Mulberry
Wood Wharf Primary

EY, KS1 and KS2 Design & Technology Overview

- **Access to education and the chance to be educated is a human right in a civilised world**
- **Education should provide rich intellectual and personal development for individuals and communities of people**
- **Education is a public good**

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Rec, KS1 and KS2
D&T Overview

Our Values

Vision

Mulberry Wood Wharf Primary is committed to striving for excellence in all that we do. Our vision is that pupils become creative and ambitious learners who strive to do their best at all times because they are motivated and guided by outstanding teams within the school. They will be able to contribute to their local community and understand how their actions impact upon the wider world. They will be caring citizens who know how to keep themselves safe and who realise that they have a role to play in looking after others. As we develop our teaching and our curriculum, we are aiming for outstanding in all that we do.

Outstanding Achievement For All

Our Values

Our Characteristics of effective learning


We are Authors!


We are designers and artists!


We are Scientists!


We are Historians!


We are explorers!

We are mathmaticians!

We are articulate!


We are performers!

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Design and Technology Intent

At Mulberry Wood Wharf Primary, we are dedicated to providing a dynamic and engaging Design and Technology curriculum that aligns with The CUSP Design and Technology framework. Our curriculum is carefully structured into blocks, each addressing key disciplines such as food and nutrition, mechanisms, structures, systems, electrical systems, understanding materials, and textiles. These blocks are designed to ensure vertical progression, where pupils revisit key concepts throughout their primary journey, increasing the complexity and challenge as they grow. This approach ensures that pupils develop a deep and lasting understanding of each discipline.

We believe that in addition to the core knowledge necessary for success within each discipline, it is equally important to focus on developing pupils' competencies in the *Working as a Designer* aspect of the curriculum. Each module is crafted to promote skills in design thinking, problem-solving, and creativity. This comprehensive approach helps teachers monitor pupils' development, not just in acquiring technical skills, but also in how they apply their learning in a broader design context.

Our vision for STEM learning is central to our approach at Mulberry Wood Wharf Primary. Through our dedicated STEM club, collaborations with the STEM Academy (Mercedes Grand Prix), and our regular design competitions, we provide pupils with opportunities to apply their knowledge in real-world settings, developing their creativity, critical thinking, and collaborative skills. These activities are an integral part of our STEM strategy and offer pupils the chance to experience the excitement and innovation of the field of design and technology.

The CUSP Design and Technology package is an essential resource for our teachers, providing a sequence of skeleton lesson plans, contextual reference materials, vocabulary modules, explanatory videos, and annotated exemplifications. The teacher videos offer clear instruction on relevant techniques, skills, and methods, while the exemplifications are invaluable in assessing pupil outcomes and supporting teachers in deepening their own subject knowledge. Additionally, teachers are provided with a list of materials and resources required to deliver each block, ensuring consistency and effectiveness in lesson delivery.

Central to our curriculum is the development of oracy and vocabulary skills. We want pupils to confidently use the language associated with design and technology, both when discussing their work and when evaluating the work of others. This is embedded in each learning module, helping pupils to articulate their ideas and enhance their understanding.

In the early years, continuous provision plays a vital role in supporting the development of design skills, while also linking seamlessly to communication and language development. Through purposeful and engaging activities such as designing structures to house the Three Little Pigs, building stable bridges for the Billy Goats Gruff, making sandwiches for a trip to the moon, or creating puppets for a puppet show, we offer our youngest learners meaningful and hands-on experiences. These activities foster creativity, problem-solving, and teamwork, providing a strong foundation for later learning.

At Mulberry Wood Wharf Primary, we ensure that pupils' skills in Design and Technology build progressively, with each year group encountering more complex challenges and developing greater expertise. By linking design and technology to other areas of the curriculum, we ensure that pupils have the opportunity to apply their learning in meaningful and purposeful ways, preparing them for success in the future with confidence, creativity, and technical skill.

