

CURRICULUM SUBJECT OVERVIEW – DESIGN AND TECHNOLOGY



‘Design and technology should be the subject where mathematical brainboxes and science whizzkids turn their ideas into useful products.’ - James Dyson

‘Through Faith, Friendship and Fun we Learn and Grow’

At Defford, Design and Technology transform the subject into a purposeful journey of creation and character development. **Faith** is reflected through stewardship and sustainable design, encouraging pupils to consider the environmental impact of their work and their responsibility to care for the world’s resources. **Friendship** is nurtured through the collaborative nature of the design process, where children share tools, provide peer evaluations, and work in teams to solve structural challenges. The subject remains rooted in **Fun** by allowing pupils to bring their own imaginative ideas to life through tactile experimentation with wood, textiles, and food. As they **Learn** technical skills—from joining materials to understanding mechanisms—they also **Grow** in practical independence and resilience, discovering that a "failed" prototype is simply a valuable opportunity to refine their thinking and engineer a better solution.

Spirituality

In Design and Technology, spirituality is promoted by encouraging children to look beyond functional mechanics toward a deeper sense of awe and wonder at the ingenuity of human and natural design. It provides a unique space for creative expression where pupils connect their inner thoughts to the tangible world, fostering a sense of fulfilment through "mindful making." This spiritual development is further enriched through reflection, often called "mirror moments," where students consider the ethical impact of their products and their role as stewards of the environment by choosing sustainable materials. Ultimately, the process of overcoming design challenges and learning from failed prototypes builds a resilient spirit and a growth mindset, helping children recognize their own potential to positively transform the world around them.

Intent	Implementation	Impact
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At Defford School, we intend Design and Technology to be creative and practical. The curriculum provides children with the opportunity to problem solve and develop their own creative ideas as individuals and as part of a team. We aim to provide our children with the opportunity to use their imagination to design, use tools safely and make products within a variety of contexts, to provide motivation and meaning to their learning. Evaluating and 'having a voice' is a fundamental part of the design process which is embedded throughout. Before designing and making a product, children evaluate existing products and evaluate their own at the end, allowing children to adapt and improve their product, a key skill which they will need throughout their life. Children will be taught a range of topics including; mechanisms, textiles, food technology, structures, and electrical systems. Our Design and Technology curriculum allows children to apply knowledge and skills learned in other subjects, particularly Maths, Science, Art and History, which we aim to link, wherever possible. At Defford, through hands-on, practical experiences, we aim for children to leave Year 6 with good knowledge and skills of DT which will inspire children to be chefs, engineers, sculptures, carpenters, designers and architects. We recognise the important role of DT in preparing our children with skills for life which will enable them to reach their full potential. The intent of our food technology curriculum is to apply the principles of nutrition and healthy eating, instilling a love of cooking in all children. Learning how to cook is a crucial life skill for children now and in later life. Throughout their time at Defford, we aim to encourage independent learning through practical participation.	Children in the Early Years are encouraged to explore and use a range of media and materials whilst also developing their creativity, imagination and critical thinking. This the foundation on which learning is developed throughout the school. Children in Early Years engage with Design & Technology activities throughout the areas of provision. Children are encouraged to safely use and explore a variety of materials, tools and techniques. They are also encouraged to experiment with colour, texture, design and function. Some of the provision includes clay, playdough, woodwork, junk modelling and painting. In Key stage 1 & 2 the teaching of Design and Technology is adapted using the Twinkl schema which offers termly units for children to engage in. Our Design and Technology Curriculum is high quality, well thought out and is planned to demonstrate progression year on year, giving pupils the skills, knowledge and vocabulary that they need to move forward in their learning. Children are given opportunities to apply their knowledge to different situations. The teaching of DT follows the design, make and evaluate cycle. The design process is rooted in real life, relevant contexts to give meaning to learning. While making, children are given choice and a range of tools to choose freely from. When evaluating, children evaluate existing products and evaluate their own products against a design criteria at the end of the process; using this to adapt and improve their product. A rolling programme of planning is used over a two year cycle to cater for our mixed age classes. When planning, teaching staff ensure that the outcome for each year group is pedagogically appropriate, taking all of the above into consideration.	The impact of Design and Technology at Defford School is that children become creative, confident and resilient learners who are able to apply their knowledge and skills to real-life situations. Through engaging, practical experiences, pupils develop the ability to design, make, evaluate and refine products, understanding that improvement and adaptation are an important part of any successful process. As children progress through the school, they build a secure foundation of technical knowledge and vocabulary across a range of areas including mechanisms, structures, textiles, food technology and electrical systems. They develop increasing independence in selecting appropriate materials, tools and techniques, while learning to work safely and responsibly. Pupils demonstrate strong problem-solving, critical thinking and teamwork skills, enabling them to collaborate effectively whilst also valuing and expressing their own ideas. Through regular opportunities to evaluate existing products and their own work, children develop the confidence to reflect on their learning, respond to feedback and make informed improvements. The curriculum enables children to make meaningful links between Design and Technology and other subjects, particularly Mathematics, Science, Art and History, deepening their understanding and supporting the transfer of knowledge across the curriculum. As a result, pupils are able to apply mathematical reasoning, scientific understanding and creative skills in purposeful contexts. Through the food technology curriculum, children gain a secure understanding of nutrition, healthy eating and cooking techniques. They develop valuable life skills and an appreciation of how food choices can contribute to wellbeing, fostering positive habits that can continue into adulthood. By the end of Year 6, pupils leave Defford School with a strong set of practical and creative skills, a passion for innovation and a belief in their ability to design solutions to problems. They are well prepared for the next stage of their education and inspired to consider future careers in fields such as engineering, architecture, design, construction, manufacturing and the culinary arts. Ultimately, the impact of the curriculum is that children become resourceful, aspirational and capable individuals who are equipped with the skills and confidence needed to reach their full potential in an ever-changing world.
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Year A

