

# Wortham Primary School



## Design & Technology Curriculum

<b>Class</b>	<b>Design, Make and Evaluate</b>	<b>Cooking and Nutrition</b>	<b>Design, Make and Evaluate</b>	<b>Textiles</b>
<b>Bumblebee class YR. R/1</b>	Making a kite	Stir fry	Structures	Making hand/finger puppets
<b>Hedgehog class Yr. 2/3</b>	Making a Vehicle – Wheels and Axels	Wortham Bakery	Moving Pictures - Lever and Sliders	Bookmark
<b>Barn Owl class Yr. 3/4</b>	Making a Photo Frame	Savoury Pastry Slice	Mechanics	Patchwork Blanket – Applique
<b>Otter class</b>	Programming Pioneers	Pasta Meal		



<b>Title</b>	<b>Making a Kite</b>
<b>Overview</b>	<p>The aim of this unit is to develop the children’s knowledge, understanding and skills needed to engage in designing and making. This unit will aim to allow children the opportunity to explore designs and evaluate these, before designing their own product, using a range of materials and tools and evaluating their own product. Children will be given the opportunity to explore structures and how they are able to make their kite stronger, stiffer and more stable.</p> <p>EYFS</p> <ul style="list-style-type: none"> <li>➤ Children can construct with a purpose in mind, selecting appropriate resources and adapting work where necessary.</li> <li>➤ Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> </ul>
<b>Vocabulary</b>	Kite, design, tools, resources, material, construct/build, fly, evaluate, colour, texture, strength, stiff, stable
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To understand what a kite is and how it is used.</li> <li>➤ To explain what they will be designing and making.</li> <li>➤ To represent their ideas for a kite through writing and drawing.</li> <li>➤ To choose suitable resources and tools.</li> <li>➤ To explore kite shapes and structures, linking to strength and stability</li> <li>➤ To construct a kite based on their own design.</li> <li>➤ To complete simple evaluations about their design.</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Discuss our own experiences of flying kites</li> <li>➤ Look at key events and individuals involved in the making of kites.</li> <li>➤ Investigate and analyse a range of existing kites, linking to strength and stability.</li> <li>➤ Plan and design a kite through drawings and discussion including the tools and materials needed</li> <li>➤ Construct a kite using tools and materials safely</li> <li>➤ Fly and evaluate their kite</li> <li>➤ Discussion throughout the designing, planning, making and evaluating processes</li> </ul>



<b>Title</b>	<b>Stir Fry</b>
<b>Overview</b>	<p>The aim of this unit is to provide children with the knowledge and understanding of the basic principles of nutrition and healthy eating. Children will be taught where food comes from. The children will be able to cut and prepare the vegetables for the stir fry.</p> <p>EYFS</p> <ul style="list-style-type: none"> <li>➤ Children know the importance of a healthy diet and are able to talk about ways to keep healthy.</li> <li>➤ Children show good control and coordination in small movements and can handle tools and equipment effectively and safely.</li> </ul>
<b>Vocabulary</b>	<p>Healthy eating/diet, ingredients, recipe, vegetables (onion, pepper, courgette, beansprouts), knife, chopping board, safety, taste, flavour</p>
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To understand where food comes from (plants and animals)</li> <li>➤ To identify the five food groups and understand that we need to have a healthy balanced diet</li> <li>➤ To explain why eating fruit and vegetables is important (Five portions of fruit and vegetables a day)</li> <li>➤ To explore and evaluate existing products.</li> <li>➤ To prepare and safely cut the vegetables.</li> <li>➤ To observe the stir fry being cooked and understand the process.</li> <li>➤ To taste and evaluate the stir fry.</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Sort food into the five food groups</li> <li>➤ Explore and taste a selection of vegetables, discussing the vegetables the taste, smell, texture and appearance.</li> <li>➤ Discuss our own experiences of eating fruit, vegetables and stir fries</li> <li>➤ Research different vegetables where they come from? Why they are good for you?</li> <li>➤ Grow beansprouts.</li> <li>➤ Look at different stir fry recipes and ingredients.</li> <li>➤ Write our own recipe for stir fry, discussing the reasoning for our recipe choice</li> <li>➤ Use tools and techniques to prepare vegetables safely and hygienically</li> <li>➤ Prepare, cook and taste the stir fry.</li> <li>➤ Discussion throughout the designing, planning, making and evaluating processes</li> </ul>



