Key Stage 1 Design & Technology Objectives. Pupils should be taught to:	Using creativity and imagination	Design and make products that **solve real and relevant problems** within a variety of contexts	Considering their own and others' needs, wants and value	**Acquire a broad range of subject knowledge** and **draw on disciplines such as mathematics, science, engineering, computing and art**	Learn how to **take risks, becoming 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.**	High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation

Design and technology in our school covers four design areas- textiles, food and nutrition, construction- mechanisms and structures

Pupils will:	Key Stage 1 Statutory Knowledge & Concepts	Statutory Knowledge & Concepts: Food & Nutrition
Design purposeful, functional and appealing products Present and communicate ideas by generating design drawings, models and where appropriate the use of ICT Use a range of tools and materials to complete practical tasks safely Evaluate existing designs as well as their own.	**Design** • **Design a purposeful, functional and appealing product** for themselves and others based on design the criteria given. • **Generate, develop, model and communicate ideas** through talking, drawing, templates, mock-ups and where appropriate ICT. **Make** • **Select from and use a range of tools and equipment** to perform practical tasks (e.g. cutting, shaping, joining & 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** 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, & axles) in their products	**Food & Nutation** • **Use basic principles** of a healthy & varied diet to prepare dishes • **Understand** where food comes from. Develop their knowledge and understanding of where food comes from and how it is produced, Develop their knowledge and understanding of food hygiene Develop their knowledge and understanding of what a healthy balanced diet looks like Design and make healthy and delicious foods which solve real life and relevant problems.

Key Stage 1 Skills

Food	Materials	Textiles	Electronics	Computing	Construction	Mechanics	Designing. Making, Evaluating, Improving	Taking Inspiration
Cut, peel, grate ingredients safely & hygienically Measure/ weigh Assemble/cook healthy ingredients Understand where food comes from	Cut materials safely using tools provided Measure & mark out to nearest cm Demonstrate a range of cutting & shaping techniques: tearing, folding, curling, cutting	Shape using templates Join using running stitch Colour & decorate using a number of techniques: dying, printing, adding sequins	Diagnose faults in battery operated devices such as low battery, water damage, battery terminal damage	Model designs using software such as 2simple	Use materials to practise drilling, screwing, gluing, nailing to make & strengthen products	Create products using levers, wheels, winding mechanisms	Design products that have clear purpose & an intended user Make products, refining the design as work progresses Use software to design Begin to evaluate their ideas & product against design criteria.	Explore objects & designs to identify likes & dislikes of designs Suggest improvements to existing designs Explore how products have been created

Key Stage 2 Design & Technology : Lower KS2 Objectives. Pupils should be taught to:	Using creativity and imagination	Design and make products that **solve real and relevant problems** within a variety of contexts	Considering their own and others' needs, wants and value	**Acquire a broad range of subject knowledge** and **draw on disciplines such as mathematics, science, engineering, computing and art**	Learn how to **take risks, becoming 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.**	High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation

Design and technology in our school covers four design areas- textiles, food and nutrition, construction- mechanisms and structures

Pupils will:	Key Stage 2 Statutory Knowledge & Concepts	Statutory Knowledge & Concepts: Food & Nutrition
Develop the creative, technical and practical expertise needed to perform everyday tasks confidently & to participate successfully in an increasingly technological world. Build & apply a repertoire of knowledge, understanding & skills in order to design & make high quality prototypes and products for a wide range of users. Critique, evaluate & test their ideas & products and the work of others. Design purposeful, functional and appealing products Present and communicate ideas by generating design drawings, models and where appropriate the use of ICT Use a range of tools and materials to complete practical tasks safely Evaluate existing designs as well as their own.	**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** ideas through discussion, annotated sketches, prototypes and computer-aided design. **Make** • **Select from and use a wider range of tools and equipment** to perform practical tasks accurately (e.g. cutting, shaping, joining & finishing). • **Select from and use a wide range of materials and components**, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate** • **Investigate and analyse** a range of existing products. • **Evaluate ideas and products** against 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 an understanding** of how to strengthen, stiffen and reinforce more complex structures. • **Understand and use** electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors). • **Apply an understanding** of computing to programme, monitor and control their products.	**Food & Nutation** • **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. Understand & apply the principles of nutrition and learn how to cook. Develop their knowledge and understanding of where food comes from and how it is produced, Develop their knowledge and understanding of food hygiene Develop their knowledge and understanding of what a healthy balanced diet looks like Design and make healthy and delicious foods which solve real life and relevant problems.

