HORNCASTLE PRIMARY SCHOOL
Subject Progression – Design and Technology

Purpose and Aims	In Design and Technology (DT), children use creativity and imagination to design and make products that solve real and relevant problems. This is carried out within a variety of contexts and children consider their own and others' needs wants and values. Subject disciplines such as maths, science, engineering, computing and art are often drawn upon. Children learn how to take risks and become resourceful, innovative, enterprising and capable citizens. Through evaluation of past and present DT, children develop a critical understanding of its impact on daily life and the wider world. The DT curriculum aims to ensure children develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. Children also build and acquire a repertoire of knowledge, understanding and skills in order to design and make high quality prototypes and products for a wide range of users. Finally they critique, evaluate and test their ideas and products and the work of others. One aspect of the DT curriculum fundamental to children's everyday life and future is the ability to understand and apply the principles of nutrition and learn how to cook.
EYFS	From birth, children will be encouraged to be as creative as possible, with them being encouraged to have attitudes of curiosity and questioning. From an early age, children begin to notice everything and this will be explored through their senses, with children experimenting and investigating textures and sound of new materials and objects in a variety of ways. Building on children's interests can lead to them having the confidence to choose and use materials and resources in an open-ended way resulting in different interpretations of how they see the world we live in. During Foundation Stage, design and technology is taught through the areas of learning 'Expressive Arts and Design' and 'Being Imaginative'. Whilst in Foundation Stage, children will develop their imaginative thinking and begin to talk about how things work. Children will have opportunities, during child initiated learning, to experiment with different media and materials, finding out their properties and then beginning to modify and manipulate them. Children will move from experimenting to then constructing with a purpose in mind. They will begin to use simple tools and techniques and will select the resources they need, asking for help if needed. They will then use different methods to assemble their model and join pieces together using a variety of techniques that they have learnt including using sticky tape, split pins and treasury tags. Children will be encouraged to think about the safety of using different tools such as scissors, and taught how to transport these tools correctly within the classroom. During adult-led discussions, the child will begin to talk about what they are making and why. They will discuss any changes they would like to make and how they can make it better. Children will also experiment with textures and colours, with children beginning to select colours for a particular purpose and exploring ways in which they can make those colours if they are not available to use. By the end of EYFS, most children will be able to: - Handle equipment and tools effectively, including pencils for writing - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function - Use what they have learnt about media and materials in original ways, thinking about uses and purposes - Represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Focus Areas	**Construction** **Materials** **Food & Nutrition**	**Textiles** **Mechanics** **Construction** **Food & Nutrition**	**Textiles** **Construction** **Materials** **Food & Nutrition**	**Electricals & Electronics** **Mechanics** **Computing** **Construction** **Food & Nutrition**	**Textiles** **Construction** **Materials** **Food & Nutrition**	**Electricals & Electronics** **Mechanics** **Computing** **Construction** **Food & Nutrition**
Master Practical Skills	Cut materials safely using tools provided. Measure and mark out to the nearest centimetre. Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). Build structures, exploring how they can be made stronger, stiffer and more stable. Create products using levers, wheels and winding mechanisms	Shape textiles using templates. Join textiles using running stitch. Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). Create products using levers, wheels and winding mechanisms. Model designs using software. Cut materials safely using tools provided. Measure and mark out to the nearest centimetre. Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).	Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest millimetre. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Select appropriate joining techniques. Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. Choose suitable techniques to construct products or to repair items. Strengthen materials using suitable techniques. Choose from a wider range of materials and tools.	Use electrical and mechanical systems in their products. Control and monitor models using software designed for this purpose. Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest millimetre. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Select appropriate joining techniques. Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. Choose suitable techniques to construct products or to repair items. Strengthen materials using suitable techniques.	Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding). Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). Choose from a wider range of materials and tools.	Use electrical and mechanical systems in their products. Convert rotary motion to linear using cams. Use innovative combinations of electronics (or computing) and mechanics in product designs. Write code to control and monitor models or products. Choose from a wider range of materials and tools. Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding). Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).

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Cooking & Nutrition	Cut, peel or grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales. Assemble or cook ingredients. Understand where food comes from.	Cut, peel or grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales. Assemble or cook ingredients. Understand where food comes from.	Prepare ingredients hygienically using appropriate utensils. Measure ingredients to the nearest gram accurately. Follow a recipe. Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). Understand seasonality.	Prepare ingredients hygienically using appropriate utensils. Measure ingredients to the nearest gram accurately. Follow a recipe. Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). .	Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Demonstrate a range of baking and cooking techniques. Create and refine recipes, including ingredients, methods, cooking times and temperatures. Understand seasonality.	Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Demonstrate a range of baking and cooking techniques. Create and refine recipes, including ingredients, methods, cooking times and temperatures. .
Inspiration From Design	Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs. Explore how products have been created.	Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs. Explore how products have been created.	Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work. Use research to improve design.	Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work. Use research to improve design.	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. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	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. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
Design, Make, Evaluate & Improve	Design products that have a clear purpose and an intended user. Make products, refining the design as work progresses. Generate, develop and communicate ideas through talking drawing and mock-ups. Use software to design. To evaluate and improve.	Design products that have a clear purpose and an intended user. Make products, refining the design as work progresses. Generate, develop and communicate ideas through talking drawing and mock-ups. Use software to design. To evaluate and improve.	Design with purpose by identifying opportunities to design. Make products by working efficiently (such as by carefully selecting materials). Refine work and techniques as work progresses, continually evaluating the product design. Use software to design and represent product designs. Evaluate their ideas and products against their own design criteria .	Design with purpose by identifying opportunities to design. Make products by working efficiently (such as by carefully selecting materials). Refine work and techniques as work progresses, continually evaluating the product design. Use software to design and represent product designs. Evaluate their ideas and products against their own design criteria. Investigate and analyse a range of products.	Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Make products through stages of prototypes, making continual refinements. Ensure products have a high quality finish, using art skills where appropriate. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. .	Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Make products through stages of prototypes, making continual refinements. Ensure products have a high quality finish, using art skills where appropriate. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Investigate and analyse a range of products.