

Milwards Primary school and Nursery

Design and Technology Curriculum

Intent:

At Milwards Primary school and Nursery, children receive a design and technology curriculum which allows them to exercise their creativity through designing and making. The children are taught to combine their designing and making skills with knowledge and understanding in order to design and make a product. Skills are taught progressively to ensure that all children can learn and practice in order to develop as they move through the school. Evaluation is an integral part of the design process and allows children to adapt and improve their product, this is a key skill which they need throughout their life. D&T allows children to apply the knowledge and skills learned in other subjects, particularly Maths, Science and Art. Children's interests are captured through theme learning, ensuring that links are made in a cross curricular way, giving children motivation and meaning for their learning. Children will learn basic cooking skills.

Implementation

What do we teach? What does this look like?

We teach the National Curriculum, supported by a clear skills and knowledge progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children. All teaching of DT should follow the design, make and evaluate cycle. Each stage should be rooted in technical knowledge. The design process should be rooted in real life, relevant contexts to give meaning to learning. While making, children should be given choice and a range of tools to choose freely from. To evaluate, children should be able to evaluate their own products against a design criteria. Each of these steps should be rooted in technical knowledge and vocabulary. DT should be taught to a high standard, where each of the stages should be given equal weight. The key skills we teach the children are:

- sewing and textiles
- cooking and nutrition
- electrical and mechanical components
- Using materials
- D&T is usually taught in in short blocks.

Impact

What will this look like? By the time children leave our school they will:

- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical knowledge and skills accurately.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- An opportunity to experience and develop the attributes of **awe, ambition and citizenship**.
- A passion for the subject.