Title	<b>Structures</b>
<b>Overview</b>	<p>The aim of this unit is to develop the children's knowledge, understanding and skills needed to construct, develop and revise the structures of bridges and towers. Children will learn about the different types of bridges and towers and then make these using construction materials and joining techniques. Once made, children will evaluate and improve their structure to make it stronger and more stable.</p> <p>EYFS</p> <ul style="list-style-type: none"> <li>➤ Children can construct with a purpose in mind, selecting appropriate resources and adapting work where necessary.</li> <li>➤ Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> </ul>
<b>Vocabulary</b>	<p>Bridge, suspension bridge, arch bridge, beam bridge, cantilever bridge, ropes, chain, cables, pillars, vertical, horizontal, steel, iron, metal, tower, base, apex, stiffer, stable, stronger, joining together, rolling, folding, layering, rigid,</p>
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To know the purposes and properties of bridges and towers</li> <li>➤ To identify the different types of bridges and towers</li> <li>➤ To know and explore methods of building a bridge</li> <li>➤ To know and explore how bridges can be made stronger, stiffer and more stable</li> <li>➤ To know and explore methods of building a tower</li> <li>➤ To know and explore how towers can be made stronger, more stable and rigid</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Look at famous bridges and towers and identify their type and purpose</li> <li>➤ Discuss have we seen bridges and towers before, are there any in our local area?</li> <li>➤ Construct and evaluate their bridge and tower</li> <li>➤ Improve their design to make it stronger and more stable</li> <li>➤ Discussion throughout the designing, planning, making and evaluating processes</li> </ul>



<b>Title</b>	<b>Making hand/finger puppets</b>
<b>Overview</b>	<p>The aim of this unit is for children to handle, manipulate and enjoy using a range of materials. Children will first explore and evaluate existing puppets, before designing and making hand or finger puppets using a range of materials, tools and techniques.</p> <p>EYFS</p> <ul style="list-style-type: none"> <li>➤ Children can construct with a purpose in mind, selecting appropriate resources and adapting work where necessary.</li> <li>➤ Children show good control and coordination in small movements and can handle tools and equipment effectively and safely.</li> </ul>
<b>Vocabulary</b>	Textile, colour, material, puppets, purpose, audience, fabric, join, glue, sew, staple, strength, decoration, evaluate
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To sort materials into different colours and textures</li> <li>➤ To explore and evaluate a range of existing puppets, including purpose and intended audience</li> <li>➤ Draw on research to generate own ideas, drawing plan and deciding tools and materials necessary.</li> <li>➤ Identify/investigate ways of joining pieces of fabric and how that may strengthen the puppet.</li> <li>➤ Use tools safely to measure, mark out, cut, and join fabric to create and decorate a puppet to improve appearance</li> <li>➤ Evaluate your own design</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Explore different types of puppets – materials, form, purpose, including how they are joined together. Do you like them? Is there anything you don't like about them?</li> <li>➤ Explore ways of joining fabric – including sewing, gluing, stapling</li> <li>➤ Design a hand/finger puppet thinking about what / who it will be used for – think about material and appearance</li> <li>➤ Thread a needle and practice a running stitch</li> <li>➤ Begin to decide suitable order to complete tasks</li> <li>➤ Create puppet using joining skills</li> <li>➤ Add decorations to the puppet to improve appearance</li> <li>➤ Evaluate your puppet in relation to the design criteria</li> <li>➤ Discussion throughout the designing, planning, making and evaluating processes</li> </ul>