Class	Autumn	Spring	Summer
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Birch	Our Fabric Faces	Dips and Dippers	Moving Pictures – Traditional Tales
<i>Reason</i>	Children will explore and become familiar with the names of different fabrics and learn how to choose and manipulate fabrics to create different effects; they will also learn how to join fabrics in a variety of ways. Running stitch will be introduced during this unit. Finally, children get the chance to apply all of these skills to help them create their own fabric face which they will evaluate.	This unit will teach about good food hygiene rules and using kitchen equipment to prepare food safely. Children will apply these skills when making and evaluating a healthy dip and dippers. The unit develops children's understanding of the eatwell plate and explains the importance of eating a healthy and varied diet.	This unit gives children opportunities to develop their understanding of mechanisms. Children listen to and role play different Traditional Tales and then learn how sections of the stories can be made into a moving picture. Following instructions on how to make different types of mechanisms, such as levers, wheels and sliders, gives children experience and information to draw on when developing their own ideas. They sketch a design based on their ideas and then create their moving picture centred on the story of 'The Three Billy Goats Gruff.' Children evaluate their finished product.
Oak	Juggling Balls	Battery Operated Lights	The Great Bread Bake Off
<i>Reason</i>	This unit will teach how to make juggling balls. They will start by exploring and evaluating different juggling balls. Children are then given a design brief, asking them to design and make a circus themed juggling ball. A hemming and overcast stitch will be introduced during this unit. Children will learn about decoration techniques; getting the chance to use tie-dye and fabric paints. Finally, when they have completed the making of their juggling ball, children will evaluate their product against design criteria.	This unit gives children opportunities to enhance their knowledge and understanding of electrical systems. In this unit children will develop understanding about series and parallel circuits and different types switches. They will then be given the chance to apply their knowledge about electric circuits in a purposeful way by designing and making a battery operated light which will be controlled by a homemade switch. Children will decide upon the design criteria for the light by considering who will use it, where it will be used and what for. Finally, children will complete a detailed evaluation of their final product.	This unit will teach about working with food. Children will gain an insight into the history of bread production, then investigate and evaluate existing bread products. They will create design criteria which will be referred to when designing, making and evaluating their own bread product. Children use a range of skills and techniques using simple kitchen tools and measuring equipment, they will learn how to knead dough correctly and the technique of proving bread.
Ash	Automata Animals	Super Seasonal Cooking	Programming Adventures
<i>Reason</i>	This unit gives children opportunities to further develop their understanding of mechanical systems. Children learn about controlling movement with a cam mechanism as part of an automata animal. They develop their designing skills through using information sources to research ideas about animals which are then incorporated into the design criteria and designs. They make a simple cam mechanism to formulate an understanding of how different shaped cams can be used to produce different movements. Children extend their making skills by developing techniques in cutting, shaping and joining to combine components and by selecting tools and equipment to measure and cut wood and card accurately. Through these activities they gain an understanding of the	This unit of work will teach about the importance of buying seasonal food. The first part of the unit provides an opportunity for children to learn where, when and how a variety of ingredients are grown, reared, caught and processed. Children will then have the chance to sample some spring seasonal food before designing their own balanced seasonal meal. They will learn how to cook with the seasonal ingredients following their own recipes and using a wide range of preparation and cooking techniques. Finally, children will evaluate their product against their design criteria. Children will learn appropriate hygiene rules for handling meat and fish and safe preparation skills.	Children will apply their understanding of computing to program a floor robot. They will explore a range of adventure maps and use these to create original designs. As a group, they will research how floor robots move along different types of materials and use this knowledge to create obstacles squares. Children will use appropriate joining methods to make a scale adventure map. They will test and evaluate the effectiveness of another group's obstacle squares.

