Design & Technology Long-Term Overview at Woodstock CE Primary School

Cycle	Autumn		Spring		Summer	
	OUR COMMUNITY	FOLLOW THE STAR	ONCE UPON A RHYME	SPLISH SPLASH SPLOSH	AT THE BOTTOM OF THE GARDEN	WHEELS, WINGS AND OTHER THINGS
EYFS: Reception	**Technical Knowledge and Understanding** Safely use and explore a variety of materials, tools and techniques with colour, design, texture, form, and function. Share their creations, explaining the processes they have used. • To use junk modelling to explore design and function.		**Technical Knowledge and Understanding** Safely use and explore a variety of materials, tools and techniques with colour, design, texture, form, and function. Share their creations, explaining the processes they have used. • To use junk modelling to explore design and function. • To make a boat that floats.		**Technical Knowledge and Understanding** Safely use and explore a variety of materials, tools and techniques with colour, design, texture, form, and function. Share their creations, explaining the processes they have used. • To use junk modelling to explore design and function.	

KEY STAGE 1: Years 1 & 2

A

INTO THE WOODS

Aspect:	**Textiles**
Focus:	Creating patterns and templates, joining techniques
Outcome:	Design and make a hand or finger puppet
Significant Person Study:	Hazelle Hedges Rollins
Skills Development Prior Learning:	Explored and used different fabrics. Cut and joined fabrics with simple techniques. Thought about the user and purpose of products.

Overview:
In this unit the children will investigate a range of **hand and finger puppets**. They will look at how they are made, including the fabric used, joining techniques, fastening and decoration. They will investigate the properties of

PASSPORT TO BRITAIN

Aspect:	**Food and Nutrition**
Focus:	Preparing a simple dish safely and hygienically
Outcome:	Design and make a recipe from England/Wales/Scotland
Significant Person Study:	Jamie Oliver
Skills Development Prior Learning:	Experience of common ingredients, undertaking sensory activities i.e., appearance taste and smell. Experience of cutting and using appropriate utensils.

Overview:
In this unit the children will examine **a range of ingredients from the U.K** thinking about the appearance, texture, smell, and taste. They will evaluate a range of food products to help inform their design ideas. The

MEMORY BOX

Aspect:	**Mechanisms**
Focus:	Wheels and axles
Outcome:	Make a wooden wheeled Victorian road vehicle
Significant Person Study:	Karel Grod
Skills Development Prior Learning:	Explored moving vehicles through play. Gained some experience of designing, making and evaluating products for a specified user and purpose. Developed some cutting, joining and finishing skills with card.

Overview:
In this unit the children will explore and evaluate a range of **Victorian toys** and how they are on four wheels to carry a toy. Consider how the wheels move, how they are fixed

	different fabrics for the purpose of making a puppet and practise making templates. They will try out different joining techniques before going on to design their own puppet which they then make and evaluate. **Designing:** • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. **Making:** • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining, and finishing. • Select from and use textiles according to their characteristics. **Evaluating:** • Explore and evaluate a range of existing textile products relevant to the project being undertaken. **Technical Knowledge and Understanding** • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g., running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g., using painting, fabric crayons, stitching, sequins, buttons, and ribbons. • Know and use technical vocabulary relevant to the project	children will use focused practical tasks to practise using simple utensils to wash, peel, slice and squeeze. The children will design their recipe from England/Wales/Scotland. **Designing** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through investigating a variety of ingredients from the U.K. • Communicate these ideas through talk and drawings. **Making** • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. **Evaluating** • Taste and evaluate. **Technical Knowledge and Understanding** • Understand where a range of fruit and vegetables come from e.g., farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Plate. • Know and use technical and sensory vocabulary relevant to the project.	on, etc. They will draw examples of wheeled toys and label the main parts. The children will go on to use construction kits with wheels and axles learning how they are assembled as free or fixed axles. They will look at how to make axle holders and practise their skills of marking out, holding, cutting and joining. They will go on to design and make their own Victorian toys on wheels. **Designing** • To talk about the purpose of a wheel. • To talk about their own experience of vehicles with wheels. • To talk about designs for vehicles to carry a toy. • To make a drawing of a design for a four-wheel vehicle to carry a toy. **Making** • To experiment with construction kits to make an object that moves. • To attach wheels to a chassis using an axle with cotton reels and dowels. • To attach wheels to a chassis using an axle with straws and paper wheels/ circles. **Evaluating** • To suggest reasons why a wheel and axle wobbles based on hole position. • To talk about why their vehicle moves. • To say what is similar about their and another vehicle. • Evaluate their ideas throughout and their products against original criteria. **Technical Knowledge and Understanding** • Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. • Know and use technical vocabulary relevant to the project.