		EFYS	Year 1	Tear 2	Year 3	Year 4	Year 5	Year 6
			structures (free standing). Mechanisms (sliders and levers), food technology	textiles, food technology (templates and joining techniques), mechanisms (wheels and axels)	mechanisms (levers and linkages), food technology, structures(shell structures)	Textiles (2D shape to 3D product), electrical systems (simple circuits and switches), food technology (health and varied diet).	structures (frame structures), textiles (combing different fabric shapes) food (c	Electrical systems (monitoring and control), electronics, more complex switches and circuits, mechanisms (gears and pulleys),
Design	Understanding contexts, users and purpose		With support, use simple design criteria; state what their products are, who and what they are for and how they will work.	Use simple design criteria; state what their products are, who and what they are for and how they will work.	Begin to gather information about user needs; develop their own design criteria; describe the user, purpose and design features of their products and explain how they intend them to work.	gather information about user needs; develop their own design criteria; describe the user, purpose and design features of their products and explain how they intend them to work.	Begin to carry out research; develop a simple design specification; describe the user, purpose and design features of their products and explain how they intend them to work.	carry out research; develop a simple design specification; describe the user, purpose and design features of their products and explain how they intend them to work.
	Generating, developing, modelling and communicating ideas.		Begin to generate ideas using their own experiences and existing products; use talk, drawing, templates, mock-ups and, where appropriate, computers.	generate ideas using their own experiences and existing products; use talk, drawing, templates, mock-ups and, where appropriate, computers.	Begin to generate realistic ideas based on user needs; use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design.	generate realistic ideas based on user needs; use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design.	Begin to generate innovative ideas drawing on research; use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design.	generate innovative ideas drawing on research; use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design.
Making	Planning		With support, plan by suggesting what to do next; select from a range of tools, equipment, materials and components.	plan by suggesting what to do next; select from a range of tools, equipment, materials and components.	Begin to order the main stages of making; select suitable tools, equipment, materials and components and explain their choices.	order the main stages of making; select suitable tools, equipment, materials and components and explain their choices.	Begin to, formulate lists of resources and step-by-step plans; select suitable tools, equipment, materials and components and explain their choices.	formulate lists of resources and step-by-step plans; select suitable tools, equipment, materials and components and explain their choices.
	Practical skills and techniques		Begin to follow procedures for safety and hygiene; measure, mark out, cut, shape, assemble, join, combine and finish a range of materials and components.	follow procedures for safety and hygiene; measure, mark out, cut, shape, assemble, join, combine and finish a range of materials and components.	Begin to follow procedures for safety and hygiene; use a wider range of materials and components; measure, mark out, cut, shape, assemble, join, combine and finish with some accuracy.	follow procedures for safety and hygiene; use a wider range of materials and components; measure, mark out, cut, shape, assemble, join, combine and finish with some accuracy.	Begin to follow procedures for safety and hygiene; use a wider range of materials and components; measure, mark out, cut, shape, assemble, join, combine and finish with accuracy.	follow procedures for safety and hygiene; use a wider range of materials and components; measure, mark out, cut, shape, assemble, join, combine and finish with accuracy.
Evaluating	Own ideas and products		With support, make simple judgements about their products and ideas against design criteria	make simple judgements about their products and ideas against design criteria.	Begin to evaluate their ideas and products against their design criteria.	evaluate their ideas and products against their design criteria.	Begin to identify strengths and areas to develop in their ideas and products against their design specification; consider the views of others to make improvements.	identify strengths and areas to develop in their ideas and products against their design specification; consider the views of others to make improvements.
	Existing products		With support, explore who and what products are for, how they work and are used, what materials they are made from and what they like and dislike about them.	explore who and what products are for, how they work and are used, what materials they are made from and what they like and dislike about them.	Begin to, investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used and how well they work.	investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used and how well they work.	Begin to, investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used, how well they work, and how innovative and sustainable they are.	investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used, how well they work, and how innovative and sustainable they are.
	Key events and individuals		N/A	N/A	know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.
Technical knowledge	Making products work.		Begin to understand about the simple working characteristics of materials and components, the movement of simple mechanisms, how freestanding structures can be made stronger, stiffer and more stable; use the correct technical vocabulary.	know about the simple working characteristics of materials and components, the movement of simple mechanisms, how freestanding structures can be made stronger, stiffer and more stable; use the correct technical vocabulary.	Begin to know that materials have functional and aesthetic qualities; that systems have an input, process and output; how to program a computer to control their products; how to make strong, stiff shell structures; use the correct technical vocabulary.	know that materials have functional and aesthetic qualities; that systems have an input, process and output; how to program a computer to control their products; how to make strong, stiff shell structures; use the correct technical vocabulary.	Begin to know that materials have functional and aesthetic qualities; that systems have an input, process and output; how to program a computer to control and monitor their products; how to reinforce and strengthen a framework; use the correct technical vocabulary.	know that materials have functional and aesthetic qualities; that systems have an input, process and output; how to program a computer to control and monitor their products; how to reinforce and strengthen a framework; use the correct technical vocabulary.
Cooking and nutrition	Where food comes from		Begin to know that food comes from plants or animals and that it is farmed or caught.	know that food comes from plants or animals and that it is farmed or caught.	Begin to know that food is grown, reared and caught in the UK, Europe and the wider world.	know that food is grown, reared and caught in the UK, Europe and the wider world.	Begin to know that food is grown, reared and caught in the UK, Europe and the wider world; that seasons may affect the food available; how food is processed into ingredients.	know that food is grown, reared and caught in the UK, Europe and the wider world; that seasons may affect the food available; how food is processed into ingredients.
	Food preparation, cooking and nutrition.		Begin to know how to prepare simple dishes safely and hygienically without a heat source, name and sort foods into groups; know that everyone should eat at least five portions of fruit and vegetables a day.	know how to prepare simple dishes safely and hygienically without a heat source, name and sort foods into groups; know that everyone should eat at least five portions of fruit and vegetables a day.	Begin to know how to prepare a variety of dishes safely and hygienically; that a healthy diet is made from a variety and balance of different food and drink; that food and drink are needed to provide energy for the body.	know how to prepare a variety of dishes safely and hygienically; that a healthy diet is made from a variety and balance of different food and drink; that food and drink are needed to provide energy for the body.	Begin to know how to prepare and cook a variety of dishes safely and hygienically using, where appropriate, a heat source; that different food and drink contain nutrients, water and fibre that are needed for health.	know how to prepare and cook a variety of dishes safely and hygienically using, where appropriate, a heat source; that different food and drink contain nutrients, water and fibre that are needed for health.