## Hedgehog Class

<b>Title</b>	<b>Making a Vehicle</b>
<b>Overview</b>	The aim of this unit is to for the children to learn how wheels and axles work Children will evaluate existing moving vehicles and mechanisms and to apply this knowledge to plan, design, make and evaluate their own vehicle with a moving mechanism.
<b>Vocabulary</b>	Wheels, axles, pneumatic systems, vehicles, rotate, movement, stationary, model
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To understand how wheels and axles work.</li> <li>➤ To understand how pneumatic systems work</li> <li>➤ To evaluate existing products against a given success criteria (consider the product sustainability)</li> <li>➤ To design a moving vehicle based upon a design criteria.</li> <li>➤ To confidently explain their design and design choices</li> <li>➤ To plan the process of making, considering the stages needed to make the product</li> <li>➤ To select tools and materials, using these safely with growing accuracy</li> <li>➤ To make and evaluate my moving vehicle.</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Look at a range of vehicles, including 'real life' vehicles, observing and discussing the mechanics of movement</li> <li>➤ Discuss how the mechanisms have been designed and made, including the materials used and the sustainability</li> <li>➤ Explore different materials to make the mechanism with, creating several models</li> <li>➤ Explain the choices of materials, tools, function and aesthetics</li> <li>➤ Receive a letter from a Toy Shop to ask them to make a new vehicle. They will send the children the success criteria.</li> <li>➤ Challenge – Can you include a pneumatic system?</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> <li>➤ Self and Peer Assessment according to the success criteria</li> </ul>



Title	<b>Bread and Rolls / Wortham Bakery</b>
Overview	The aim of this unit is for the children to learn about the process of making bread, particularly the process of kneading, proving and the effect yeast has on the dough. The children will also learn about the vast range of bread types that are on offer and the bread types from different countries.
Vocabulary	bloomer, farmhouse, chapatti, knot, crusty, granary, wholemeal, baguette, soda, bagel, tortilla, knead, prove, dough, yeast, pitta, plait, wrap
Key Learning Objectives	<ul style="list-style-type: none"> <li>➤ To know the five food groups and explain what each food group provides to keep us healthy (include water)</li> <li>➤ To know that food is grown, reared and caught across the world</li> <li>➤ To know about the range of bread types and the countries they originate from.</li> <li>➤ To evaluate a range of different types of bread and rolls.</li> <li>➤ To know that food is processed into ingredients</li> <li>➤ To understand the process of making bread.</li> <li>➤ To design my bread roll.</li> <li>➤ To confidently explain their design and design choices</li> <li>➤ To plan the process of making, considering the stages needed to make the product</li> <li>➤ To select tools and materials, using these safely with growing accuracy</li> <li>➤ To make and evaluate my bread roll.</li> </ul>
Suggested Learning Experiences	<ul style="list-style-type: none"> <li>➤ Tasting a range of bread, discussing taste, texture, smell and appearance</li> <li>➤ Collect data find the most popular bread type</li> <li>➤ Design their bread including clear labels on their design</li> <li>➤ Weigh and measure ingredients</li> <li>➤ Prepare and cook the bread safely and hygienically</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> <li>➤ Self and Peer Assessment according to the design/ success criteria</li> <li>➤ 'Bake off' have a special visitor to come in and blind taste the children's bread and vote for winner.</li> </ul>



Title	<b>Moving Pictures</b>
Overview	The aim of this unit is for the children to understand how levers and sliders work, experiment making their own and then apply this learning to create a picture that moves.
Vocabulary	Slider, lever, horizontal, vertical, handle, specification, slot, pivot
Key Learning Objectives	<ul style="list-style-type: none"> <li>➤ To explore and use a slider</li> <li>➤ To explore and use a lever</li> <li>➤ To design a moving picture</li> <li>➤ To confidently explain their design and design choices</li> <li>➤ To plan the process of making, considering the stages needed to make the product</li> <li>➤ To select tools and materials, using these safely with growing accuracy to make a moving picture</li> <li>➤ To evaluate finished design against the design criteria</li> </ul>
Suggested Learning Experiences	<ul style="list-style-type: none"> <li>➤ Explore how levers and sliders work.</li> <li>➤ Look at 'real life' levers and sliders</li> <li>➤ Make a clear design of the moving picture with labels</li> <li>➤ In the creation of sliders and levers learn how to score safely</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> <li>➤ Self and Peer Assessment according to the design/ success criteria</li> <li>➤ Link the theme of their picture to something relevant to the children / linked to another area of learning or allow the children complete freedom to choose their own theme.</li> </ul>





