



What is Design & Technology?

How do designers carry out their work?

Our Subject Leader's Policy & Guide

Intent For Our Design & Technology Curriculum

Vision For Design & Technology

Design and Technology is an inspiring, rigorous and practical subject. At Mayfield, we value the creative potential of Design & Technology and believe that it can have a powerful and positive effect on children, helping them to become confident, creative learners who are able to express their individual interests, thoughts and ideas. We encourage the children to use their creativity and imagination to design and make products that solve real and relevant problems that have occurred in the past or present, as far as possible, within a variety of contexts considering their own and others' needs, wants and values.

We aim to make links to designs and designers throughout history, providing opportunities for children to critically reflect upon and evaluate others' designs and the overall effectiveness of the product before evaluating their own. As pupils progress, we support them to be able to think critically and develop a more rigorous understanding of Design & Technology.

Through DT work in the classroom, the children at Mayfield have the opportunity to develop their skills in **moveable mechanisms and electrical systems**, **structures**, **textiles** and **food and diet**. These areas are developed continuously throughout the school from early years through to year six and the children have the opportunity to revisit skills from previous years before learning new ones. We encourage children to express individuality in their work and to generate their own sketches and designs where they can explore ideas in their **Project Notebooks**, using a clear brief but offering freedoms around decisions and designs, in this way the children can be inventive and take risks. When children leave Mayfield, we expect them to have a wide range of well-developed knowledge and skills in the substantive and disciplinary areas of learning, so they can build on and develop them further as they continue in their education.

Intent For Our Design & Technology Curriculum

How We Plan For, And Teach, Design & Technology

The Mayfield **'I Dream Of Being...'** scheme of work is designed around the **four disciplinary areas** referenced in the **National Curriculum**: **research, design, make** and **evaluate**. From early years onwards, children visit knowledge and skills in **four key substantive areas** (with the disciplinary knowledge consistently and progressively present within this): **moveable mechanisms and electrical systems**, **structures**, **textiles** and **food and diet**. The route through the curriculum ensures that prior knowledge and skills are revisited to ensure retention in long-term memory and built upon to develop increasingly sophisticated understanding in meaningful contexts. The planning and assessment system places great emphasis upon mapping progression in the disciplinary areas of being a designer.

Design & Technology is **planned to visit each of the substantive areas at least once in each key stage** in their own planned termly projects. Projects are completed termly across school. Children design products with a purpose in mind and an intended user of the products. Food technology (**food and diet**) is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this. The design process is always linked to real life, relevant contexts to give meaning to the learning. When making their products, the children are given choice and a wide range of tools and materials to choose from.

Design & Technology projects at Mayfield incorporate the following elements: explicit teaching of new vocabulary; recap and revisiting via **Brain Gym**, teacher modelling and questioning and a range of progressive, disciplinary learning stages culminating in a central, purposeful outcome/final piece. When evaluating, the children are taught to evaluate their own products against the initial design criteria to see how well it has met the needs and wants of the intended user and to identify any changes that could be made.

Each project has a **Project Notebook** created as a core guide for each child and to support teachers' ongoing professional development. All teachers at Mayfield are supported to have strong subject knowledge across the Design & Technology curriculum and to know how new learning builds on prior understanding and towards future knowledge and skills.

Design & Technology's presence is maintained through the creation of our **Tech Room** where most sessions take place,, whilst the profile of DT reward, achievement and celebration throughout the school year is maintained via the roles of our **Student Subject Champions**, **Subject Celebrations** and **Subject Achievement Displays**. Rewards always have a specific eye upon personal progress rather than summative attainment.

Design & Technology continues via our enrichment, wider curriculum opportunities: **DT Club & Formula One DT** which runs during the year.

Intent For Our Design & Technology Curriculum

How We Assess Design & Technology Learning

The impact of our DT curriculum can clearly be seen in the children's **Project Notebooks** which build to form a portfolio that the children take to the following year group and through school.

