



Design and Technology Curriculum Map

Intent:

The curriculum has been designed to empower pupils with virtues that enable them to excel academically and spiritually inspiring them to serve humanity selflessly, with an abundance of love, compassion and forgiveness.

Our curriculum is constructed around our vision to ensure we remain:

Faith-inspired: learning from the wisdom of religion

At Primley Wood we aim to foster holistic growth and character development. We focus on nurturing compassionate, responsible human beings who aspire for excellence in all aspects of life. Exploring religious wisdom allows pupils to respect diverse faith traditions and the beliefs of those without faith.

Virtues-led: We aim to develop pupils to become compassionate, responsible human beings

This is done through promoting virtues which we believe form the foundation of all goodness and prepares children for lifelong learning. Our curriculum is carefully enriched to allow experiences where our pupils, teachers and parents alike learn to grow through a conscious focus on virtues. Our virtues-led education approach helps to provide guidance to enable pupils to understand their choices in order to help lead better lives. Our pupils become self-reflective and flourish; they are able to build strong, meaningful relationships and understand their responsibilities to the wider world.

Aspiring for Excellence: in all that we do.

Our pupils and staff alike aim to become the best human beings they can possibly be, in all aspects of spiritual, social, intellectual and physical life. We foster a school culture which inspires optimism and confidence, hope and determination for all to achieve their best possible. This is accomplished through a rich and challenging curriculum, along with excellent teaching to nurture awe and wonder. Pupils gain a breadth and depth of knowledge and a love of learning to achieve their full potential.

The curriculum at Primley Wood Primary School has been carefully crafted to be broad, balanced and stimulating, giving every pupil the opportunity to be knowledgeable, multi-skilled, highly literate, highly numerate, creative, expressive, compassionate and confident people.

Our vision for Design and Technology is to give pupils the skills and abilities to engage positively with the designed and made world. They learn how products and systems are designed and manufactured, how to be innovative and to make creative use of a variety of resources including traditional and digital technologies, to improve the world around them.

At the centre of the subject is creativity and imagination. Design & Technology is a subject which draws, develops and implements a range of different disciplines including mathematics, science, engineering, computing, geography, business studies and art. The subject embeds high quality literacy skills through analysis and evaluation techniques.

Our Design & Technology curriculum will give the pupils an opportunity to:

Research and Design

- Engage in an iterative process of design and making.
- Undergo primary and secondary research techniques into a range of user's needs, wants and values, analysis of existing products, ergonomics and anthropometrics and the work of others.
- Identify and solve their own problems and the problems of specific clients and target market groups.
- Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.
- Use a variety of design strategies when developing ideas using the iterative design process.
- Develop and communicate their design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.
- Make informed decisions about food and nutrition and allows them to acquire knowledge in order to be able to feed themselves and others affordably and nutritiously, now and later in life.
- Develop knowledge and understanding of the functional properties and chemical characteristics of food as well as a sound knowledge of the nutritional content of food and drinks.

Make

- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.
- Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.
- Demonstrate knowledge and understanding of functional and nutritional properties, sensory qualities and microbiological food safety considerations when preparing, processing, storing, cooking and serving food.
- Explore a range of ingredients and processes from different culinary traditions (traditional British and international) to inspire new ideas or modify existing recipes

Evaluate

- Analyse the work of past and present professionals and others to develop and broaden their understanding.
- Investigate new and emerging technologies.
- Personal project work, analysing how the product fulfils the requirements of the specification and the user's needs, wants and values.

- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists

The curriculum is necessarily aspirational, focused on excellence and on securing in all learners a love of learning through the acquisition of knowledge and an understanding of the world around them.

Implementation:

At Primley Wood, we are guided by the Kapow Scheme of Work for Design Technology. The curriculum is built around essential knowledge, understanding and key skills. These are broken into year group expectations and show clear continuity and progress.

The Kapow's **Design and Technology** scheme has a clear progression of skills and knowledge within the five National Curriculum strands (Design, Make, Evaluate, Technical Knowledge & Cooking and Nutrition) across each year group. Pupils respond to design briefs and scenarios that require consideration of the needs of others, developing their skills in six key areas:

- Mechanisms
- Structures
- Textiles
- Food
- Electrical systems (KS2) and
- Digital world (KS2)

Each of our key areas follows the design process (design, make and evaluate) and has a particular theme and focus from the technical knowledge or cooking and nutrition section of the curriculum. The scheme is a spiral curriculum, with key areas revisited again and again with increasing complexity, allowing pupils to revisit and build on their previous learning.

At Primley Wood we block the delivery of subject content for Art & Design/Design Technology/History/Geography so that we can limit the risk of what is known as cognitive overload - the process where an individual's working memory is overloaded and unable to process new information effectively due to the amount of information it is being required to process. Block teaching allows for all subjects to be taught in equal equity and have quality focused time. It allows us to ensure that no single subject or subjects are given reduced attention and that no subjects are missed from the curriculum. We ensure that there is full coverage of the knowledge and skills required in each block for Art & Design/Design Technology/History/Geography across each year group, as per the Kapow scheme.