<b>Title</b>	<b>Book Mark</b>
<b>Overview</b>	The aim of this unit is for the children to develop their skills in modifying threads and fabrics. The children will then demonstrate these skills to create a book mark.
<b>Vocabulary</b>	Threads, fabric, material, needle, running stitch, knotting, fraying, fringing , pulling threads, twisting, plaiting, interfacing. Bookmark, tassel
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To explore how threads and fabrics can be modified (knotting, fraying, fringing, pulling threads, twisting, plaiting)</li> <li>➤ To design a bookmark for a target audience</li> <li>➤ To understand and draw the steps needed to make a bookmark</li> <li>➤ To make a bookmark using tools, joining and finishing techniques</li> <li>➤ To evaluate the completed bookmark</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Explore a range of existing bookmarks, explaining what they like and dislike about the products with reasoning</li> <li>➤ Discuss how the bookmarks have been designed and made, including the materials used and the sustainability</li> <li>➤ Discuss how we could make a material bookmark stronger, explore how interfacing works.</li> <li>➤ Measure and mark out to create the templates needed</li> <li>➤ Practice confidently threading a needle and using a running stitch</li> <li>➤ Construct the bookmark using materials, tools and techniques taught</li> <li>➤ Add finishing touches including a tassel/cord/plait</li> <li>➤ Self and Peer Assessment according to the success criteria</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> </ul>



Title	Picture Frames
<p><b>Overview</b></p>	<p>The aim of this topic is for children to learn about how photo frames are developed and made through a process of research, design, make and evaluate. Pupils will start by investigating a range of photo frames, identifying what makes them successful and completing market research. Moving forward, we will create a design specification that we will use to build our own frames. When building the frames we will learn to use a range of resources such as; saw, clamp, safety block, hot glue gun etc. and explore different joins. We will look at different ways of adding strength to our free standing frames.</p>
<p><b>Vocabulary</b></p>	<p>material, market research, mitre join, butt join, wood, cut, mark, groove, saw, glue, sandpaper, wood blocks, clamp, hot glue gun, design, design criteria, evaluate</p>
<p><b>Key Learning Objectives</b></p>	<ul style="list-style-type: none"> <li>➤ To understand that photo frames are made out of a variety of materials.</li> <li>➤ To complete market research (material, colour, size, join etc.)</li> <li>➤ To learn about the sustainability/recyclability and impact of using wood in a product</li> <li>➤ To start to understand how much products cost</li> <li>➤ Design a product which takes into account the needs of the users (market research)</li> <li>➤ Create own success / design criteria</li> <li>➤ Make a labelled drawing which shows the key features of a product and different views of the product</li> <li>➤ Select from and use a range of tools and equipment, including, saw, clamp, glue gun to construct the frame</li> <li>➤ Experiment with two joining techniques (Mitre and Butt)</li> <li>➤ To learn how to strengthen and reinforce their free standing frame</li> <li>➤ Use finishing techniques to improve the appearance of the frame</li> <li>➤ Evaluate the frame against original design criteria and identify some modifications they have made, including the safety of the product.</li> </ul>
<p><b>Suggested Learning Experiences</b></p>	<ul style="list-style-type: none"> <li>➤ Investigate a selection of photo frames, consider where and how it was designed and made, analysing their key features and understand their purpose also</li> <li>➤ Look at a range of existing frames, identify the cost and consider the sustainability and recyclability of the product</li> <li>➤ Complete Market Research, use the results to inform their design</li> <li>➤ Look at the sustainability of using wood</li> <li>➤ Learn about a manufacturing company or design and make frames</li> <li>➤ Consider the financial costing of making the product also – Can you make the frame within budget?</li> <li>➤ Children to explore the two joins and explore which method is best</li> <li>➤ Children to select from and use safely a range of materials and tools to construct their frame according to the functional properties and aesthetic qualities</li> <li>➤ Measure, mark out, cut and shape the wood to construct the frame</li> <li>➤ Children will be using tools with confidence ensuring a high quality finish</li> <li>➤ Opportunities to explain their choices of process, tools, materials linking to function and aesthetics</li> <li>➤ Evaluate their photo frame and others by considering the design criteria and meeting the user needs</li> <li>➤ Link to mathematics learning of measuring, angles and costing</li> <li>➤ Link to Science – materials</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> </ul>