At the beginning of each project, a page in the **Project Notebooks** outlines the main learning objectives alongside the skills that the children will build on. The format of the notebooks means the children see the progression between disciplinary areas from project-to-project. The opportunity to evaluate and reflect on the learning is planned throughout each project to enable the children to see how their learning is progressing and where they need to take it next. On completion of the project, the children are able to self-assess against the learning objectives.

Big Questions are prompted and carefully positioned within **Project Notebooks**. Each project has a **quiz** and **self-quiz** opportunity to assess the retention of new knowledge and vocabulary. Summative judgements are made using the **Key Milestone Document**. At the end of the year, class teachers then use the children's work and outcomes to make a judgement as to whether each child is working at the expected standard. The most frequently used approach is our **Brain Gym** strategy which is devised to hold some of the activities highlighted above but above all else as a planned opportunity for regular review. This aims to strengthen the connections between what the children learn and can recall then frees that working memory for the new learning and work to come.

How We Adapt & Record Learning And Outcomes In Design & Technology

The subject leader has created **Project Notebooks** to assist with progression and knowledge in each project. They act as a central support for session preparation and are created in a format that allows for adaptation and subsequent use with children to capture their learning. Above all they provide a spine for teachers and supporting adults that should then be personalised, adapted and differentiated to meet the starting point needs of the children in each class.

Ways of demonstrating progress and outcomes must be adaptable to suit the needs of learners and the requirements of the subject. Therefore each subject has its own bespoke way of gathering evidence from learners. Otherwise recording work becomes a barrier to learning rather than a chance to celebrate children's achievements and specialist skills and knowledge in areas where they may otherwise excel.

In Design & Technology, children's work is gathered in:

Design & Technology Big Books (Per Cohort) & Individual Project Notebooks

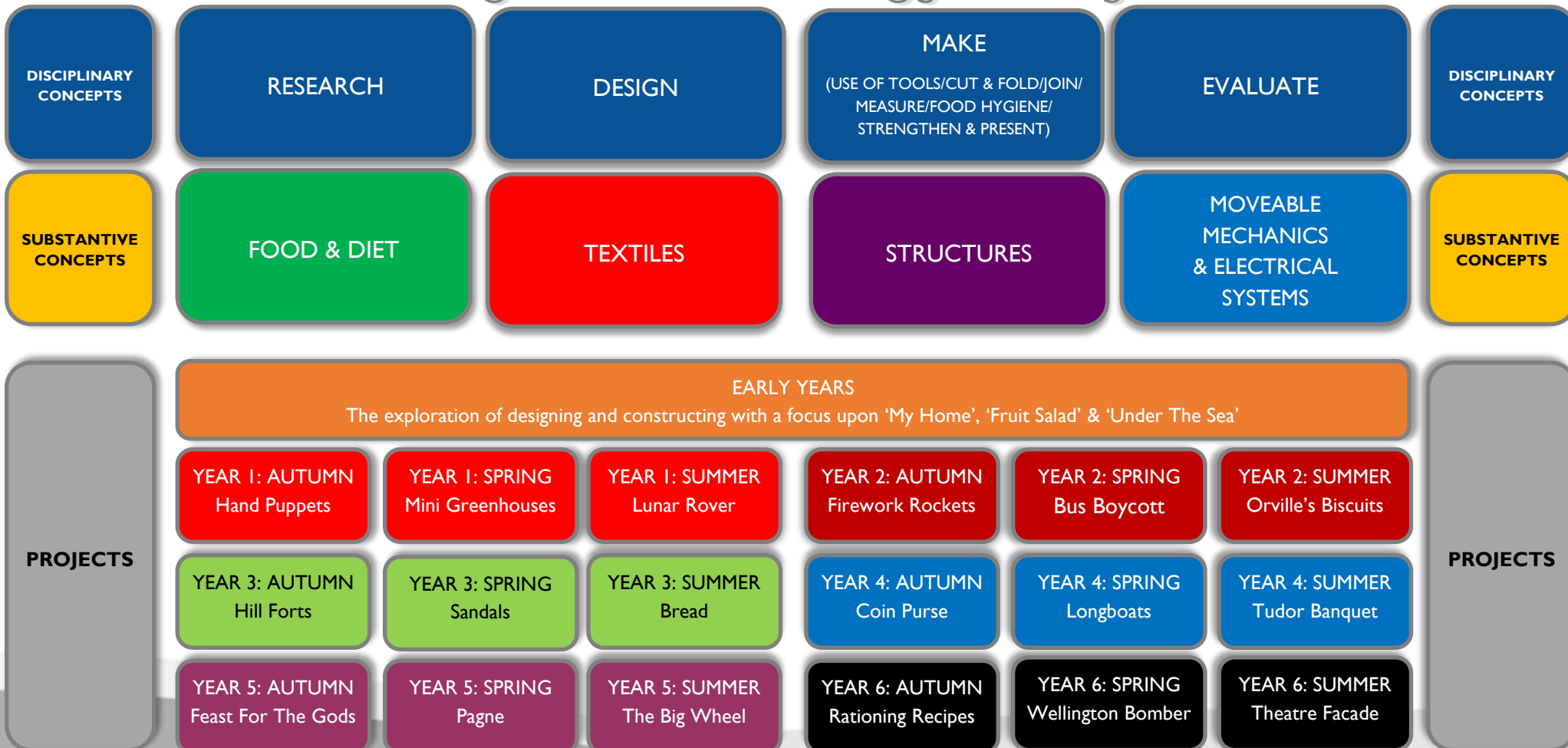
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N A V I G A T E



