Design Technology at Kenton Primary School

Intent

In Kenton Primary School it is our intent that all our children are offered the chance to use both creative and will develop a capacity for action and a critical appreciation of the processes through which technologies are developed and how technologies can contribute to our ever-changing society. Our pupils are continually given opportunities to consider the use and impact of technological solutions on equity, ethics, and personal and social values. In creating solutions, as well as responding to the designed world, pupils consider desirable, sustainable patterns of living, and contribute to preferred futures for themselves and others..They will be taught to problem solve, encounter resilience, evaluate and critically critique as well as developing making skills. We also want our children to be able to think and talk like an expert. Technical vocabulary will therefore be something the children become accustomed to.

Implementation

In Kenton Primary School, DT is taught:

● In line with the National Curriculum, supported by a clear knowledge and skills progression starting in EYFS and continuing right through to the end of Key Stage 2.

● Ensuring knowledge and skills are built on year by year and sequenced appropriately to maximise learning for all children.

● Following the design, make and evaluate cycle.

● With each stage of the cycle rooted in technical knowledge - the design process also rooted in real life, relevant contexts to give meaning to learning.

● With DT units organised so that they link to current class topics in order to combine and build on prior learning in DT and link with other subjects. This can be seen in the federation's two year rolling curriculum overview.

● By well-trained teachers who are supported by the DT co-ordinator and given appropriate CPD where necessary to ensure successful implementation of the curriculum. Links with secondary schools are made where possible to enable staff to confidently plan for progression to KS3.

Impact

● Show a passion for the subject.

● Have an excellent attitude to learning and independent working.

● Use time efficiently and work collaboratively, confidently and constructively with others.

● Carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.

● Act as responsible designers and makers, working ethically, using finite materials carefully and working safely.

● Demonstrate a thorough knowledge of which tools, equipment and material to use to make their products.

● Apply mathematical and scientific knowledge and skills accurately.

● Manage risks exceptionally well to manufacture products safely and hygienically.

● Talk confidently about a range of designers and their experiences in design.

● Use their creativity to express themselves through a range of media.

● Transfer taught skills to prepare them for future work life.

Meeting the needs of our disadvantaged children, including Children Looked After, those eligible for 2 Pupil Premium funding and those with SEND

As with all subjects in the curriculum every child has the right to an ambitious and progressive curriculum. Any barriers that might arise need to be addressed in order for the child to achieve their full potential in Design and Technology. Due to the progressive nature of the Knowledge, Skills and Understanding from EYFS to Year 5/6 there is a clear framework in which to support the child by developing their learning to an appropriate level for their specific and individual needs. Design and Technology can provide a practical method of communication which also supports children in this field. We aim to provide essential knowledge, experiences, and opportunities to all children, particularly the most disadvantaged, as part of developing cultural capital to prepare them for future success. While teaching Design and Technology, teachers will prioritise familiar powerful strategies, like scaffolding and explicit instructions, to support pupils with SEND. This means understanding the needs of specific pupils and weaving specific approaches into every day, high quality classroom teaching- being inclusive by design not as an afterthought.

What Design Technology is taught at Kenton?

This is an overview of what the year groups will cover in our 2-year rolling programme.

Cycle B

2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Willow (Year N/R)						
Willow (Year 1)		**Textiles** Can you design and make a Christmas hand puppet?		**Cooking and Nutrition** Can you design and create a healthy salad?		**Mechanisms Make** Can you design and make a moving minibeast?
Oak (Year 2/3/4)		**Use of materials** Make mud huts	**Mechanisms** Make a working model of a Roman catapult.		**Structures** Make an Egyptian pyramid.	
Chestnut (Year 5/6)	**Mechanisms** Design and make a working model of a guillotine.		Design and create a structure that holds		Design and make a healthy meal fit for a king and queen.	

Cycle A

2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Willow (Year N/R)						
Cherry (1/2)		**Cooking and nutrition** Create healthy treats (dog treats) for the pets		**Use of materials** How do we keep a dragon's egg warm?	**Construction** Design and make houses to recreate Pudding Lane Design and make a boat that floats on the Thames	
Oak (Year 2/3/4)	**Cooking and nutrition** Design a meal to sustain an explorer.			**Use of materials** Explore still and flexible materials to make a model of a bridge to cross the Exe estuary.		**Use of materials** Design and make a wind and waterproof roundhouse for iron age people.
Chestnut (Year 5/6)	**Textiles** Design and sew a South American animal bean bag.	**Stiff and flexible sheet materials** and sign and make an air raid shelter. Anderson Shelters.	**Electrical and mechanical components** Explore mechanisms such as cams and pulleys to invent a game inspired by the `We the curious` trip.		**Moldable materials** Design and make a trainer prototype for the next Olympics.	

Formative Assessment.

Please explain how your subject is assessed.

End Points And Expectations.

By the end of Key Stage One Aged 7:	By the end of key stage 2
Design - developing planning and communicating ideas.	
● Using own designs and plans to bring products to fruition.	
✔ Select from and use a range of tools and equipment to perform practical tasks. ✔ Select from and use a wide range of materials and components, including construction material, textiles and ingredients, according to their characteristics. ✔ Build structures exploring how they can be made stronger, stiffer and more stable. ✔ Explore and use mechanisms in their products.	✔ Select from and use a wider range of tools and equipment to perform practical tasks. ✔ Select from and use a wider range of materials and components, including construction material, textiles and ingredients, according to their functional properties and aesthetic qualities. ✔ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. ✔ Understand and use mechanical systems in their products. ✔ Understand and use electrical systems in their products.