<b>Title</b>	<b>Savoury Pastry Slice</b>
<b>Overview</b>	The aim of this unit is to prepare and cook a savoury puff pastry slice. Children will apply their knowledge of having a healthy, varied diet to plan, prepare and cook a healthy lunch option. Children will consider which food types are needed and which ingredients complement each other to create a tasty dish.
<b>Vocabulary</b>	puff pastry, sift, chill, round bladed knife, spring back, roll
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To know that a healthy balanced diet contains the five food groups and what this provides our bodies</li> <li>➤ To understand that food and drink contain different substances (nutrients, water, fibre and minerals) needed for health</li> <li>➤ To know that we have sweet and savoury foods</li> <li>➤ To plan a savoury pastry slice</li> <li>➤ To begin to understand that certain foods complement each other</li> <li>➤ To know that people have different diets (vegetarian, vegan etc.)</li> <li>➤ To understand the process of making fresh pastry</li> <li>➤ To make fresh pastry</li> <li>➤ To prepare the topping of pastry, selecting and using appropriate tools, equipment and techniques safely</li> <li>➤ To cook the pastry slice</li> <li>➤ To evaluate the completed dish</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Sort ingredients and foods into sweet and savoury</li> <li>➤ Explore combinations of ingredients and foods to find out which complement and begin to explain why</li> <li>➤ Complete a vote of design options to find out the preferred topping</li> <li>➤ Challenge of designing a topping for a vegetarian/vegan/gluten intolerance etc.</li> <li>➤ Create a cross sectional diagram of the planned pastry slice</li> <li>➤ Link to Mathematics (measuring ingredients, making pastry to size etc.)</li> <li>➤ Opportunities to explain their choices of process, tools, materials linking to function and aesthetics</li> <li>➤ Children will be self-selecting their ingredients, tools and techniques from a wider range using these confidently</li> <li>➤ Weigh and measure the time, dry ingredients and liquids needed</li> <li>➤ Prepare the area for cooking hygienically, ensuring hands are washed and all other cleanliness measures are completed</li> <li>➤ Link to Science – Changes throughout the process</li> <li>➤ Plan, prepare, cook and taste the completed pastry slice</li> <li>➤ Taste test, theirs and others pastry slice!</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> </ul>



<b>Title</b>	<b>Mechanics</b>
<b>Overview</b>	The aim of this unit is to understand and use mechanical systems. Children will have the opportunity to observe, explore and investigate existing gears, pulleys, cams, levers and linkages. Children will use their knowledge of how these mechanical systems work to build their own.
<b>Vocabulary</b>	Mechanical systems, levers, gears, pulleys, forces, levers, linkages, cams, (round, snail, eccentric, egg shapes, ellipse, hexagon) cam handle, slider, follower, rotate, movement, linear, follower cam and eccentric cam, touched wheels, direction, belt, speed, input, output,
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To learn about the different mechanical systems (levers, gears and pulleys)</li> <li>➤ To understand that mechanical and electrical systems have an input, process and output</li> <li>➤ To construct and explore levers</li> <li>➤ To construct and explore gears</li> <li>➤ To construct and explore pulleys</li> <li>➤ To learn about the mechanical systems of levers, linkages and cams</li> <li>➤ To construct and explore levers and linkages</li> <li>➤ To construct and explore cams</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Explore a range of existing products that use mechanical systems, disassemble the products to find out how it was made and how it works</li> <li>➤ Identify the mechanical system used in different products</li> <li>➤ Identify the pioneers of the mechanical systems and their ground breaking products</li> <li>➤ To identify the required tools, construction methods and method to assembly</li> <li>➤ To work in groups to develop and improve mechanical systems</li> <li>➤ Sketch ideas for creating the mechanical systems</li> <li>➤ Opportunities to explain their choices of process, tools, materials linking to function and aesthetics</li> <li>➤ Children will be self-selecting their materials, tools and techniques from a wider range</li> <li>➤ What would happen if... exploration opportunities</li> <li>➤ Look at the cartoonist Rube Goldberg's invention</li> <li>➤ Each lesson provides opportunities for rich discussion, playful exploration, collaboration and evaluations of own and others mechanisms using the success criteria</li> <li>➤ Links to Mathematics and Science – problem solving &amp; materials</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> </ul>



