

Westcott Church of England School

Design Technology Curriculum Mapping Cycle A (2023-2024) & B (2024-2025)

Design Technology EYFS (Nursery & Reception) & Key Stage 1 Years 1 & 2						
	Term 1	Term 2	Term 3	Term 4	Term 5 /6	July
Topic Cycle A 2023-2024	Unique you and me!	Fire! Fire!	Towers, Tunnels and Turrets!	There's no place like home!	The Secret Scented Garden! (Assessments)	Pupil initiated:
EYFS Framework	<ul style="list-style-type: none"> To develop small motor skills so that they can use a range of tools competently, safely and confidently including: pencils, paintbrushes, scissors and cutlery. 					
National Curriculum	<p>When designing and making, pupils should be taught to:</p> <p>Design:</p> <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p>Make:</p> <ul style="list-style-type: none"> 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 materials, textiles and ingredients, according to their characteristics <p>Evaluate:</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria <p>Technical knowledge:</p> <ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products <p>Cooking & Nutrition</p> <ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from 					
Unit	Food: Fruit and Vegetables Making Smoothies	Design and build houses from 'The Great Fire of London'. Cooking and Nutrition- Making bakery products.	Textiles: Designing and making pouches Cooking and Nutrition Tudor Banquet.	Structures: Constructing a windmill. (A mouse lived in a windmill!)	Mechanisms: Making a moving story book	
Key Knowledge Progression	To understand the difference between fruits and vegetables. To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber).	To know that 'diet' means the food and drink that a person or animal usually eats. To understand what makes a balanced diet.	To know that sewing is a method of joining fabric. To know that different stitches can be used when sewing. To understand the importance of tying a knot	To understand that the shape of materials can be changed to improve the strength and stiffness of structures. To understand that cylinders are a strong type	To know that a mechanism is the parts of an object that move together. To know that a slider mechanism moves an object from side to side.	

	<p>To know that a blender is a machine which mixes ingredients together into a smooth liquid.</p> <p>To know that a fruit has seeds and a vegetable does not.</p> <p>To know that fruits grow on trees or vines.</p> <p>To know that vegetables can grow either above or below ground.</p> <p>To know that vegetables can come from different parts of the plant.</p>	<p>To know where to find the nutritional information on packaging.</p> <p>To know that the five main food groups are.</p> <p>To understand that I should eat a range of different foods from each food group.</p> <p>To know that nutrients are substances in food that all living things need to make energy, grow and develop.</p> <p>To know that 'ingredients' means the items in a mixture or recipe.</p> <p>To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy.</p> <p>To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.</p>	<p>after sewing the final stitch.</p> <p>To know that a thimble can be used to protect my fingers when sewing.</p>	<p>of structure (and, therefore, they are the main shape used for windmills and lighthouses).</p> <p>To understand that axles are used in structures and mechanisms to make parts turn in a circle.</p> <p>To begin to understand that different structures are used for different purposes.</p> <p>To know that a structure is something that has been made and put together.</p>	<p>To know that a slider mechanism has a slider, slots, guides and an object.</p> <p>To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.</p>	
Topic Cycle B 2024-2025	Marvelous Transport!	Terrific Toys! (Then and now)	Going on a Safari!	To the Moon and the Stars!	Oh, we do like to be beside the seaside! (Assessments)	Pupil initiated:
Unit	<p>Mechanisms: Wheels and axles, Design a moving toy/vehicle.</p>	<p>Textiles: Designing and making puppets</p>	<p>Structures: Design and make a cage for a Bear to travel safely in.</p>	<p>Mechanism: Making a moving alien monster (adapt from kapow unit) Design and sew a rocket.</p>	<p>Food: a balanced diet. Design and make a picnic for a beach visit</p>	
Key Knowledge Progression	<p>To know that wheels need to be round to rotate and move.</p> <p>To understand that for a wheel to move it must be attached to a rotating axle.</p> <p>To know that an axle moves within an axle holder which is fixed to the vehicle or toy.</p>	<p>To know that 'joining technique' means connecting two pieces of material together.</p> <p>To know that there are various temporary methods of joining fabric by using staples, glue or pins.</p>	<p>To know that shapes and structures with wide, flat bases or legs are the most stable.</p> <p>To understand that the shape of a structure affects its strength.</p> <p>To know that materials can be manipulated to</p>	<p>To know that mechanisms are a collection of moving parts that work together as a machine to produce movement.</p> <p>To know that there is always an input and an output in a mechanism.</p>	<p>To know that 'diet' means the food and drink that a person or animal usually eats.</p> <p>To understand what makes a balanced diet.</p> <p>To know where to find the nutritional information on packaging.</p>	