Working as a Designer			
Design	**Make**	**Evaluate**	**Apply**
The art or process of deciding how something will look or work.	Create something by combining materials or putting parts together.	Form an opinion of the value or quality of something after careful thought.	Use something or make something work in a particular situation.

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Year group sequencing

CUSP Design & Technology Long term sequence	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Mechanisms	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Mechanisms	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Mechanisms	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Mechanisms	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Food and Nutrition	Structures	Mechanisms
Year 6	Food and Nutrition	Mechanisms	Food and Nutrition	Structures	Electrical Systems	Textiles

DT Expectations: Block A and Block B (Autumn Term) Year 1-3

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Year	Block A	Block B
1	**Mechanisms** **Sliders and levers** **How can you make a picture move?** Know common uses of sliders Know different methods to create card sliders Know how sliders can create simple mechanisms Be able to design and make a slider product Be able to evaluate the success of their outcomes and recommend improvements	**Structures** **Freestanding structures** **How can you stop a tower from toppling over?** Know a freestanding structure is a structure that stands on its own foundation or base without attachment to anything else Be able to build structures that are freestanding using a range of different materials
2	**Textiles** **Exploring shape using a template** **How can you repurpose an item of clothing?** Know how to cut out shapes which have been created by using a template Know how to use a range of basic sewing skills Be able to use a template to transfer a pattern Be able to cut out and join fabric shapes using a template	**Food and Nutrition** **Nutrients and the body** **What does healthy mean?** Know why vegetables are so important to our health Know what processed foods are Be able to prepare a range of salad vegetables Be able to shape and season a bread snack
3	**Textiles** **Stiffening and strengthening fabric** **How can you make a box out of cloth?** Know fabric can be stiffened Know stiffened fabric can hold a form Be able to select and apply solutions to stiffen fabric Be able to make a box using stiffened fabric	**Food and Nutrition** **Individual diets** **What do we mean by a balanced diet?** Know what is meant by the term balanced Know why fresh foods are better Be able to make a fruit and yoghurt dessert Be able to make homemade chips Be able to flavour foods to increase their sensory qualities

DT Expectations: Block C and Block D (Spring Term)

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Year	Block C	Block D
1	**Food and Nutrition** **Exploring food senses** **How does food affect your senses?** Know why colourful food can be healthier Know how different foods can affect senses Be able to peel, chop and grate a selection of vegetables Be able to modify food to suit food senses	**Understanding Materials** **Selecting materials** **Can you build with bread?** Know building materials have different properties which enable them to be used for different purposes Be able to identify, sort and select materials that can be used in construction Be able to combine materials
2	**Mechanisms** **Axles and wheels** **Are bigger wheels always better?** Know how wheels and axles work together Know the size and position of wheels affects how they move Be able to create a simple wheel mechanism Be able to use wheel mechanisms to propel a simple vehicle	**Understanding Materials** **Manipulating materials** **How can you waterproof a hat?** Know materials can be modified to become waterproof Know origami comes from the Japanese words: ori – folding and kami – paper Be able to make paper waterproof Be able to transform flat paper by folding and creasing to form a hat
3	**Mechanisms** **Levers and linkages – mechanical advantage** **How can you do a lot of work with little effort?** Know types of levers and linkages Know key terminology relating to levers and linkages Know how levers and linkages can change the direction of movement Be able to design and make simplistic lever and linkage products Be able to evaluate the success of outcomes and recommend improvements	**Food and Nutrition** **Food as medicine** **How does food affect your body and mind?** Know food can help body and mind Know how to prepare and cook a range of vegetables Be able to peel and grate a range of vegetables Be able to add flavour and texture to foods

DT Expectations: Block E and Block F (Summer Term)