B	AROUND OUR WORLD	CASTLES & DRAGONS	FIGHTING FIT

Aspect:	Food and Nutrition
Focus:	Preparing a simple dish safely and hygienically, without using a heat source.
Outcome:	Design and make a smoothie or fruit salad.
Significant Person Study:	Nadia Hussain
Skills Development Prior Learning:	Experience of common fruit and vegetables, undertaking sensory activities i.e., appearance taste and smell. Experience of cutting soft fruit and vegetables using appropriate utensils.

Overview

In this unit the children will examine a range of ingredients from the U.K thinking about the appearance, texture, smell, and taste. They will evaluate a range of food products to help inform their design ideas. The children will use focused practical tasks to practise using simple utensils to wash, peel, slice and squeeze. The children will design their own **healthy drink or fruit salad** with seasonal fruits/veg from the U.K.

Designing

- Design appealing products for a particular user based on simple design criteria.
- Generate initial ideas and design criteria through investigating a variety of fruit and vegetables from the U.K.
- Communicate these ideas through talk and drawings.

Making

- Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.
- Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.

Aspect:	Forces (Kinetic energy, of motion)
Focus:	Build and popsicle stick catapult
Outcome:	Design and build a popsicle stick
Significant Person Study:	Isaac Newton
Skills Development Prior Learning:	Experience through play and experimental play

Overview

In this unit children will look at a range of **catapults** and how they work. Children will experiment with the idea behind a catapult and the purpose and why how they were used. Children to experiment with plastic spoons and how this could be used as a catapult. Can the children link technical vocabulary when investigating the ideas behind catapults?

https://www.science-sparks.com/how-to-make-a-catapult/

https://www.sciencebuddies.org/stem-activities/popsicle-stick-catapult

Designing

- Design a catapult. Use a prototype to test idea.
- Draw a design and use labels for a sketch.

Making

- Measure and mark out how many sticks will be used, joining, shaping and finishing techniques with construction materials.
- Basic understanding of what structures are and how they can be made stronger, stiffer and more stable through more or less sticks.
- Experiment how far the catapult will make lighter/heavier objects travel. Estimate and measure

Evaluating

- Evaluate how successful the catapult was. What could be kept or changed another time?

Technical Knowledge and Understanding

Aspect:	Mechanisms
Focus:	Slots and Joins
Outcome:	To design a moving story book
Significant Person Study:	Richard Reed, Adam Balon and Jon Wright
Skills Development Prior Learning:	Experience of reading books with slots and joins. Children to look at a range of these books and read them with the class and or partner.

Overview:

In this unit the children design a page of a moving story book. The children will draw background pictures, draw the moving parts, deciding whether to use a side-to-side slider or an up and down slider on each page.

Designing

- Design appealing products for a particular user based on simple design criteria.
- Generate initial ideas and design criteria through investigating slots and joins.
- Communicate these ideas through talk and drawings.

Making

- Use simple equipment, such as lolly sticks to make a moving part or turning wheel.

Evaluating

- Read the book and enjoy. Does the moving part work?

Technical Knowledge and Understanding

- 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.
- To know that a slider mechanism has a slider, slots, guides, and an object.
- To know that bridges and guides are bits of card that purposefully restrict the movement of the slider

	Evaluating • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. Give a name to the product. **Technical Knowledge and Understanding** • Understand where a range of fruit and vegetables come from e.g., farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Plate.	• Understand and use lever and pulley mechanisms. • Know and use technical vocabulary relevant to the project	

KEY STAGE 2: Years 3 & 4

A

FIELD TO FORK

Aspect:	Food and Nutrition
Focus:	Preparing a healthy dish, hygienically and safely, using mixing and baking.
Outcome:	Design and make a low budget meal/snack using root vegetables.
Significant Person Study:	Clare Smyth
Skills Development Prior Learning:	Experience of common vegetables, undertaking sensory activities i.e., appearance taste and smell. Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.

Overview:
In this unit the children will **examine a range of root vegetables** (linked to Gigantic Turnip) from the U.K. Children will be thinking about the appearance, texture, smell, and taste. They will evaluate a range of food products to help inform their design ideas. Children will look at how root vegetables can be used in a variety of ways to prepare low cost, healthy, budget meals/snacks. The children will use focused practical tasks to practise using simple utensils to wash, peel, slice, and squeeze. The children will learn to mix ingredients and bake, as appropriate.