	<p>To know that the frame of a vehicle (chassis) needs to be balanced.</p> <p>To know some real-life items that use wheels.</p>	<p>To understand that different techniques for joining materials can be used for different purposes.</p> <p>To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.</p> <p>To know that drawing a design idea is useful to see how an idea will look.</p>	<p>improve strength and stiffness.</p> <p>To know that a structure is something which has been formed or made from parts.</p> <p>To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</p> <p>To know that a 'strong' structure is one which does not break easily.</p> <p>To know that a 'stiff' structure or material is one which does not bend easily.</p>	<p>To know that an input is the energy that is used to start something working.</p> <p>To know that an output is the movement that happens as a result of the input.</p> <p>To know that a lever is something that turns on a pivot.</p> <p>To know that a linkage mechanism is made up of a series of levers.</p>	<p>To know that the five main food groups are.</p> <p>To understand that I should eat a range of different foods from each food group.</p> <p>To know that nutrients are substances in food that all living things need to make energy, grow and develop.</p> <p>To know that 'ingredients' means the items in a mixture or recipe.</p> <p>To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy.</p> <p>To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.</p>	
--	---	---	---	--	--	--

Design Technology Lower Key Stage 2 Years 3 & 4

National Curriculum:

When designing and making, pupils in KS2 should be taught to:

Design:

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make:

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate:

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge:

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

- apply their understanding of computing to program, monitor and control their products.

Cooking & Nutrition:

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

	Term 1	Term 2	Term 3	Term 4	Term 5 /6	July
Topic Cycle A 2023-2024	Savage Stone to Brilliant Bronze	Light of the World	What an incredible earth!	A clang and a bang! Music to my ears!	Pharaohs and Pyramids of the Nile (Assessments)	Pupil initiated:
Unit	Cooking & Nutrition Eating seasonally	Electrical systems: Torches	Mechanical systems: making a slingshot car	Digital world: Wearable technology	Textiles: Cross-stitch & applique	
Key Knowledge Progression	To know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth. To know that vegetables and fruit grow in certain seasons. To know that cooking instructions are known as a 'recipe'. To know that imported food is food that has been brought into the country.	To understand that electrical conductors are materials which electricity can pass through. To understand that electrical insulators are materials which electricity cannot pass through. To know that a battery contains stored electricity that can be used to power products. To know that an electrical circuit must be complete for electricity to flow. To know that a switch can be used to complete and break an electrical circuit.	To understand that all moving things have kinetic energy. To understand that kinetic energy is the energy that something (object/person) has by being in motion. To know that air resistance is the level of drag on an object as it is forced through the air. To understand that the shape of a moving object will affect how it moves due to air resistance.	To understand that, in programming, a 'loop' is code that repeats something again and again until stopped. To know that a micro:bit is a pocket-sized, codeable computer. To know that a simulator is able to replicate the functions of an existing piece of technology. To understand what is meant by 'point of sale display.' To know that CAD stands for 'Computer- aided design'. To know what a focus group is by taking part in one.	To know that appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric. To understand that a product's function relies on material choices. To identify and explain some materials and explain their aesthetic and/or functional properties.	
Topic Cycle B 2024-2025	Making my body work for me	The Frozen Kingdom	Rampaging Romans	Where will we find them?	Gods and Heroes (Assessments)	Pupil initiated:
Unit	Digital world: Mindful moments timer	Mechanical systems: Pneumatic toys (for Christmas)	Electrical systems: Electric Poster	Cooking & Nutrition Adapting a recipe	Structures: Pavilions	Textiles: Fastenings (Optional)

Key Knowledge Progression	<p>To understand what variables are in programming.</p> <p>To know some of the features of a Micro:bit.</p> <p>To know that an algorithm is a set of instructions to be followed by the computer.</p> <p>To know that it is important to check my code for errors (bugs).</p> <p>To know that a simulator can be used as a way of checking that your code works before installing it onto an electronic device.</p>	<p>To understand how pneumatic systems work.</p> <p>To understand that pneumatic systems can be used as part of a mechanism.</p> <p>To know that pneumatic systems operate by drawing in, releasing and compressing air.</p>	<p>To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit.</p> <p>To understand common features of an electric product (switch, battery or plug, dials, buttons etc.)</p> <p>To list examples of common electric products.</p> <p>To understand that an electric product uses an electrical system to work (function).</p> <p>To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits.</p>	<p>To know that the amount of an ingredient in a recipe is known as the 'quantity'.</p> <p>To know that it is important to use oven gloves when removing hot food from an oven.</p> <p>To know the following cooking techniques: sieving, creaming, rubbing method, cooling.</p> <p>To understand the importance of budgeting while planning ingredients for biscuits.</p>	<p>To understand what a frame structure is.</p> <p>To know that a 'free-standing' structure is one that can stand on its own.</p> <p>To know that a pavilion is a decorative building or structure for leisure activities.</p> <p>To know that cladding can be applied to structures for different effects.</p> <p>To know that aesthetics are how a product looks.</p>	<p>To know that a fastening is something that holds two pieces of material together.</p> <p>To know that different fastening types are useful for different purposes.</p> <p>To know that creating a mock-up (prototype) of their design is useful for checking ideas and proportions.</p>
---------------------------	---	--	--	--	---	--

