Design and Technology Curriculum Overview

Curriculum Intent
Our Design and Technology curriculum prepares children to deal with tomorrow's rapidly changing world. It encourages children to become independent, creative problem solvers and thinkers as individuals and working alongside others. It enables them to identify needs and opportunities and to respond to them by developing a range of ideas and by designing and making products. It gives children the opportunity to evaluate products against the design brief, taking on board the views of others to improve their work which enables children to understand that products are in a continual state of improvement and refinement. Through the study of Design and Technology, the children combine practical skills with an understanding of aesthetic, social and environmental issues. This allows them to reflect on and evaluate past and present technology, it's uses and impacts.

Substantive Concepts		
Design	**Make**	**Evaluate**
Children will develop an understanding that design is a process of envisioning and planning a final product that meets a design brief. The design brief will be focused on a clear aim that meets the need of a person or people.	Children will develop a range of technical knowledge specific to each unit. This will enable them to use a range of tools and work with a wide range of materials. This breadth of knowledge and skills development enables children to feel confident tackling a variety of challenges to follow their design and make a final product that meets their design brief.	Children will develop their evaluative skills throughout the design and making process.They will be able to make judgments about how effective their design/product is at meeting the design brief and how they would make changes to further improve the final product.

Design and Technology Skills Progression

	Design	Make (Technical Knowledge)					Evaluate
		Food	Structures	Textiles	Mechanisms and Mechanical Systems	Electrical Systems	
EYFS	- Develop their own ideas and then decide which materials to use. - Return to and build on their previous learning, refining ideas and developing their ability to represent them.	- Cooking - combining different ingredients, and then cooling or heating.	- Make imaginative and complex small worlds with blocks and construction kits.		- Explore mechanical equipment by playing with and investigating e.g. wind-up toys, pulleys, set of cogs with pegs and boards.		-Discuss how the product was made. - Talk about what they liked in creating their product.
Y 1	- Have own ideas. - Explain what I want to create - Explain how my design will work. - Follow a simple design brief - Research similar existing products.	**Unit – Linked to topic** - Check LGP! Are you teaching food in Primary DT progression framework document) - Use LGP! Food skills PowerPoint for health and safety and correct techniques.		**Unit – Three bears picnic blanket** - Use premade simple shape textile templates. - With support, be able to thread a needle with a large eye. - Demonstrate the ability to join textiles with various methods (such as glue, staple, running stick, cross stitch) - Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	**Unit – working with wheels and axles** - Understand the need for an axle to create a rotary movement. - Explore different shaped wheels and the effects it has. - Demonstrate ability to fix wheels and axles together to ensure movement is able. - Using knowledge to create an effective product using wheels and axles. - Discuss appropriate materials.		- Talk about the product, linking it to what was in the design brief. - Begin to talk about what could make the product better.
Y 2	- Have own ideas and plan a process for your design. - Explain the purpose of a product.	**Unit – Linked to topic** - Check LGP! Are you teaching food in Primary DT progression framework document)	**Unit – Chairs for bears** - Cut materials safely using tools provided - Measure and mark the nearest cm. - Demonstrate a range	**Unit – Puppets** - Use simple shape textile templates to shape own textile. - Be able to thread a need with a large eye.			- Describe what went well, thinking about the design brief. - Express personal opinion on own and peers' product.

