Willow Lane Design & Technology Curriculum

Our intent

Through the teaching of design and technology at Willow Lane, we aim to create problem solvers, creators and producers. They will have the necessary skills and knowledge to understand how products are made, and the design process behind it. They also have some fundamental life skills from how to cook a nutritious meal, to how to trouble shoot and solve problems as they arise, to how to use emerging technology to design and create.

Children will be taught the knowledge of how to use different materials, how to cut and shape them for their own purposes using a variety of tools. They will learn how to create different mechanical and electrical systems. They will learn how to be healthy and to how create seasonal, affordable healthy snacks. We teach to the heart quite literally with this strong link of cooking skills woven throughout the curriculum. We also ‘teach to the heart’ by creating rich opportunities for our children to solve problems and to create, trial and evaluate solutions of their own.

At Willow Lane, you will see children experimenting with different ways of joining objects to create castles, monuments, and giant marble runs. You will see children using different mechanical and electrical systems to create space explorers, games and toys. You will see children learn how to sew to create puppets, covers, bags or stuffed toys. You will also see children preparing and making delicious and nutritious smoothies, snacks and meals. Children will also experience a range of local designers and producers and will learn how to present and showcase their work. Our children develop the aspirations, knowledge and skills to thrive and become shapers of tomorrow's world.

Our curriculum provides a detailed interpretation of the National Curriculum statements. We have adapted the guidance within the National Curriculum to meet the needs of the children at Willow Lane and created a broad and balanced curriculum. It provides opportunities for children to delve deeper and apply their knowledge in a wide range of contexts. Furthermore, we know our children learn more when they are provided with memorable experiences with which to anchor and link their learning. These experiences provide opportunities for rich discussion and enable children to develop their cultural capital and vocabulary.

Willow Lane School

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Assessment in DT

How we assess

Each unit begins with a short introduction, which sets the scene for later learning. This is usually presented in the guise of a problem. Children are taught to empathise with the users, build up knowledge and necessary skills and then create ideas to solve the problem. They will evaluate their ideas in relation to the problem and select an idea to develop. Children may also prototype different ideas to help explore solutions. Finally children will have a product that can be judged on its success at solving the problem intended. Within each year, and usually within each unit children will look at an individual or invention or discovery that changed the world. Over the course of the unit, children learn the necessary technical language and foundational knowledge to help them communicate how they can solve problems.

Teachers use the 'I will know…'and 'I will know how to…' statements in each unit to assess whether children are achieving age related expectations. Teachers use formative assessment as an opportunity to identify strengths in the unit and plan opportunities to further deepen and broaden children's learning. It is also an opportunity to identify children and areas that require further consolidation and plan future learning episodes accordingly. The teaching sequence should be based on the stages of the design process, although there will have to be discrete lessons set aside for children to learn and practise certain skills, or to gain specific knowledge.

Unit outcomes allow teachers to identify those who are working towards unit expectations, those who are meeting the expectations for the unit and those who are working at greater depth within the unit. Outcomes may take the form of low-stakes testing, reports, presentations or other creative tasks that allow children to showcase their learning.

Children not meeting the expectations for a unit, or where gaps are identified, will be given further opportunities to revisit the foundational learning identified in each unit. This may be through regular retrieval tasks based on the 'Learning Checks' or through planned learning tasks designed to enable learners to revisit and apply earlier knowledge or skills in a new context.

The outcomes and 'Learning Checks' also support the subject lead in identifying strengths and areas for further development in the curriculum design and teaching and learning of design technology.

The overview of the progression in design and technology skills is shown on the next page. Key skills for each unit should be selected from the overview that meet the needs of each class. To assess children's historical enquiry skills, teachers observe the execution of skills that have been previously modelled and take note of those children who are not yet secure in using them. If children are not yet secure in the skills, further opportunities are planned in later learning episodes for children to revisit them. If children are secure in the skills, then opportunities to broaden the skills and apply them in new contexts are planned as appropriate.

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Willow Lane Design Technology Overview

Year group	Autumn		Spring		Summer	
EYFS: Red	Busy Being Me	Celebrations	Magic Time Machine	Our Wonderful World	Wet and Wild	When I Grow Up
1. Orange	Enhancements: paper straw bridges, newspaper bridges, Investigate wheels and axels – simple junk model car		**Make a fruit and veg smoothie and packaging** Enhancements: Make a face with moving parts e.g. mouth with split pins, eyes on sliders		**Make a mini-monument** Enhancements: mini-gardens, poly-tunnel for seedlings, junk-model toy	
2. Yellow	Enhancements: make a model tourist attraction, make a model town/area, make a relief map		**Make an exploration vehicle** Enhancements: a slingshot rocket		**Make puppets for a beach puppet show** Enhancements: Make a paper windmill, fairground wheel, bunting	
3. Green	Enhancements: Make a story poster that uses magnets to move a character a long, Make a shadoof, electrostatic game, use different materials to make a pyramid		**Make a moving monster** Enhancements: mini houses from stone-age through to iron age		**Make a healthy picnic wrap** Enhancements: Cold frame for seedlings, paper straw Eden dome.	
4. Blue	Enhancements: flood defences, aqueduct, make a recycled castle, the invention of corners - joining two sides together		**Make a Morse-code machine,** Enhancements: slingshot car, pneumatic arm		**Make a passport/phone/book holder** (out of cotton)	
5. Indigo	Enhancements: Wartime rations – what could you make? Make-do and mend project		**Make a marble run** Enhancements: catapult, bridges, pavilion temple		**Make a healthy meal**	
6. Violet	Design a device to monitor your location (CAD) Enhancements: make an adventure map for a beebot		Enhancements: earth's crust model (with pneumatics/hydraulics)		**Design and make an eco-product for the summer fair** (Fairtrade, local, organic) I.e. a tote bag, a toy for children to play at the summer fair	