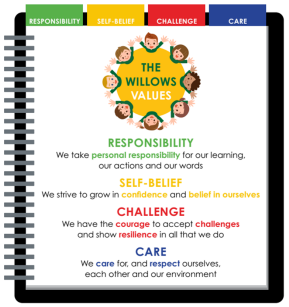
The Willows Primary School

DESIGN TECHNOLOGY Curriculum



Subject Leader	Mrs S Jennings

INTENT

- To use the programmes of study of the National Curriculum for design and technology to underpin teaching and learning.
- To enable pupils to produce creative work, exploring their ideas and recording their experiences into DT workbooks.
- To help pupils become proficient in design techniques to design and make high quality prototypes and products for a wide range of users.
- To teach pupils how to engage in critical studies to test, evaluate and analyse their ideas and products and the work of others.
- To ensure that pupils know about great designers, and understand the historical and cultural development of their products.

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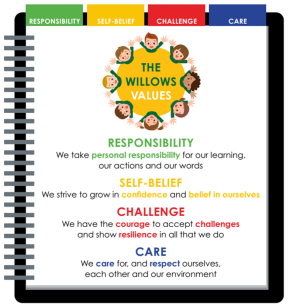

IMPLEMENTATION

- Through investigative and evaluation activities pupils will learn how to dissemble, sketch, play, and interact with a range of existing products to develop and share their ideas, experiences and imagination.
- Through focussed tasks, pupils will be taught to use a range of materials creatively to design and make products. They will be shown how to develop their techniques, designing skills and making skills as documented in the DT Progression of Skills.
- Through design, make and evaluate assignments they will create products with users and purposes in mind.
- Pupils will use DT books to record their observations and use them to review and revisit ideas. In KS2 pupils will learn how to use cross-sectional and exploded diagrams, as well as to learn about computed aided design.
- In the cooking and nutrition strand of DT, pupils will be taught about the principles of nutrition and healthy eating, learn where food comes from and how to prepare simple dishes.
- All will learn about the work of a range of designers, describing the differences and similarities between different practices and disciplines, and making links to their own work.
- The teaching and learning of design and technology will take account of each year groups theme for the half term as well as opportunities for cross curricular links to ensure learning is meaningful. Lessons shall be tailored by the teacher to meet the needs of each pupil.

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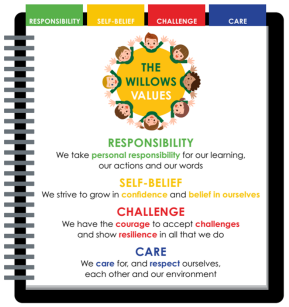

What is taught when?						
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Half Term 1		Use mechanisms to create moving fish.	Stable Structures - den building	Know how food is grown, reared, caught and processed.	Research structure of earthquake proof houses and design a prototype	Mechanical systems to recreate moving animal
Half Term 2	Simple mechanisms - making moving objects/vehicles	Design and create a product using a design criteria.	Recreate a viking longboat.	Romans as inventors - recreate prototype of aqueduct	Research interactive children's books in order to create a history book for children.	Recreate educational product (sarcophagus) focussing on functionality and aesthetics
Half Term 3	Food - where it comes from/what to eat on holiday.	Build structures – a house	Understand seasonality and design a healthy dish	Design a product to re-use plastic and make water filter.	Research and design products that aid problems linked to long-distance travel	Create new packaging for product of Fairtrade using own design criteria
Half Term 4	Food - where it comes from/what to eat on holiday.	Design and make a replica of the Titanic	Design a product - Anglo-Saxon shield/helmet	Structures - Greek Temples	Prepare and cook a variety of predominantly savoury dishes	Research to plot the 'evolution' of various technologies. High-quality prototypes to reflect the ingenuity of Stone Age man
Half Term 5	Structures - create 3D map of school	Design a menu for different locations around the world	Range of mechanical systems to create a moving scene.	Design and create scale models of area, using knowledge of structures and mechanisms	Use computer programming for a game.	Mechanical systems to create a locomotive
Half Term 6	Simple mechanisms - pop-up from story book.	Use mechanisms to create moving parts eg pulley	Design and create a product for children	Use electrical circuits to create an invention.	Use mechanical and electrical systems to create a souvenir.	Food that reflects community

