
Design appealing products for a user; investigating different foods and generate ideas; communicating through talk and drawings.
Use simple utensils and equipment.
Tasting and evaluating user's preference; evaluating ideas and finished products.
Understand where ingredients come from and the basis of a healthy and varied diet.</td><td><u>Structures</u>
Generating design ideas; developing modelling and explaining using talk, mockups and drawings.
Planning making, selecting tools and new and recycled materials; using finishing techniques.
Exploring existing freestanding structures; evaluating their own products.
Know about strengthening structures, stronger, stiffer, more stable.</td></tr>
<tr><td><u>Textiles</u>
Design a functional, appealing product for a chosen user and purpose.
Generate, develop, and communicate ideas.
Use a range of textiles, tools and equipment to perform practical tasks.
Explore and evaluate existing textile products and their own ideas and products.
Exploring finishing techniques by applying decorations using beads, buttons and feathers etc.</td><td><u>Mechanical Systems</u>
Generating, modelling and communicating ideas.
Planning making, selecting tools and using finishing techniques.
Exploring existing products.
Exploring sliders and levers.</td></tr>
</table>

Ash Class: Year 2/3

Food Generate ideas and develop design criteria for an appealing product for a user and purpose. Verbally plan the main stages of a recipe, listing ingredients, utensils and equipment. Select from a range of ingredients to make appropriate food products. Carry out and record evaluations of a variety of ingredients and products. Understand seasonality and the source of different food products.	Structures Generate and develop realistic ideas and design criteria collaboratively and through analysis of existing products. Order the stages of making; selecting tools and using with some accuracy. Investigate and evaluate structures, and construct strong, stiff structures. Test and evaluate own products against design criteria and intended user and purpose
Textiles Generate design criteria for an appealing, functional product for specific users. Select fabrics and fastenings according to their functional characteristics. Test their product against the original criteria and with the intended user. Exploring finishing techniques by attaching appropriate embellishments to enhance fabric work.	Mechanical Systems Generate ideas and simple design criteria. Develop and communicate ideas through drawings and mock-ups. Select a range of tools and equipment and materials to perform practical tasks. Explore wheels and axles and evaluate their ideas and products against original criteria.

Lime Class: Year 4/5

Food Generate ideas and develop design criteria for an appealing product for a user and purpose. Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select from a range of ingredients to make appropriate food products (predominately savoury dishes) Carry out and record evaluations of a variety of ingredients and products. Know a range of appropriate ingredients, and whether they are grown, reared or caught.	Structures Generate and develop realistic ideas and design criteria collaboratively and through analysis of existing products. Order the stages of making; selecting tools and using with some accuracy. Investigate and evaluate structures, and construct strong, stiff structures. Test and evaluate own products against design criteria and intended user and purpose
Textiles Generate design criteria for an appealing, functional product for specific users. Produce annotated sketches, prototypes, final product sketches and pattern pieces. Select fabrics and fastenings according to their functional characteristics. Test their product against the original criteria and with the intended user. Exploring finishing techniques by using applique enhance and add texture.	Mechanical Systems Generate realistic ideas and use annotated sketches and prototypes to develop, model and communicate ideas. Select and use tools with some accuracy to cut, shape and join materials. Investigate and analyse their own and others' products with lever and linkage mechanisms. Understand and use lever and linkages.
Electrical systems Use annotated sketches and cross-sectional to develop and communicate ideas. Formulate a step-by-step plan to making, listing tools, equipment, materials and components. Test and evaluate the system to demonstrate its effectiveness for the intended user and purpose. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Investigate and analyse a range of powered products, and evaluate their own products and design criteria.	

Elder Class: Year 6

Food Generate and explore innovative ideas through research and discussion to develop a design brief. Plan a step-by-step recipe, including a list of ingredients, equipment and utensils, applying the principles of a healthy and varied diet (predominately savoury dishes) Using appropriate utensils and equipment accurately, make, decorate and present a food product for the intended user and purpose. Evaluate a range of relevant products and ingredients and the final product with reference to the design brief and specification. Build on our knowledge of seasonality and the source of different food products.	Structures Research user needs and existing products and develop and model innovative ideas into a design specification. Use tools to accurately measure, mark out, cut, shape and join materials to make frameworks. Use finishing techniques suitable for the product and critically evaluate their products against a range of criteria.
Electrical systems Use annotated sketches, cross-sectional and exploded diagrams to develop and communicate ideas. Formulate a step-by-step plan to making, listing tools, equipment, materials and components. Test and evaluate the system to demonstrate its effectiveness for the intended user and purpose. Understand and use computing to program and control products with electrical systems. Investigate and analyse a range of powered products, including programmed, and evaluate their own products and design criteria.	Mechanical Systems Generate ideas through research and develop and communicate a simple design specification. Select use a range of tools and equipment to make products that that are accurately assembled. Compare the final product to the original design specification and test the quality of the design, manufacture and functionality with the user.