<b>Title</b>	<b>Patchwork Blanket</b>
<b>Overview</b>	<p>Within this textile unit of work, children will work together to create a class Patchwork blanket. Children will learn the decorative stitch of cross stitch and learn what applique is and understand the process of creating applique. These skills will then be used to design and create a patch, which will then be assembled to create a class patchwork blanket. There will then be an opportunity to reflect upon and evaluate their work from a given success criteria.</p>
<b>Vocabulary</b>	<p>Types of stiches – straight, zig, zag, whip/blanket, blind, button hole, overlock, forward and back stich, cross stitch, applique, shapes and patterns</p>
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To learn about the different types of stiches and their purposes</li> <li>➤ To learn the decorate stitch of cross stitch</li> <li>➤ To understand what applique is</li> <li>➤ To design a patch of a patchwork blanket from a given success criteria</li> <li>➤ To select materials and tools to, join and stitch a decorative patch</li> <li>➤ To evaluate my completed textile project</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Look at the different types of stiches and discuss the purposes of these, identify these stiches on objects</li> <li>➤ To look at examples of cross stitching</li> <li>➤ Learn and practice cross stitch</li> <li>➤ To look at examples of applique</li> <li>➤ Look at existing patch work blankets and understand the process of how they are constructed</li> <li>➤ Design brief could link to a chosen audience or celebrate a special event/anniversary/topic</li> <li>➤ Together create a design / success criteria</li> <li>➤ Measure, cut and join their materials</li> <li>➤ Select suitable stiches when hand stitching their patch</li> <li>➤ Links to Mathematics and Science – Measuring &amp; Materials</li> <li>➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes</li> <li>➤ Evaluate own and others patches, looking closely at the quality of the design, manufacture and fitness for purpose</li> </ul>