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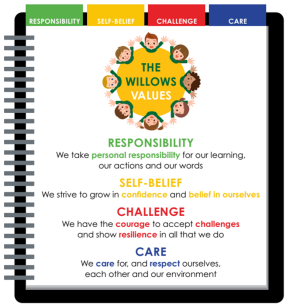

Knowledge and Skills Prior to KS1 - DESIGN TECHNOLOGY in EYFS

Before embarking on key stage 1 work, many children will have attended our nursery and reception classes where they will have had the opportunities to find out and learn about the world they live in. The foundation stage provides a rich environment in which we encourage and value creativity. We relate the creative development of the children to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for children aged three to five. The children's learning includes art, designing and making, dance, role-play and imaginative play. The range of experiences are imaginative and enjoyable.

By the end of EYFS, pupils are expected to have been able to experiment, explore and discuss different art forms, media and techniques as outlined in the Expressive Arts and Design area, specifically, 'Creating with Materials' and 'Being Imaginative and Expressive'.

This will be achieved by facilitating students in their exploration, as well as:

- Asking and answering questions about the starting points for their work, and developing their ideas.
- Exploring the differences and similarities within the work of artists, craftspeople and designers in different times and cultures.
- Review what they and others have done and verbally share what they think and feel about it.

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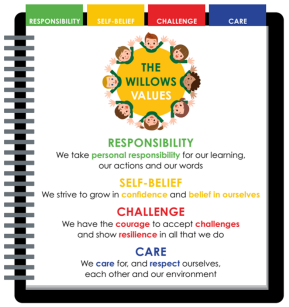

Skills and Knowledge Progression					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Design					
Design simple products that work and look appealing Discuss and draw ideas and use ICT to communicate	Design products for others and themselves that are purposeful, functional and appealing Generate, develop, model and communicate ideas through talking, drawing, templates and ICT	Communicate ideas using different strategies eg discussion, sketch Use research to inform design Take risks to become innovative and resourceful	Communicate, generate and develop ideas using a range of strategies eg prototypes, pattern pieces Use research to inform design and develop design criteria Take risks to become innovative and resourceful	Communicate, generate, develop and model ideas using a range of strategies eg computeraideddesign, cross-sectional and exploded diagrams Use research to inform design and generate own design criteria Communicate, generate and develop ideas, drawing on other disciplines eg science, maths, computing Confidently take calculated risks to become innovative, resourceful and enterprising	Communicate, generate and develop ideas, drawing on other disciplines eg science, maths, computing Use research to inform innovative design and generate own design criteria Confidently take calculated risks to become innovative, resourceful and enterprising
Evaluate					

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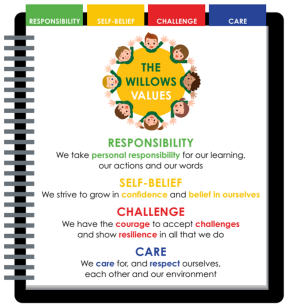

Explore existing products eg home, school Discuss own ideas and designs	Explore and evaluate a range of existing products eg home, school Evaluate own ideas and designs against given design criteria	Evaluate own ideas and designs against given design criteria and consider the views of others to improve their work Investigate a range of existing products that address real/ relevant problems, in a range of relevant contexts eg home, leisure, school	Evaluate own and others' work suggesting improvements and consider the views of others to improve their work Investigate a range of existing products in a range of relevant contexts eg culture, industry	Generate own design criteria and evaluate ideas and products against these Investigate and analyse a range of existing products that address real/relevant problems, in a range of relevant contexts Understand how key events and individuals in D&T helped to shape the world	Generate own design criteria and critique ideas and products against these Explain and understand how key events and individuals in D&T helped to shape the worldy
Technical Knowledge					
Start to build structures, exploring ways to stiffen, stable and strengthen Explore simple mechanisms	Build structures, exploring ways to stiffen, stabilise and strengthen Explore and use mechanisms eg levers, wheels and axles	Apply understanding of how to strengthen, stiffen and reinforce structures Identify range of mechanical systems and how they work (gears, pulleys, cams, levers and linkages)	Apply understanding of how to strengthen, stiffen in order to reinforce more complex structures Use computing to program, monitor and control products Identify wider range of mechanical systems and how they work (gears, pulleys, cams, levers and linkages)	Construct more complex structures by applying range of strategies in order to solve real/ relevant problems Drawing on disciplines & making connections to wider subject areas, apply understanding of computing to program, monitor and control products Making connections to real & relevant problems, apply understanding of wider range of mechanical systems (gears, pulleys,	Construct more complex structures by applying range of strategies in order to solve real / relevant problems Drawing on disciplines & making connections to wider subject areas, apply understanding of computing to program, monitor and control products Making connections to real & relevant problems, apply understanding of wider range of mechanical systems (gears, pulleys,