Designing

TOMB RAIDERS

Aspect:	Mechanisms
Focus:	Creating movement by making a pulley or lever
Outcome:	Design and make a working Shaduf
Significant Person Study:	Lonnie Johnson (book in Year ¾ area)
Skills Development Prior Learning:	Experience of lever when designing a catapult in KS1. Experience of joins when designing and making a 3D structure. Experience of strengthening structures.

Overview:
In this unit the children will research and use historical knowledge to inform **designs for Shaduf**. Children will look how at pulleys and levers work to create movement for a particular purpose.

Designing
- To use research and historical knowledge to inform designs for a Shaduf.
- To use labelled sketches and instructions to plan a design for a Shaduf.
- To test different levers and pulleys for weight bearing.

Making
- To make levers and pulleys that can lift different loads from a surface.
- To vary the position of the pivot point to lift a load using a lever.
- To strengthen structures using previous learning.

Evaluating
- To compare Egyptian Shaduf designs with their own.

EUROPE EXPLORED

Aspect:	Structures
Focus:	Joins
Outcome:	Design and make a free-standing photo frame
Significant Person Study:	Andrew Smyth
Skills Development Prior Learning:	Experience of strengthening structures.

Overview:
Children will need to identify which material they will be using to create a strong, stable photograph frame. They will need to decide on the shape of their frame, i.e. square, rectangular, circular, and how they can manipulate their materials to achieve their desired shape. Children will need to make sensible decisions, i.e. using wood for a circular shaped frame would not be possible.

Designing
- When creating frames, children who have decided to create wooden structures will need to take caution when using saws and will need to be shown how to hold/use these correctly.
- Children who have decided to use paper/card will need to decide how they will be strengthening these materials to create a strong, durable photograph frame.
- Show children finished photo frame and materials we will use to make it. Ask children to think about how they will cut and join them. Show children a range of glues-which glue is the most suitable? Why? Consider strength, practicality.
- How will we the frame up? Where will the photo go?
- Children complete planning frame to explain how their frame will be constructed and decorated.

Making
- Make wooden frames, using triangles to strengthen corners.

	• Design appealing products for a particular user based on healthy low budget dish/snack. • Generate initial ideas and design criteria through investigating a variety of root vegetables grown in the U.K. • Communicate these ideas through talk and drawings. **Making** • Use utensils and equipment to e.g. peel, cut, slice, squeeze, grate, chop safely , mix and bake. • Select from a range of root vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. Evaluating • Taste and evaluate the range of dishes/snacks which can be made from root vegetables. **Technical knowledge and understanding** • Understand where a range of fruit and vegetables come from e.g., farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Plate. • Know and use technical and sensory vocabulary relevant to the project.	• To contrast Egyptian Shadufs with modern designs that use pulleys and levers. • To evaluate how well their design lifts varying loads. • To suggest ways their Shaduf could be altered to improve efficiency with the support of their peers. **Technical knowledge and understanding** • To recognise the difference between a lever and a pulley. • To understand how to adapt a lever and a pulley based on load weight • In technology, children will design and make a working Shaduf; using research to develop design criteria and create prototypes to test them for improvement. • Use research and develop design criteria to inform the design of innovative, functional Shadufs that are fit for purpose. • Generate, develop, model and communicate their ideas through discussion with peers and discuss any potential design issues, use annotated sketches, cross-sectional and prototypes to predict and discuss how viable their model will be. • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	• Make and test a variety of stands. • Measure and mark making on wood. **Evaluating** • Is the product fit for purpose? Does it suitably display artwork? Demonstrate the evaluation process to children using a photo frame and assess it against the original plan- how is the finished product different? Why? • Children to say how their frame differs from their original plan and give reasons why this has happened. How would they improve their work if they were to do it again? **Technical knowledge and understanding** • Use research and develop design criteria to inform the design of innovative, functional picture frames that are fit for purpose. • Generate, develop, model and communicate their ideas through discussion with peers and discuss any potential design issues, use annotated sketches, cross-sectional and prototypes to predict and discuss how viable their model will be. • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.

B

EARTH MATTERS

Aspect:	Mechanisms
Focus:	Pneumatics
Outcome:	To make a moving part for a Space – Bat – Angel -Dragon
Significant Person Study:	John Boyd Dunlop
Skills Development Prior Learning:	Explored simple mechanisms, such as sliders and levers, and simple structures. Learnt how materials can be joined to allow movement. Joined and combined materials using simple tools and techniques.

