

Design Technology Progression

Intent of the curriculum

At Woodseaves, we want our children to be 'Designers' and 'Technologists'. We want them to have ambitions to and grow up wanting to be architects, graphic designers, chefs or carpenters. Design and Technology is dynamic and multidimensional. It is our intention that our D&T curriculum will provide opportunities to solve real and relevant problems, allowing our pupils to develop essential everyday skills and unlock their potential to be the designers and innovators of tomorrow. The D&T curriculum will encourage children to learn, think and intervene creatively to solve problems both as an individual and as part of a team. Design and Technology will allow all Woodseaves pupils to put their learning from other areas of the curriculum into practice and will work to enhance and deepen their understanding of those areas, including Maths, Computing, Science, and Art.

Implementation

- D&T is taught in every year group, once per week during the second half of each term.
- Many DT units are based on planning through: Cooking and Nutrition, Mechanisms, Structures, Textiles and Electrical Systems
- Children will research products, develop design ideas and initial sketches, and show case learned skills, technical knowledge and vocabulary, final designs, and evaluations.
- We use a skills-based approach to teaching and Design Technology learning using objectives taken from the National Curriculum. We teach DT skills discretely, making relevant cross-curricular links, and ensure all children access all areas of the Design Technology Curriculum.
- Teaching of DT will follow the cycle of Research, Develop own ideas, Make a final idea and Evaluate
- Beginning with the purpose of a product for a user, the children are encouraged to use the exploration of existing products to gain first-hand experience of existing approaches. We aim to promote creative problem solvers, both as individuals and part of a team and pupils develop their understanding of the ways in which people in the past and present have used design to meet their needs.
- Children design and make quality products using a range of tools, materials, and components, make connections with their learning across the curriculum including in maths, computing, science, and art and reflect on and evaluate techniques using subject-specific vocabulary.
- Teachers follow a clear progression of skills which ensure all pupils are challenged in -line with their year group expectations and given the opportunity to build on their prior knowledge.
- Our assessment will be used to inform future practice.

Impact

The impact of our Design and Technology curriculum is in the development of our pupils being able to approach problems creatively and in a range of ways, applying their knowledge from across the curriculum areas independently. By providing a range of contexts and the necessary skills, we endeavour to support pupils in their future educational journey and in the understanding of the ever-developing world around them. The skills and attributes they develop will benefit them beyond school and into adulthood: the ability to use time efficiently, work with others productively, show initiative, independence, resilience and manage risks effectively will ensure well-rounded citizens who will make a difference in the wider world. Through the use of termly assessment and data analysis, we ensure that children who are achieving well, as well as those who are in need of additional support, are identified, and additional provision and strategies are planned in and discussed with class teachers. We expect the children to know more, remember more and understand more about Design and Technology.

Early Learning Goal and National Curriculum Links

EYFS	Key Stage One	Lower Key Stage Two	Upper Key Stage Two
<ul style="list-style-type: none"> • Construct with a purpose, using techniques, tools and manipulating materials to achieve a planned effect. • Select construction resources to create an intended idea for imaginative play. • Create items from stories and props for role play using a variety of materials. • Create a simple design idea based on existing products. • I can use shapes and colours to represent an object. • I can explore with colour and see what happens when I mix colours. • I can experiment with a range of tools, including sponges, stampers and brushes. • I can experiment with a range of media, including pencil, collage, chalk and paint. • I can observe features of subjects and their positions. • I can print through folding paper to create symmetrical patterns and stamping using every day and found materials. 	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <p>Design</p> <ul style="list-style-type: none"> • 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 <p>Make</p> <ul style="list-style-type: none"> • 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 <p>Evaluate</p> <ul style="list-style-type: none"> • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> • 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. 	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <p>Design</p> <ul style="list-style-type: none"> • 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 <p>Make</p> <ul style="list-style-type: none"> • 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 <p>Evaluate</p> <ul style="list-style-type: none"> • 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 <p>Technical knowledge</p> <ul style="list-style-type: none"> • 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. 	