It also allows for staff to focus on quality implementation, as the intent of each block is pre-determined. Staff spend time ensuring there is effective building of sequential knowledge, with shorter time periods between adding new knowledge to existing knowledge. We also provide

meaningful opportunities to revisit, recap and assess following a teaching sequence. We believe block teaching also allows for staff to address any misconceptions quickly and within a block. We recognise that cognitive overload could be a key barrier to preventing the full learning of subject content for our pupils. We are aware that if we can limit the amount of new information from different subjects that the pupils must hold in their short-term memory then this will have obvious benefits. This approach is grounded in careful research and neuroscience.

Year	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Rec	<p>Early Learning Goal: Physical Development</p> <ul style="list-style-type: none"> •Progress towards a more fluent style of moving, with developing control and grace. •Develop their small motor skills so that they can use a range of tools competently, safely and confidently. •Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. <p>Early Learning Goal: Fine Motor Skills</p> <ul style="list-style-type: none"> •Use a range of small tools, including scissors, paintbrushes and cutlery. •Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases. •Begin to show accuracy and care when drawing. <p>Early Learning Goal: Expressive Arts & Design</p> <ul style="list-style-type: none"> •Explore, use and refine a variety of artistic effects to express their ideas and feelings. •Return to and build on their previous learning, refining ideas and developing their ability to represent them. •Create collaboratively, sharing ideas, resources and skills. <p>Early Learning Goal: Creating with Materials</p> <ul style="list-style-type: none"> •Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. •Share their creations, explaining the process they have used. 					
1	Cooking & Nutrition: Fruit and vegetables		Textiles: Puppets		Structures: Constructing windmills	
2			Mechanisms: Making a moving monster		Cooking & Nutrition: Balanced diet	Mechanisms: Fairground wheel
3		Cooking & Nutrition: Eating seasonally		Textiles: Cushions		Digital World: Wearable Technology

4		Electrical systems: Torches		Cooking & Nutrition: Adapting a recipe		Mechanical systems: Making a slingshot car
5			Mechanical systems: Making a pop-up book	Textiles: Stuffed toys		Cooking & Nutrition: Developing a recipe
6		Digital World: Navigating the world		Mechanical systems: Automata toys		Electrical Systems Steady Hand Game

Enrichment Opportunities:

Our curriculum extends beyond the National Curriculum and includes a wide range of enriching experiences and opportunities both within and beyond the school day. Pupils are provided with a rounded, culturally rich education through activities that enhance their learning.

Pupils have the opportunity to develop their potential to the maximum in a learning environment that is both challenging and enjoyable. They get involved in a number of cross-curricular activities across the year. Both lunch time and after school clubs give pupils additional time to focus on the subject leading to skills development which can be translated back to classroom. It also gives them the freedom to try new things. Creative homework projects encourage self-expression and builds pupils' confidence. Design Technology enrichment days provide valuable space where pupils can continue to develop their own individual programme of work. Design Technology displays held around school give pupils the opportunity to reflect upon their work.

Transitions:

Moving from EYFS to KS1:

Our learning journey starts in the Early Years where children are exposed to elements of the design and technology curriculum. They are encouraged to make simple designs and are allowed to choose the resources they require. They learn how to use tools safely and how to construct using different materials using different joining techniques. Whilst allowing pupils to work successfully towards the Development Matters statements and Early Learning Goals, the Design and Technology elements taught in the EYFS provide a solid foundation of skills and knowledge for children to transition successfully onto Key stage 1.

Moving on to KS3:

After exposure to our Design and Technology curriculum, pupils will leave school equipped with a range of skills to enable them to study Design and Technology with confidence at Key stage 3. Pupils will be aware of the impact of design and technology on our lives and they will be resourceful, enterprising citizens who will have the skills to contribute to future design advancements. We make links with our local secondary schools asking teachers to come in and provide Design and Technology opportunities for our pupils.

Impact:

Evidence of work will show a range of strands explored, links across the curriculum and work pitched to support and challenge a range of abilities and starting points. Formative assessment is an integral part of our approach to Teaching and Learning.

At Primley Wood, teachers use assessment for learning within lessons to provide live feedback to allow pupils to deepen their understanding and identify gaps in knowledge and skills. Knowledge reviews are planned for spaced retrieval and allow for misconceptions to be addressed and further embed pupils understanding of key knowledge, skills and vocabulary. The progression of skills and knowledge allows teachers to assess the impact over the course of a unit, year and across phases. The scheme of learning is used to identify prior links and future learning which informs teacher assessment and allows building blocks of learning to further develop schemas within topics and across subjects.

Summative assessments are used alongside knowledge organisers to assess the impact of learning at the end of a unit. This in turn informs future teaching adaptations, based on misconceptions and gaps in knowledge and skills. Enquiry questions are used to assess the impact of the teaching of knowledge, skills and vocabulary by allowing pupils to apply their understanding through reflections and critical thinking.

In all year groups, pupils are involved in the evaluation, dialogue and decision making about the quality of their outcomes and improvements they need to make. By taking part in regular discussions and decision-making processes, pupils they will be able to talk confidently about their learning journey and have a growing understanding of how to improve.