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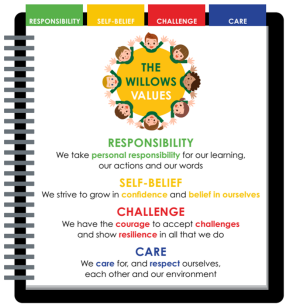

			Use understanding of electrical systems (series circuits, switches, bulbs and motors)	cams, levers and linkages) Making connections to real & relevant problems, apply understanding of electrical systems (series circuits, switches, bulbs and motors)	cams, levers and linkages) Making connections to real & relevant problems, apply understanding of electrical systems (series circuits, switches, bulbs and motors)
Make					
Use a range of materials and components eg construction, textiles and ingredients Use a range of tools and equipment to perform practical tasks eg cut, shape, join and finish	Select from and use a wide range of materials and components (according to their characteristics) eg construction, textiles and ingredients Select from and use a wide range of tools and equipment to perform practical tasks eg cut, shape, join and finish	Select from and use a wide range of tools, equipment, materials and components accurately	Select from and use a wider range of tools, equipment, materials and components accurately to make prototypes	According to their functional properties and aesthetic qualities, select from and use a wide range of tools, equipment, materials and components accurately to make high quality prototypes	According to their functional properties and aesthetic qualities, select from and use a wide range of tools, equipment, materials and components accurately to make high Safely use and explore a variety of quality prototypes
Food Technology					
Begin to understand where food comes from Prepare simple dishes using knowledge of healthy food	Use basic principles of a healthy and varied diet to prepare dishes Understand where food comes from	Apply principles pf a healthy, varied diet when preparing variety of savory dishes Apply understanding of seasonality and its link to ingredients	Know where and how a variety of ingredients is grown, reared, caught and processed	Prepare and cook a variety of predominantly savory dishes using a range of cooking techniques	Prepare and cook a variety of predominantly savory dishes using a range of cooking techniques Know where and how a variety of ingredients are grown, reared, caught and

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					processed and its impact on meal design Develop crucial life skill of feeding themselves and others affordably and well

Key Vocabulary Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
glue stick build shape layer strong weak straight curve mix measure ingredient recipe test explore stable stiffen strong flexible	healthy nutrition cooking evaluate design balanced varied prepare grown reared processed stabilise communicate gear components functional experiment pulley appealing represent movement	resourceful functional criteria adapt innovative strategy reinforce components evaluation feature improvement streamline annotate suggestion mechanical seasonality agriculture aesthetic harvested invention	system linkage audience architect complex symmetry structure reinforce prototype designer engineer surveyor preservative pastoral arable locally sourced branding effectiveness insulator	dimensions customised functionality embedded alternatives dimensional texture designing engaging interaction moveable influence stability hygiene savoury variety preparation mechanical portrayal iterative	influence target -market reflection accuracy packaging branding improvement reinforce execute resourceful evolved technological advancement prominent network axle hydraulic pressure rotation

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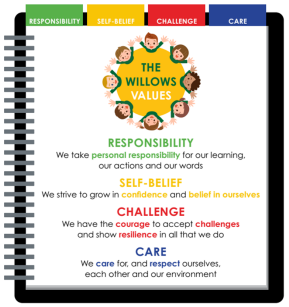

join equipment shape research tool cut material product purpose diagram construct build make mechanism create discuss food ingredient cooking chopping cutting farming	purpose		electricity circuit audible conductor illuminate process manipulate	systems element appropriate	discipline manufacture strategy educational foraging toxic nutritious

IMPACT

During their time at The Willows, children will benefit from a rich broad and balanced programme of design and technology. They will experience and experiment with a wide range of materials as they explore the design of existing products, in order to grow and flourish as designers. They will build a growing awareness of the design technology which runs through their own history, culture and other cultures as they are introduced to the world of designers and their inventions. They will have opportunities to join in with extra-curricular clubs run by staff at lunchtimes and after school, to allow opportunities to rehearse and further develop their design technology skills.