At Woodseaves children will:

EYFS	Stage One	Stage Two	Stage Three	Stage Four	Stage Five	Stage Six
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Design	<ul style="list-style-type: none"> Begin to draw images of designs. Discuss ideas and how I plan to make my product with support. 	<ul style="list-style-type: none"> I can draw and label a simple sketch to show my design intention. I can create a design based on existing products. Through discussion, I can suggest ideas, develop my design ideas and explain how I plan to make my product. I can generate a design that meets set criteria for a target audience. I can design a purposeful, functional, appealing product. I can use ICT where appropriate to show my design intention. 	<ul style="list-style-type: none"> I can draw and annotate sketches from different angles to show my design intention. I can use my analysis of existing products to inform my own design. I can make changes to my design based on feedback given. I can develop a clear plan for how I will make my product. I can use research to develop design criteria to meet an identified purpose. I can plan the equipment and materials I will need to create my product. I can design a functional, appealing product that is fit for purpose. I can use computer-aided design where appropriate to help show my design intention. 	<ul style="list-style-type: none"> I can draw annotated sketches, and cross-sectional and exploded diagrams to clearly show my design. I can research existing products and conduct market research and use my findings to inform a design specification. I can develop and make changes where necessary to a clear plan for how I will make my product. I can create more than one design idea to meet my design specification and select a final design based on my evaluation and feedback. I can design an innovative, functional, appealing product that is fit for purpose. I can use computer-aided design where appropriate to show an accurate design intention. I can test my design ideas through creating prototypes and pattern pieces.
Technical Knowledge	<ul style="list-style-type: none"> Begin to suggest ways to make my product stronger. Begin to know what some simple mechanisms are. 	<ul style="list-style-type: none"> I can suggest ways to make a product stronger, stiffer and more stable. I know what a mechanism is and the part that levers, pivots, wheels, axles and chassis play in them. 	<ul style="list-style-type: none"> I can suggest materials and techniques that could be used to strengthen and stabilise a structure. I know what a pneumatic system is and how they are used in products. I know what a series circuit is and the function of batteries, switches, bulbs, buzzers and motors. I know key events and individuals in design and technology that have helped to shape the world. 	<ul style="list-style-type: none"> I can suggest materials and techniques that could be used to strengthen and stabilise more complex structures. I know the difference between series and parallel circuits and the function of batteries, switches, bulbs, buzzers, motors and solar cells. I know how changes can be made to wheels, axles and chassis to impact the function of the product. I know how to use ICT to program, monitor and control products. I can explain how key events and individuals in design and technology have helped to shape the world.
Vocabulary	Mechanism, design, stronger, idea.	strengthening, stiffening, stabilising, mechanism, sliding mechanism, lever, pivot, wheel,	Flexible, transparent, translucent, opaque, net, complete circuit, power source, wires, component, switch, electrical conductor	Electric motor, component, mechanical system, wheels, axles, chassis, pulley, belt and pulley system, rotation, tunnels and arches, levers and linkages,
Make	<ul style="list-style-type: none"> Begin to develop cutting and joining techniques. Develop accuracy in cutting materials. Begin to name and use a range of tools and equipment for practical tasks. 	<ul style="list-style-type: none"> I can explore how structures can be made stronger, stiffer and more stable. I can explore and construct a sliding mechanism, a lever and pivot mechanism and a wheel mechanism to create a moving picture. I can explore and construct a moving model with wheels, axles and chassis. I can cut and sew textiles. I can join materials effectively. I can use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). I can select materials and components, including construction materials, textiles and ingredients, according to their characteristics. 	<ul style="list-style-type: none"> I can use materials and techniques to strengthen and stabilise a structure. I can create a moving model using a pneumatic system. I can create a product with a complete circuit that includes either bulbs, buzzers or motors. I can use a wide range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing) accurately. I can select materials and components, including construction materials, textiles and ingredients, according to their functional and aesthetic qualities. I can follow a step-by-step plan, choosing the right equipment and materials. 	<ul style="list-style-type: none"> I can use materials and techniques to strengthen and stabilise more complex structures. I can create movement in my product through transferring motion I can create a product with a complete circuit made from a range of electrical components, including bulbs, buzzers, motors, switches and solar cells. I can cut, sew, join and reinforce textiles using a range of different stitches. I can use pattern pieces to create a final product. I can hem, finish and decorate a textile product, considering its aesthetic qualities. I can explore and construct a more complex moving model with wheels, axles and chassis, making changes to improve the product's function. I can program, monitor and control my product using computing.
Vocabulary	Join, cut, stick, cardboard,	Structure, join, cardboard, plastic, metal, needle, thread, fabric, running stitch, overstitch,	Base, pneumatic system, pressurised air, mechanical motion, pneumatic drills, air brakes, applique, cross-stitch, blanket stitch, sampler,	Textile, prototype, pattern piece, hem, back stitch,
Evaluate	<ul style="list-style-type: none"> Begin to evaluate creations, with support discussion strengths and weaknesses. 	<ul style="list-style-type: none"> I can evaluate my product against set design criteria, explaining strengths and weaknesses. I can explore and evaluate existing products and how they work. 	<ul style="list-style-type: none"> I can evaluate my product against the design criteria I developed, explaining strengths and weaknesses. I can test my product in different ways to evaluate how fit it is for purpose. I can use feedback to evaluate my design before and during its creation. I can investigate and analyse a range of existing products, explaining how they would meet the design criteria. I can understand how key events and individuals in design and technology have helped shape the world. 	<ul style="list-style-type: none"> I can evaluate my product against the design specification I developed, explaining strengths and weaknesses. I can seek evaluation from others through developing questionnaires and tests to be conducted. I can use feedback to evaluate and make changes to my design throughout the different stages of its development and creation. I can investigate and analyse a range of existing products through disassembly and explain how they would meet the design specification.