Design & Technology @ Mayfield



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Design & Technology Overview



	Autumn	Spring	Summer
EYFS	STRUCTURES: My Home In this unit children will think about uses and purposes of different components needed to create structures and think about creating a simple model to represent 'their home'. Trying out methods for joining and combining is the focus here!	FOOD & DIET: Making a Fruit Salad Children will be introduced to the principles of nutrition and learn how to cook by making their own fruit salad. They will begin to use some cooking techniques including chopping, exploring and developing ideas as they go!	MOVEABLE MECHANICS: Under the Sea (Simple Slider) Children will learn how to use a variety of materials, tools and techniques to create a simple slider. The emphasis is once again upon exploration!
Year One	TEXTILES: Hand Puppets Introducing textiles by exploring the properties of different materials, investigate how they have been used to create puppets, based on Sooty, and develop the skills such as cutting and joining textiles together in different ways.	STRUCTURES: Mini Greenhouses (3D) To learn about simple freestanding structures, children will create a 3D model of a greenhouse. They will experiment with different ways of making their structure more stable and investigate the best joining techniques to use before designing and printing the parts on a 3D printer.	MOVEABLE MECHANICS: Lunar Rover In this project children will use their designers skills to create a Lunar Rover. Using their knowledge of recycled materials and their relative strengths they will create a base and sliders for their project. Additional features will be added as a part of the finishing techniques.
Year Two	STRUCTURES: Firework Rockets (3D) To continue developing skills in using a 3D printer by designing parts of a firework structure. They will assemble parts using the most appropriate techniques for their materials and join them using glue or tape creating a rocket shape firework.	MOVEABLE MECHANICS & ELECTRICAL SYSTEMS: Bus Boycott Building upon their previous knowledge, children will make a famous bus similar to the one used by Rosa Parks in 1955. Using a range of materials children will make a 3D bus. Dowel will be used to make axles before adding the wheels.	Food & Diet: Orville's Biscuits Without Milk Learning upon our First Flight project, the children will focus upon Orville Wright and his special homemade biscuits. Children will recreate the recipe using the ingredients available in 1903.
Year Three	STRUCTURES: Hill Forts By the Iron Age, the Celts built hill forts for protection from other enemies. Children will continue to find out about structures, they will design a simple shell structure, before investigating different materials that could be used. Building the fort, children will use wood for their defensive walls, cardboard for the shell of the houses before finishing with straw, wood and clay.	TEXTILES: Sandals Children will investigate a range of textile products that have different purposes to create Roman sandals and to gain an understanding of 3D shape, patterns and seam allowance.	FOOD & DIET: Bread - The Great Egyptian Bake Off In this project, children will investigate the history of bread. They will learn about the importance of it and they will research different types of bread from all over the world. Using their research they will bake their own Egyptian bread using the ancient recipe.