	- Describe a design using pictures, words, models and diagrams. - Design products for the needs of the user following a design brief. - Plan the use of the best tools and materials, and explain choices. - Use knowledge of existing products to produce ideas.	- Use LGP! Food skills PowerPoint for health and safety and correct techniques.	of cutting and shaping techniques (such as tearing, cutting, folding) - Demonstrate a range of joining techniques (such as gluing, hinges or combining materials) - Use materials to practice drilling, screwing, gluing and nailing materials.	- Demonstrate the ability to use stitch joins on textiles with increasing accuracy and finish. - Colour and decorate textiles using stitches to add details (such as buttons).			- Talk about what I would do differently if I were to do it again and why. - Begin to evaluate through the process of creating a product informed by research and focus practical tasks.
Y 3	- Describe the purpose of a product that follows a given design brief and criteria. - Show how the design meet the design - Have at least one possible idea about how to create a product - Create a plan which shows order, equipment and tools. - Describe design using an accurately labelled sketch and words. - Make appropriate design decisions	**<u>Unit – Linked to topic</u>** - Check LGP! Are you teaching food in Primary DT progression framework document) - Use LGP! Food skills PowerPoint for health and safety and correct techniques.	**<u>Unit – Banish broken biscuits</u>** -Cut materials accurately and safely by selecting the appropriate tools. - Measure and mark out to the nearest mm. - Use the appropriate cutting and shaping technique for the material. - Select and use appropriate joining techniques. - Strengthen materials using suitable techniques.		**<u>Unit – Moving history book</u>** - Use increasing accuracy of cutting and shaping using appropriate tools. - Choose appropriate materials. - Explore different mechanism to allow movement (such as, pulleys, sliders or levers) - Use knowledge or mechanisms to diagnose faults.		- Evaluate design following knowledge gained from focus practical tasks. - Use the design brief to evaluate finished product. - Discuss what you would change to make the design and product better.
Y 4	- Use research to inform design ideas. - Show design meets a range of requirements and is fit for purpose. - have at least than one possible ideas about	**<u>Unit – Linked to topic</u>** - Check LGP! Are you teaching food in Primary DT progression framework document) - Use LGP! Food skills PowerPoint for health		**<u>Unit – Bendy Bags</u>** - Be able to thread a needle with a medium to small eye. - Understand the need for seam allowance when using stitch joins		**<u>Unit – Developing handmade switches</u>** - Create series and parallel circuits safely. - Demonstrate knowledge of different materials that can be	- Continual referral to design brief when designing and making products. - Use the design brief to evaluate the product in more detail.

	how to create a product and suggest improvements - Explain a design to others. - Explain how realistic a plan is. - Include an annotated sketch of the design. - Make and explain design decisions considering availability of resources. - Explain how a product will work.	and safety and correct techniques.		on textiles. - Join textiles with appropriate stitching (such as running stitch, back stitch or cross stitch). - Select the appropriate technique to decorate textiles.		used in the circuit. - Diagnose faults in the system by carrying out tests.	- Explain how the original design could be improved.
Y 5	- Use questionnaires for research and design ideas. - Begin to consider the needs/wants of individuals/groups when designing and ensuring a product is fit for purpose. - Have a range of ideas. - Produce a logical, realistic plan and explain it to others - Use cross sectional planning and annotated sketches . - Clearly explain how parts of a product will work.	**Unit – Linked to topic** - Check LGP! Are you teaching food in Primary DT progression framework document) - Use LGP! Food skills PowerPoint for health and safety and correct techniques.	**Unit – Bird hides** - Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting and being more precise when cutting out a shape with scissors. - Show a deeper understanding of the materials and which tools may be required for cutting and shaping (such as fabric may need sharper scissors than paper) - Use a range of practical skills to create product (such as cutting , drilling, screwing, nailing, gluing, filing and sanding).	**Unit – Designer bags** - Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decorations). - Use the qualities of materials to create visual and tactile effects in the decorations (such as soft decorations for comfort). - Use precision in creation of the design to ensure a high level finish.			- Evaluate quality of design throughout the designing and making process. - Test and evaluate products with peers. - Detailed explanation of how the product meets the design brief. - Describe a future design for the product with improvements from the test and evaluate process.

Y 6	- Draw on market research to inform design. - Identify features of a design that will appeal to the intended user. - Follow and refine a logical plan. - Use annotated sketches and cross-sectional planning. - Make design decisions considering resources and cost. - Clearly explain how parts of a design will work and how they are fit for purpose.	**Unit – Linked to topic** - Check LGP! Are you teaching food in Primary DT progression framework document) - Use LGP! Food skills PowerPoint for health and safety and correct techniques.			**Unit – Fair ground** - Appropriately choose a mechanism for different movement required in the product (such as levers, winding mechanisms, pulleys and gears). - Ensure high level finish when product is completed and decorating effectively. - Use knowledge to diagnose faults in the mechanism if one arises.	**Unit – Alarming vehicles** - Create circuits using a wide range of electronic components (such as LEDs, various switches or sensors).	- Evaluate quality of design while designing and making; is it fit for purpose? - Continually check that the design is meeting the design brief. - Evaluate ideas and finished product against design brief, stating if it is fit for purpose. - Test and evaluate final product; explain what would improve it and the effect of different resources may have had. - Evaluate how much products cost to make and how innovative they are. - Consider the impact of products beyond their intended purpose.