Lower Key Stage 2 Skills

Food	Materials	Textiles	Electronics	Computing	Construction	Mechanics	Designing, Making, Evaluating, Improving	Taking Inspiration
Prepare ingredients hygienically using appropriate utensils Measure ingredients to nearest gram accurately Follow a recipe Assemble/ cook healthy ingredients	Cut materials accurately & safely by selecting appropriate tools Measure & mark out to nearest mm Apply appropriate cutting & shaping techniques that include cuts within the perimeter of the material such as slots or cut outs Select appropriate joining techniques/ resources	Understand need for a seam allowance Join textiles with appropriate stitching Select most appropriate techniques to decorate textiles	Create series & parallel circuits	Control & monitor models using software designed for this purpose	Choose suitable techniques to construct products or to repair them Strengthen materials using suitable techniques	Use scientific knowledge of transference of forces to choose appropriate mechanisms for a product such as levers, winding mechanisms, pulleys & gears	Design with purpose by identify opportunities to design Make products by working efficiently such as by carefully selecting materials Refine work & techniques as work progresses, continually evaluating the product design Use software to design & represent product designs.	Identify some of the great designers in all areas of study to generate ideas for design Improve upon existing designs, giving reasons for choices Disassemble products to understand how they work.

Key Stage 2 Design & Technology : Upper KS2 Objectives. Pupils should be taught to:	Using creativity and imagination	Design and make products that **solve real and relevant problems** within a variety of contexts	Considering their own and others' needs, wants and value	**Acquire a broad range of subject knowledge** and **draw on disciplines such as mathematics, science, engineering, computing and art**	Learn how to **take risks, becoming 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.**	High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation

Design and technology in our school covers four design areas- textiles, food and nutrition, construction- mechanisms and structures

Pupils will:	Key Stage 2 Statutory Knowledge & Concepts	Statutory Knowledge & Concepts: Food & Nutrition
Develop the creative, technical and practical expertise needed to perform everyday tasks confidently & to participate successfully in an increasingly technological world. Build & apply a repertoire of knowledge, understanding & skills in order to design & make high quality prototypes and products for a wide range of users. Crique, evaluate & test their ideas & products and the work of others. Design purposeful, functional and appealing products Present and communicate ideas by generating design drawings, models and where appropriate the use of ICT Use a range of tools and materials to complete practical tasks safely Evaluate existing designs as well as their own.	**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** ideas through discussion, annotated sketches, prototypes and computer-aided design. **Make** • **Select from and use a wider range of tools and equipment** to perform practical tasks accurately (e.g. cutting, shaping, joining & finishing). • **Select from and use a wide range of materials and components**, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate** • **Investigate and analyse** a range of existing products. • **Evaluate ideas and products** against 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 an understanding** of how to strengthen, stiffen and reinforce more complex structures. • **Understand and use** electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors). • **Apply an understanding** of computing to programme, monitor and control their products.	**Food & Nutation** • **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. Understand & apply the principles of nutrition and learn how to cook. Develop their knowledge and understanding of where food comes from and how it is produced, Develop their knowledge and understanding of food hygiene Develop their knowledge and understanding of what a healthy balanced diet looks like Design and make healthy and delicious foods which solve real life and relevant problems.

Upper Key Stage 2 Skills

Food	Materials	Textiles	Electronics	Construction	Mechanics	Designing, Making, Evaluating, Improving	Taking Inspiration
Understand importance of correct storage & handling of ingredients using knowledge of micro-organisms Measure accurately & calculate ratios of ingredients to scale up / down from a recipe Demonstrate a range of baking & cooking techniques Create & refine recipes, incl healthy seasonal ingredients, methods, cooking times & temps Understand how a variety of ingredients are grown, reared, caught & processed Understand & apply principles of a healthy & varied diet	Cut materials with precision & refine the finish with appropriate tools e.g. sanding wood Show understanding of the qualities of materials to choose appropriate tools to cut & shape.	Create objects that employ a seam allowance Join textiles with a combination of stitching techniques e.g. back stitch for seams, running stitch to attach decorations. Use the qualities of materials to create suitable visual & tactile effects in the decoration of textiles e.g. soft decorations for comfort on cushion	Create circuits using electronics kits that employ a number of components **Computing** Write code to control & monitor models or products e.g. Lego Mindstorms	Develop a range of practical skills to create products such as cutting, drilling, screwing, nailing, gluing, filling & sanding.	Convert rotary motion to linear using cams Use innovative combinations of electronics (or computing) & mechanics in product designs	Design with the user in mind, motivated by the service a product will offer Make products through stages of prototypes, making continual refinements Ensure products have a high quality finish, using art skills where appropriate. Use prototypes, cross section diagrams & computer aided designs to represent designs	Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices Create innovative designs that improve upon existing products Evaluate the design of products so as to suggest improvements to the user experience.