Year Four	TEXTILES: Coin Purse The children will investigate the design of Anglo-Saxon coin purses. They will discuss techniques needed to create a purse, and the types of fabric used and available at the time. They will develop their skills of joining pieces of fabric together and how to create a suitable fastening.	STRUCTURES: Viking Longboats (3D) Children will continue to find out about structures. They will design a simple boat shell structure, before investigating different materials that could be used to create a 3D longboat. They will investigate different ways of designing their structure on a 3D printer.	FOOD & DIET: Elizabeth I Banquet Children will research food from Tudor times. Using their investigation they will make Queen Elizabeth's favourite desert: a fruit party - and this will form the centre piece of a little banquet for their class.
Year Five	FOOD & DIET: Feast For The Gods In this project, children will continue to develop their knowledge of cooking and nutrition. They will prepare, weigh and combine foods using a range of techniques. They will use their understanding of a healthy, balanced diet to create their Greek salad, bruschetta, tzatziki and fruit salad for the Gods.	TEXTILES: Pagne - Benin Clothing In this project, children will make an original Pagne cloth by dyeing fabric and creating West African patterns. To create a final piece used for women and men in a Benin culture, they will join the pieces together using a range of stitches.	MOVEABLE MECHANICS & ELECTRICAL SYSTEMS: The Big Wheel (Motors & 3D) To enhance skills of working in 3D, children will recreate the famous Blackpool Big Wheel. Applying their previous knowledge they will design their projects using a range of equipment including ICT, followed by assembling components with PVA glue, hot glue gun or tape.
Year Six	FOOD & DIET: Rationing Recipes Children will continue to develop their understanding of a healthy diet. Using their knowledge of the availability of range of food during WW2 they will prepare and combine ingredients to create a three course meal: soup, pasty and eggless cake.	MOVEABLE MECHANICS & ELECTRICAL SYSTEMS: Vickers Wellington Bombers (3D) Children will investigate, design and create a model of a WW2 bomber produced in Blackpool. To make their model working they will install motors or pulleys before their final test.	STRUCTURES: Theatre Façade Using their previous knowledge, children will use their building experience to create a Theatre Façade. They will build frameworks to support their structure by cutting and drilling wood using appropriate tools and techniques.

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Intent For Our Design & Technology Curriculum

An Awareness Of Year 7 & KS3 Coverage & Direction

We have designed our curriculum with a view upon the learner's progression into KS3 in mind. As such, we have considered the curriculum of our feeder high school where almost all of our learner's attend upon leaving Mayfield. Therefore our projects either give knowledge that can be taken into more specific and detailed studies at Year 7 or allow for new areas to be studied that can draw upon and make relevant use of prior learning within Mayfield projects. We have also considered our vocabulary in relation to this as well and deliberately use terms in Lower and Upper Key Stage Two that have been highlighted as important in the Year 7 and broader KS3 curriculum.

We know that the following substantive areas form the basis for the next three years of learning before learners make decisions about their KS4 options.

Moveable Mechanisms and Electrical Systems

Food and Diet

Structures

Textiles

LSA: 'All students have the opportunity via the KS3 curriculum to gain a full understanding of engineering principles, nutrition, health and safety and practical applications in both.'