Overview

In this unit the children will investigate objects that use air to make them work e.g. bicycle pump, swimming aids. They will investigate a simple pneumatic system by joining a balloon to 5mm plastic tubing and using a washing up bottle asking and answering questions such as, what happens when you squeeze the bottle? What happens when you let go? Focused practical tasks will include assembling systems using syringes, tubing, balloons and plastics bottles to investigate the different effects they can create. They will go on to design a product that uses a pneumatic system to make part of it move e.g. Space – Bat – Angel – Dragon (linked to English The Iron Man).

Designing

- Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches and prototypes to develop, model and communicate ideas.

Making

- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.

CITY OF SPIRES

Aspect:	Textiles
Focus:	2D shape to 3D products
Outcome:	Design and make a class tapestry of Oxford Spires
Significant Person Study:	William Morris
Skills Development Prior Learning:	Have joined fabric in simple ways by gluing and stitching. Have used simple patterns and templates for marking out. Have evaluated a range of textile products.

Overview

In this unit the children will investigate a range of textile products that have a selection of stitches, joins, fabrics and finishing techniques. They will disassemble products to gain an understanding of 3shape, pattern and seam allowances. Through focused practical tasks they will practise different stitching techniques and will explore the appropriateness of different fabrics to create a class tapestry. They will use products they have disassembled to make 2D paper pattern templates. The children will go on to design and make their own textile building, producing mock ups and prototypes of their chosen product in paper

Designing

- Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
- Produce annotated sketches, prototypes, final product sketches and pattern pieces.

Making

- Plan the main stages of making.
- Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.
- Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern

INVADERS & RAIDERS

Aspect:	Electrical systems
Focus:	Simple circuit and switches
Outcome:	Design and make a product that lights up or makes a noise (Time Travelling Machine) Focus Inventor: Michael Faraday
Significant Person Study:	Thomas Eddison
Skills Development Prior Learning:	Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers. Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.

Overview

In this unit the children will explore different examples of battery powered products. They will consider where they are used, what the key features and components are, and how they work. They will investigate examples of switches which work in different ways. They will investigate these in simple circuits. The children will carry out focused practical tasks to explore how to make different circuits which make things light up or make a sound using their science knowledge. The children will design a product that has an electrical component. They will then make and evaluate their product against agreed design criteria.

Designing

- Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.

Making

- Order the main stages of making.

	• Select from and use finishing techniques suitable for the product they are creating. **Evaluating** • Investigate and analyse books, videos and products with pneumatic mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. • Technical knowledge and understanding • Understand and use pneumatic mechanisms. • Know and use technical vocabulary relevant to the project	**Evaluating** • Investigate a range of 3-D textile products relevant to the project. • Test their product against the original design criteria and with the intended user. • Take into account others' views. • Understand how a key event/individual has influenced the development of the chosen product and/or fabric. **Technical knowledge and understanding** • Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project.	• Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. Evaluating • Investigate and analyse a range of existing battery-powered products. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Technical knowledge and understanding** • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project.

KEY STAGE 2: Years 5 & 6

A

MEET THE GREEKS

Aspect:	Structure/CAMS
Focus:	Powered Structures and celebrating culture.
Outcome:	Design and build own Greek Water Clocks
Significant Person Study:	Yi Xing
Skills Development Prior Learning:	Experience of lever when designing a catapult in KS1 and Shaduf in lower KS2. Experience of joins when designing and making a 3D structure. Experience of strengthening structures.

Overview
Children will first learn what a water clock can and cannot do, then build their own simple water clock. Designs will be tested and improved before evaluating them.

Design:
- Children research Ancient Greek water clocks. What was its purpose? How did it work? What was it made form etc.
- They design a modern version of the product to sell
- Children take the views of users' into account when designing their clock.
- They produce clear step-by-step plans and present their ideas using exploded diagrams

Making:
- They select from a wide range of tools and equipment measuring accurately from a range of scales
- They test their design using models and improve design after testing.
- Their methods of working are precise so that their clocks have a high-quality finish.

Evaluating:

AMAZON ADVENTURE

Aspect:	Textiles
Focus:	Combining Fabrics and Celebrating Culture
Outcome:	Design and make a fabric version of Rousseau's Tiger in a Tropical Storm - link with artist study
Significant Person Study:	Lucienne Day
Skills Development Prior Learning:	Have joined fabric in simple ways by gluing and stitching. Have used simple patterns and templates for marking out. Have evaluated a range of textile products.

Overview
Children will study Rousseau's Tiger in a Tropical Storm and design their own version. Children will make a good, finished product which uses techniques that involve a number of steps and will formulate a step – by step guide for making.

Design:
- Children will study Rousseau's Tiger in a Tropical Storm and design their own version.
- Children present their ideas using annotated sketches
- Select from a wide range of tools and equipment
- Children select materials according to their aesthetic qualities.