	working characteristics of the materials and components and how they can be combined to create more useful properties. Peer assessment is used to improve designs and evaluate final products.		
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Year B

Class	Autumn	Spring	Summer
Birch	Fabric Bunting	Sensational Salads	Packed Lunch Problems
<i>Reason</i>	This unit will teach about working with fabric. It starts with children evaluating a range of existing bunting with a theme around counting. Children are then set a design criteria. They will learn how to use a graphics program to create a design and template for their bunting. Working with felt, children will cut out a bunting shape and use a simple running stitch. Children will be given the chance to explore different fabrics that they could use to enhance their designs. Using techniques such as sewing, stapling and gluing, children will decorate their felt flag. Finally, children will evaluate their product.	This unit will teach about peeling, zesting, cutting safely and applying these skills when preparing healthy dishes. Children will learn key information about healthy eating and where their food comes from. They will gain some practical ideas about ingredients that can be combined to make interesting and healthy salads.	This unit gives children the opportunity to develop their understanding of structures. The exploration of different types of lunch boxes gives children the experience and information to draw on when developing their own ideas. The children create their ideas following the design criteria, given at the beginning of the project, and go on to create models from reclaimed materials. Children gain a basic understanding about how structures can be made stronger, stiffer and more stable. At the end of the unit, children test their product and suggest further improvements.
Oak	Let's Go Fly a Kite	Mechanical Posters	Edible Garden
<i>Reason</i>	This unit gives children opportunities to develop their understanding of frame structures and how they can be strengthened and stiffened. Children will discover information about a key event involving a kite that helped shape the world. Children will gain knowledge and understanding about the parts and shapes of kites. This will help them when designing and making their own kites. Finally, children will test and evaluate their kites against design criteria they have created.	This 'Mechanical Posters' unit gives children opportunities to develop their understanding of mechanical systems. Following instructions on how to make different types of lever and linkage mechanisms gives children experience and information to draw on when developing their own ideas. They sketch a design based on their ideas, make a prototype, and then create their 'Lever and Linkage Poster' using the context of recycling. Finally, children will evaluate their finished product.	This unit provides an opportunity for children to learn where and how a variety of ingredients are grown. Firstly, children will learn how to plant seeds and care for their plants so they yield produce that can be used in their cooking. They will learn how to cook with the ingredients they are growing; following recipes and using different kitchen equipment. The lessons consider the appropriate safety and hygiene rules.
Ash	Global Food	Felt Phone Cases	Marbulous Structures
<i>Reason</i>	This unit will give children the chance to discover the exciting and diverse choice of food available around	This unit will teach children about how to write their own design criteria. They will design products with the	This unit gives children opportunities to develop their understanding of more complex free standing

	the world. The first part of the unit provides an opportunity for children to learn where in the world a variety of ingredients flourish. They will then build on their understanding of the eatwell plate, placing different ingredients into the correct food groups. This will develop a deeper understanding that although food can be extremely varied, it still comes under the same basic food groups. Children will then have the chance to learn some basic and advanced cooking techniques, they will apply these skills when making some traditional dishes from different countries.	user in mind thinking about aesthetics and functionality. Annotated designs will be used to communicate ideas as well as step by step plans. Children will learn how to make a paper template and how to sew a running stitch, backstitch, whip stitch and blanket stitch. Finally, when they have made their felt phone case, children will learn how to write a detailed evaluation.	structures and how they can be strengthened and reinforced. Children will gain knowledge and understanding about how to join and shape materials. Children will then apply these skills, using an iterative design process, to create their marble runs. Finally, children will test and evaluate their marble runs against design criteria.
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Willow class will learn their art curriculum through the EYFS Areas of Learning: Understanding the World, Physical Development, Expressive Art and Design, Literacy, Personal, Social and Emotional Development. Please refer to the EYFS Curriculum Plans.