By the end of Key Stage One Aged 7:	By the end of key stage 2
Make – Working with tools, equipment, materials and components to make quality products.	
● Using own designs and plans to bring products to fruition.	
✔ Select from and use a range of tools and equipment to perform practical tasks. ✔ Select from and use a wide range of materials and components, including construction material, textiles and ingredients, according to their characteristics. ✔ Build structures exploring how they can be made stronger, stiffer and more stable. ✔ Explore and use mechanisms in their products.	✔ Select from and use a wider range of tools and equipment to perform practical tasks. ✔ Select from and use a wider range of materials and components, including construction material, textiles and ingredients, according to their functional properties and aesthetic qualities. ✔ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. ✔ Understand and use mechanical systems in their products.

	✔ Understand and use electrical systems in their products.

By the end of Key Stage One Aged 7:	By the end of key stage 2
Evaluate – evaluating processes and products.	
● Critique, evaluate and test their ideas and products and the work of others	
✔ Explore and evaluate a range of existing products. ✔ Evaluate their ideas and products against a design criteria.	✔ Investigate and analyse a range of existing products. ✔ Evaluate their ideas and products against a design criteria, considering the views of others to improve their work. ✔ Understand how key events and individuals in design and technology have helped shape the world.

Early Years Foundation Stage

The main areas of learning that support the development of children's Design and Technology knowledge and understanding are drawn from the following areas of the Early Years Foundation Stage; Personal Social and Emotional Development, Physical Development, Understanding the World and Expressive Arts and Design. There are also close links with the Characteristics of Effective Teaching and Learning (CoETL); Playing and Exploring, Active Learning and Creating and Thinking Critically.

Knowledge Skills and Understanding Break Down for Expressive Arts and Design.
Foundation Stage
- Our Design and Technology curriculum enables all children to explore learning behaviours through the Characteristics of Effective Teaching and Learning. They will use these skills in meaningful contexts and be able to apply them in other areas of learning.   **Playing and Exploring**: children investigate and experience things, and 'have a go'.   **Active Learning**: children concentrate and keep on trying if they encounter difficulties and enjoy achievements.   **Creating and Thinking Critically**: Children have and develop their own ideas, make links between ideas, and develop strategies for doing things.   - Children will have the confidence to take risks when tackling new challenges and be curious and creative to solve simple problems practically. They will know and identify similarities and differences in a range of materials. They will know that different technology and tools are used to make different products and can select these appropriately for tasks. They will experiment with colour, design, texture form and function. Children will begin to use simple equipment safely and effectively.   - Children will participate in small group, class and one to one discussions, offering their own ideas, using recently introduced vocabulary. Children will share their creations, explaining the process they have used.   - The individual needs, interests and development of each child are used to plan a challenging and rich curriculum.

Key Concepts in Design and Technology - Design Make Evaluate Model

Design
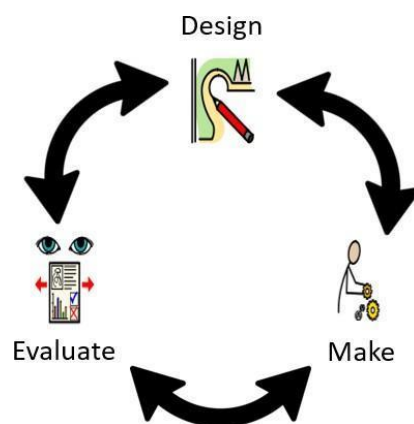
Evaluate

Make

At Kenton Primary School, we follow the continuous learning model of design, make and evaluate in Design and Technology. All of our teaching, learning and independent or group practice follows this model.

At the beginning of every unit, children are given design criteria of the precise goals that a project must achieve to be successful. Children will begin exploring, assessing, testing and evaluating existing products before moving on to design a product of their own based on the design criteria and their intended user. It is in their designs where children will select what tools, materials and ingredients they intend to use.

Once children are happy with their designs, they will begin to make their product . During the making process, children will begin to think critically and assess their product, the tools they have used and the materials they have selected. In addition, pupils will constantly evaluate whether their design is working or if their design and product needs to be adapted based on their evaluation of their product or dish.

When children have finished making their final product they will make a final evaluation, assessing it against their design criteria, functionality, and aesthetic (KS2). It is instilled in the pupils of Kenton Primary that we are constantly evaluating, adjusting our designs and products to improve them – this makes us successful chefs, inventors and designers.

Knowledge, Skills and Understanding in Design Technology			
Years One			
Enquiry:			
Vocabulary:			
Cooking & Nutrition	Textiles	Structures	Mechanisms

Knowledge, Skills and Understanding in Design Technology			
Years Two			
Enquiry:			
Vocabulary:			
Cooking & Nutrition	Textiles	Structures	Mechanisms

Knowledge, Skills and Understanding in Design Technology

Years Three

Enquiry:

Vocabulary:

Cooking & Nutrition	Textiles	Structures	Mechanisms

Knowledge, Skills and Understanding in Design Technology			
Years Four			
Enquiry:			
Vocabulary:			
Cooking & Nutrition	Textiles	Structures	Mechanisms

Knowledge, Skills and Understanding in Design Technology			
Years Five			
Enquiry:			
Vocabulary:			
Cooking & Nutrition	Textiles	Structures	Mechanisms
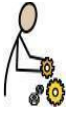
Knowledge, Skills and Understanding in Design Technology			
Years Six			
Enquiry:			
Vocabulary:			
Cooking & Nutrition	Textiles	Structures	Mechanisms

Key Concepts for Design Technology Explained

Design	Design is developing, planning and communicating ideas about what you intend to make.
Make	Make is to work with tools, equipment, materials, ingredients, and components to make quality products and dishes.
Evaluate	Evaluate means to reflect on ideas and products against the design criteria.
Design Criteria	The specific and concise requirements that a product must meet in order to be successful. This is used to evaluate the final product.