Design Technology Upper Key Stage 2 Years 5 & 6						
	Term 1	Term 2	Term 3	Term 4	Term 5 /6	July
Topic Cycle A 2023-2024	It's time for a Disaster!	Victorian Children and Christmas	Animal, Vegetable or Mineral?	To be or not to be?	We have the Power to change! (Assessments)	Pupil initiated:
Unit	Structures –(Bridges) Adapt planning to design and make shelters (outdoor learning)	Electrical systems – Doodlers	Food: Come dine with me Designing a nutritious three course meal	Textiles: Waistcoats	Mechanical Systems: Automata toys	Digital world: Monitoring devices 3D CAD
Key Knowledge progression	To understand some different ways to reinforce structures. To understand how triangles can be used to reinforce bridges.	To know that, in a series circuit, electricity only flows in one direction. To know when there is a break in a series	To know that 'flavour' is how a food or drink tastes. To know that many countries have 'national dishes' which are	To understand that it is important to design clothing with the client/target customer in mind. To know that using a template (or clothing	To understand that the mechanism in an automata uses a system of cams, axles and followers. To understand that different shaped cams	To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record.

	<p>To know that properties are words that describe the form and function of materials.</p> <p>To understand why material selection is important based on their properties.</p> <p>To understand the material (functional and aesthetic) properties of wood.</p>	<p>circuit, all components turn off.</p> <p>To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin.</p> <p>To know a motorised product is one which uses a motor to function.</p>	<p>recipes associated with that country.</p> <p>To know that 'processed food' means food that has been put through multiple changes in a factory.</p> <p>To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides.</p> <p>To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).</p>	<p>pattern) helps to accurately mark out a design on fabric.</p> <p>To understand the importance of consistently sized stitches.</p>	<p>produce different outputs.</p> <p>To know that an automata is a hand-powered mechanical toy.</p> <p>To know that a cross-sectional diagram shows the inner workings of a product.</p>	<p>To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose.</p> <p>To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met.</p>
Topic Cycle B 2024-2025	Invade, Conquer Settle	We're all Wonders!	May the Force be with you!	Map Makers & Globe Trotters	Spies, Suspicions and Secrets (Assessments)	Pupil initiated:
Unit	Food: What could be healthier?	Textiles: Stuffed toys	Structure: Playground in space!	Digital world: Navigating the world Food around the world- cooking and preparing food from different places	Electrical systems: Steady hand game	Mechanical systems: Pop-up book
Key Knowledge	<p>To understand where meat comes from – learning that beef is from cattle and how beef is reared and processed, including key welfare issues.</p> <p>To know that I can adapt a recipe to make it healthier by substituting ingredients.</p> <p>To know that I can use a nutritional calculator to see how healthy a food option is.</p>	<p>To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric.</p> <p>To understand that it is easier to finish simpler designs to a high standard.</p> <p>To know that soft toys are often made by creating appendages separately and then attaching them to the main body.</p> <p>To know that small, neat stitches which are</p>	<p>To know that structures can be strengthened by manipulating materials and shapes.</p> <p>To understand what a 'footprint plan' is.</p> <p>To understand that in the real world, design can impact users in positive and negative ways.</p> <p>To know that a prototype is a cheap model to test a design idea.</p>	<p>To know that accelerometers can detect movement.</p> <p>To understand that sensors can be useful in products as they mean the product can function without human input.</p> <p>To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request.</p> <p>To know that 'multifunctional' means an object or product</p>	<p>To know that 'form' means the shape and appearance of an object.</p> <p>To know the difference between 'form' and 'function'.</p> <p>To understand that 'fit for purpose' means that a product works how it should and is easy to use.</p> <p>To know that 'form over purpose' means that a product looks good but does not work very well.</p>	<p>To know that mechanisms control movement.</p> <p>To understand that mechanisms can be used to change one kind of motion into another.</p> <p>To understand how to use sliders, pivots and folds to create paper-based mechanisms.</p> <p>To know that a design brief is a description of what I am going to design and make.</p>

	<p>To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.</p>	<p>pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.</p>		<p>has more than one function. To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.</p>	<p>To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. To understand the diagram perspectives 'top view', 'side view' and 'back'.</p>	<p>To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.</p>
--	--	---	--	--	---	--