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Year	Block E	Block F
1	**Textiles** **Joining techniques** **How can two squares of fabric keep you warm?** Know fabric can be joined together using a running stitch Know the types and names of tools needed for sewing Be able to create a running stitch Be able to select tools for sewing Be able to thread a needle	**Food and Nutrition** **Vitamins in food** **Why are vegetables the best?** Know the importance of including a range of vegetables in a diet Be able to peel, grate, season and breadcrumb a range of vegetables
2	**Food and Nutrition** **Processed food** **How healthy is your food?** Know the difference between fresh food and ultra-processed foods Be able to shape and form ingredients to make delicious food Be able to use a range of culinary techniques	**Structures** **Developing strength in structures** **How strong is a piece of paper?** Know paper becomes stronger when it is folded Know a load is the amount of weight a structure must carry Be able to fold paper to increase strength and stability Be able to test and record how much weight paper can hold
3	**Systems** **How things are powered** **How are things powered?** Know different types of energy Know why designers need to carefully consider energy sources Be able to identify how things are powered Be able to suggest appropriate energy sources for design problems	**Structures** **Spanning gaps** **What makes a bridge strong?** Know bridges are structures that allow people and vehicles to cross over an open space Know towers, piers and arches provide strength to a bridge Be able to design and build a beam bridge that can hold the weight of 100 pennies Be able to identify and name parts of a bridge

Assessment In Design and Technology

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The assessment of pupils is formative and is based on pupil outcomes and questioning from each lesson. The following can be used to assess pupils' knowledge and application of skills and techniques as well as their understanding and use of relevant vocabulary.

- Expectations for each block are made explicit on slide one, e.g. At the end of this block pupils will know how to waterproof cotton fabric and which fabrics are both functional and hardwearing.

- The Point of reflection section specifies the expected outcomes for each lesson.

- The Questions for assessment section in each block provides specific questions to be used with pupils to elicit their level of understanding of tools, techniques and effects, e.g. How have the properties of the cotton changed? Is the cotton now more or less functional?

- The Oracy and Vocabulary tasks provide ample opportunities for teachers to evaluate pupils' ability to: - use the language of design and technology effectively; - explain techniques, skills and processes; - evaluate their own and others' work.

- The vocabulary quiz provides an opportunity for teachers to assess pupils' deeper understanding and application of the technical vocabulary covered in the block.

- The exemplifications demonstrate the expected standard against which teachers can assess pupils' work. The best form of assessment in design and technology is at the point of delivery, while pupils are working. This helps us to understand pupils' development as designers, rather than their ability to produce a prescribed end outcome. By encouraging pupils to articulate their thinking and reflections, we can understand which aspects of design and technology may require additional teaching and reshape teaching to support this.

How do we measure the impact of our Geography Curriculum?

We evaluate the impact of our history curriculum in the following ways:

- Pupil Book Study: Small groups of pupils from each class are asked to talk about what they remember about their learning in history. These sessions are led by the history Leader and provide an extremely useful insight into the impact of the curriculum on pupil's learning.
- Lesson visits. The history leader visits a sample of lessons over the year to evaluate the quality of teaching and learning.
- Book looks: The subject leader looks at samples of history books. Often this is done in conjunction with the Pupil Book Study.
- Supported planning and teaching: The history leader works alongside the class teacher to support the planning of history modules, providing quality assurance.
- This all feeds into a termly subject leader evaluation.

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How do we adapt our D&T curriculum to include all learners?

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As part of the planning and preparation for the delivery of each block, teachers will need to consider how specific activities, or the delivery, may need to be adjusted to ensure that pupils with SEND are able to access the materials and participate fully in the lesson.

Pupils with language and communication difficulties (including those with ASD) may need additional visual prompts to help them understand what is expected of them. The task could be broken down into smaller, more manageable chunks and individual task boards used to demonstrate these.

Some pupils may have sensory sensitivities. For those pupils, adjustments may need to be made in order for them to access materials. Pupils who have difficulties with tasks requiring fine motor skills may need appropriate adjustments to be made to enable them to access the task and / or in order to keep them safe.