				<ul style="list-style-type: none"> I can understand how key events and individuals in design and technology have helped shape the world and apply some of the principles in my design.
Vocabulary	Good, better, worse, strong, weak.	Strength, weakness, design criteria, product, effective,	Romans – credited with invention of the greenhouse John Boyd Dunlop – first pneumatic inflatable tyre Pizza – evolved from flatbread dishes 18 th century Naples	Henry Ford – First affordable car St Nicolas – legend behind the hanging of stockings Michael Faraday – first electric motor which used the force of magnetism. Sir John Anderson – Anderson shelter designer John Baker/ Herbert Morrison – Designed Morrison shelter and named after the minister.
Food and Nutrition	<ul style="list-style-type: none"> Discuss flavours – likes and dislikes. Understand the importance of washing hands before eating/preparing food. Can discuss healthy eating choices. Can use cutlery independently to cut food. Begin to use a knife to spread. 	<ul style="list-style-type: none"> I can test flavours, textures and colours of different foods. I can use the basic principles of a healthy and varied diet to prepare a dish. I can explain where different types of food come from. I can use cutting, grating and peeling to prepare fruit and vegetables. I can prepare food hygienically. 	<ul style="list-style-type: none"> I can test and compare flavours, textures and the appearance of different foods. I can explain why certain foods are in season at different times of the year and why it is good to eat seasonal food. I can include seasonal food in dishes I prepare. I can explain where and how a variety of ingredients are grown, reared, caught and processed. I can use a range of cooking tools to cut, grate and peel fruit and vegetables in different ways. I can consider different food groups needed for a healthy, balanced diet when preparing a dish. 	<ul style="list-style-type: none"> I can test and compare flavours, textures and the appearance of different foods against my own set criteria. I can compare sweet and savoury dishes by their nutritional value. I can explain how cuisines from other countries have influenced what is eaten in Britain today. I can consider a range of flavours, textures and appearances to create a dish. I can create a dish through baking. I can measure out quantities of ingredients given in a recipe. I can combine ingredients through pouring, sieving, folding, whisking and stirring.
Vocabulary		Picnic, balanced diet, food groups, fat, protein, carbohydrate, dairy, fruit, vegetables, flavour, texture, colour, recipe, savoury, sweet, healthy, varied, cut, grate, peel, hygiene, cored	Seasonal food, seasons, northern and southern hemisphere, food groups, balanced diet, fibre, grown, caught, reared, processed, cut, grate, peel, flavours, textures, appearance,	Sweet, savoury, seasonality, seasoning, nutritional value, balanced diet, flavour, peel, grate, juice, dice,
Christian Values links				
Cultural Capital Links Possibilities	Design and making a product to sell			