A Designers Vocabulary

A core Design & Technology vocabulary has been created for the children across school. The vocabulary is progressive from EYFS onwards and at all times retains vocabulary previously introduced. We have chosen this language based upon the perspective of being a designer considering the broader concepts and skills ahead of 'project specific terms'. The vocabulary is contained within each **Project Notebook** and referred to throughout. These are also present around the **Tech Room**.

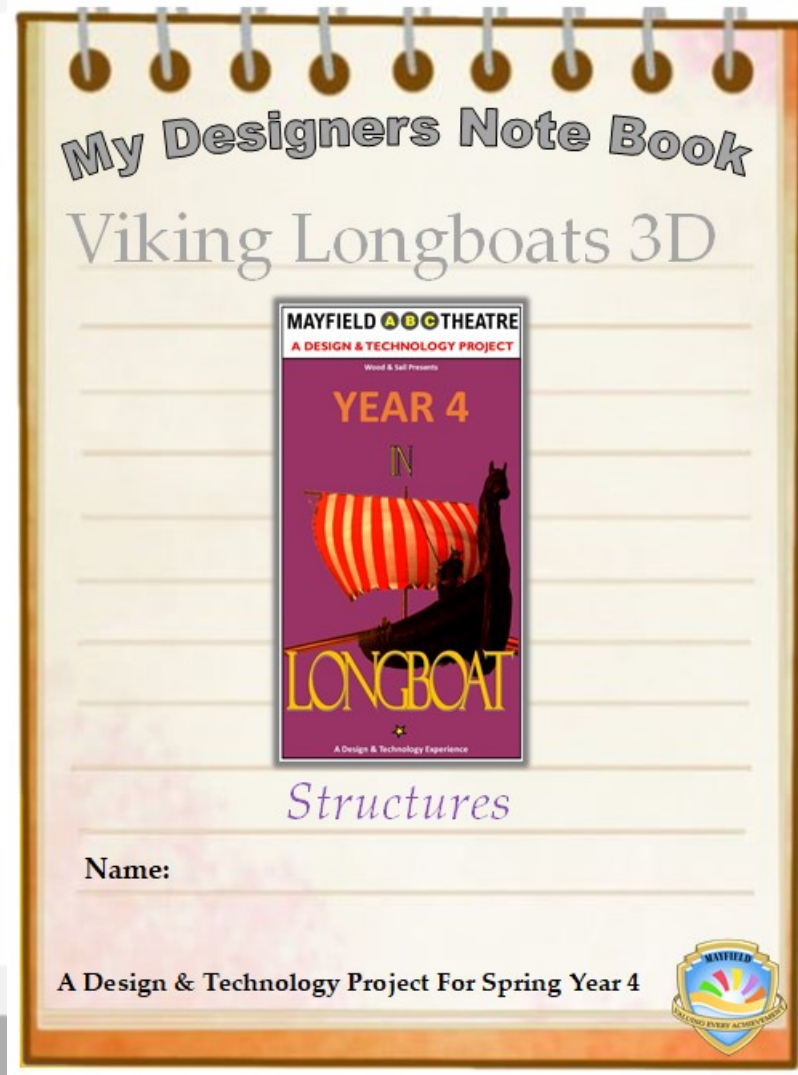
Unit based DT terminology is highlighted within the body of each **Project Notebook** and prompts adults to discuss this new terminology linked to the project being studied at the appropriate time. **It is not expected** that these terms are permanently added to the vocabulary for designers, although we clearly aspire for the children to hold onto terms in order to aid their ability to discuss units across their studies.
It is expected that the children maintain and use their designers vocabulary above all else.

Here are examples of the two kinds of vocabulary we have identified.

Designers Vocabulary: function; join; fix

Project Vocabulary: longship; carving; steering oar

Subject Leader Project Notebooks



The subject leader has created **Project Notebooks** to act as the core document to support preparation, learning, teaching and recording of work.

They are created in a format that allows for adaptation and use with the children at all times. They can be viewed electronically, personalised, adapted and differentiated to meet the starting point needs of the children in each class.

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