## Otter Class

<b>Title</b>	<b>Programming Pioneers</b>
<b>Overview</b>	Children will focus on designing, developing, testing and prototyping computer controlled electronic systems for rooms such as motion-sensor activated alarms, door buzzer entry systems or even 'smart home' automatic lights! Children will work with computing resources, electronic components and computer programming software and learn about influential computer scientists through history who have shaped the world around us.
<b>Vocabulary</b>	Embedded computer systems, microcontrollers, algorithms, computer hardware and software engineers, pelican crossing, components, automatic, debug, program, prototype models, 3-D CAD, memory chips, buzzers
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ To explain how computers and computer programs are used in a variety of products</li> <li>➤ To develop ideas for a product with an embedded computer system that controls it</li> <li>➤ To learn about the work of Alan Turing, Charles Babbage, Ada Lovelace, Steve Jobs and Steve Wozniak</li> <li>➤ To develop, model and communicate ideas for an embedded system which monitors and controls a door, a room or both.</li> <li>➤ To develop ideas for a product and start to write programs to monitor and control them</li> <li>➤ To model and communicate ideas, using either prototype models or computer-aided design</li> <li>➤ To evaluate your design for a computer-controlled system and consider the views of others to improve your work</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Make prototype models using DT materials OR 3-D CAD software to develop ideas and create an inspirational product</li> <li>➤ Use Raspberry Pis, Picoboard and Computer Programming Tools including Scratch</li> <li>➤ Know electrical circuits and components can be used to create functional products</li> <li>➤ Understand how complex electrical circuits and components work and use these in their products.</li> <li>➤ Create flow chart algorithms</li> <li>➤ Children will be debugging algorithms when problems occur</li> <li>➤ Communicate and develop ideas by discussing, annotating sketches/diagrams and written instructions</li> <li>➤ Create a step-by-step plan to use as a guide</li> <li>➤ Discussion throughout the designing, planning, making and evaluating processes</li> <li>➤ Critically evaluate own and others models &amp; products, including design, manufacture, fitness for purpose</li> <li>➤ Construct programmable prototypes of a pelican crossing</li> <li>➤ Write their own design brief</li> <li>➤ Look for Embedded Computer Systems in the world around us</li> <li>➤ Discuss Steve Job's launch of the Macintosh computer and how it was so inspiring</li> <li>➤ Evaluate existing products and also critically consider the impact these products have beyond their intended purpose (sustainability and recyclability)</li> <li>➤ Link to Mathematics and Science – Algorithms and construction &amp; knowledge of the world</li> <li>➤ Research pioneers and their products to support children in creating their own innovative, functional and appealing product</li> </ul>



<b>Title</b>	<b>Pasta Meal</b>
<b>Overview</b>	<p>In this unit, the children will about the versatile food of pasta. They will begin by learning about the history of pasta, including where and when it was first made and how it has changed over time. Before designing their own pasta sauce, the children will learn about seasonality and will explore the vegetables that are in season at the time. They will design their own pasta sauce around these vegetables. Finally, the children will learn the process of making and cooking pasta before making their own and evaluating their dish.</p>
<b>Vocabulary</b>	Seasonality, evaluate, dough, roll, shape, prepare, pasta
<b>Key Learning Objectives</b>	<ul style="list-style-type: none"> <li>➤ I understand how seasons may affect the food available and the term 'seasonality'</li> <li>➤ I know that recipes can be adapted to change the appearance, taste, texture and aroma of a dish</li> <li>➤ I can research the history of pasta, exploring key chefs and famous pasta dishes</li> <li>➤ I can learn how pasta is made</li> <li>➤ I can explore and evaluate different shapes of pasta and different pasta dishes</li> <li>➤ Formulate a step by step guide/recipe to make my dish</li> <li>➤ I can make my own pasta by confidently selecting appropriate tools, materials, components and techniques</li> <li>➤ Confidently demonstrate and explain how to safely and hygienically prepare food using a heat source where required</li> <li>➤ I can cook a sauce to add to my pasta, using seasonal ingredients</li> <li>➤ I can evaluate my pasta dish</li> </ul>
<b>Suggested Learning Experiences</b>	<ul style="list-style-type: none"> <li>➤ Research where and when pasta was first made. They will learn about how it has changed and developed over time.</li> <li>➤ Taste different pasta dishes and evaluate them. Explore why different pasta shapes are used in different pasta dishes.</li> <li>➤ Understand what the term 'seasonality' means and will sort foods into those that grow within each season. Use seasonal vegetables to make a pasta sauce.</li> <li>➤ Investigate how recipes can be adapted using herbs and spices, quantities, ingredients etc.</li> <li>➤ Apply in depth understanding of the five food groups in my meal planning</li> <li>➤ Discussion throughout the designing, planning, making and evaluating processes</li> <li>➤ Confidently use a wider range of techniques safely and accurately</li> <li>➤ Learn the process of making and cooking pasta</li> <li>➤ Make their own pasta and cut into shapes</li> <li>➤ Prepare and cook their own sauce</li> <li>➤ Critically evaluate own and others product, including design, and aesthetics and taste</li> <li>➤ Link to Mathematics and Science – measuring of ingredients and pasta sheets/shapes and science – changes</li> </ul>