Making:
- They measure accurately using a range of scales.
- Children learn appropriate stitches to help them combine their different materials together.
- Children make sure their product has a good finish so that a user will find it both useful and attractive.

Evaluating:

WAR & PEACE

Aspect:	Electronics
Focus:	Electronic systems
Outcome:	Design and built an alarm system to protect Blenheim Palace from intruders
Significant Person Study:	James Dyson & Capability Brown
Skills Development Prior Learning:	Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers. Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue. Made a circuit which makes noise or lights up for time travel machine in Year 3 and 4

Overview
Children draw on research and my own knowledge to design an alarm system to protect Blenheim from intruders

Design:
- Children draw on research and my own knowledge to design an alarm system to protect Blenheim from intruders
- They present their ideas with prototypes and cross-sectional diagrams
- Make design decisions that take into account constraints, such as time, resources and cost.

Making:
- Produce appropriate lists of tools, equipment and materials needed
- Formulate step by step plans to make
- They make precise measurements so that joins, holes and openings are in exactly the right place.

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They evaluate their designs based on their original design criteria.

Technical knowledge and understanding

Generate, develop, model and communicate their ideas through discussion with peers and discuss any potential design issues, use annotated sketches, cross-sectional and prototypes to predict and discuss how viable their model will be.

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They evaluate their designs based on their original design criteria.

Technical knowledge and understanding

Know how to strengthen, stiffen and reinforce existing fabrics.
Understand how to securely join two pieces of fabric together.
Understand the need for patterns and seam allowances.
Know and use technical vocabulary relevant to the project.

<table>
<tr><td>Aspect:</td><td>Food Technology</td></tr>
<tr><td>Focus:</td><td>Adapt Recipes & understanding ingredients and their origin</td></tr>
<tr><td>Outcome:</td><td>Make comparisons between traditional/non-traditional recipes for Mayan brownies</td></tr>
<tr><td>Significant Person Study:</td><td>William Harcourt-Cooze</td></tr>
<tr><td>Skills Development Prior Learning:</td><td>Experience of common baking techniques, undertaking sensory activities i.e., appearance taste and smell.
Use a range of utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely, mix, stir and bake. Combine ingredients and understand the impact of temperature on products. Under/over baking.</td></tr>
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Overview
Children research the Mayans and the history of chocolate during Humanities. Children will learn that recipes can be adapted to change the appearance, taste, texture, and aroma. Children will carry out surveys and interviews with other classes to understand lies/dislikes and reasons for this.
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When choosing materials, they consider a number of factors, such as cost, appeal and suitability
They use their science skills to alter the way their electrical product behaves
They use precise electrical connections.
Their final alarm has a high degree of precision and can do the intended job well

Evaluating:

They test and evaluate their products in the context of their intended use

Technical knowledge and understanding

Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.
Apply their understanding of computing to program and control their products.
Know and use technical vocabulary relevant to the project.

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		Design: Children to complete research on the Mayans and the history of chocolate. Make design decisions considering availability of resources, costing etc. How will the traditional brownies be changed? Taste, appearance, texture - different flour/sugars? **Making:** They then make their brownies and consider additional traditional flavours which could be incorporated. **Evaluating** Design a questionnaire/survey/interviews. Evaluate likes/dislikes and how product could be adapted for the future if they were to sell the products. How cost effective are they? **Technical knowledge and understanding** • Understand where a range of foods come from • Understand and use basic principles of a healthy and varied diet to prepare dishes • Know and use technical and sensory vocabulary relevant to the project.	

B	RULE BRITANNIA	IN THE BEGINNING	GOING GLOBAL

Aspect:	Structures
Focus:	Joins
Outcome:	Design and make a Brunel inspired bridge
Significant Person Study:	Isambard Kingdom Brunel & John Vanbrugh
Skills Development Prior Learning:	Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials. Basic understanding of what structures are and how they can be made stronger, stiffer and more stable.

Overview
Children research different engineering achievements by Brunel and they **design new Brunel inspired bridge** for their chosen purpose

Design:
- Children research different engineering achievements by Brunel
- They design new Brunel inspired bridge for their chosen purpose
- They produce clear step-by-step plans

Making:
- They select from a wide range of tools and equipment to produce their model designs
- Children measure accurately from a range of scales and select materials according to their aesthetic qualities
- Their methods of working are precise so that their products have a high-quality finish.

Evaluating:
- They evaluate their designs based on the original design criteria

Aspect:	Mechanisms
Focus:	CAMS
Outcome:	Design and make a moving model to explore the harsh terrain and surface of Mars.
Significant Person Study:	Joan Higginbotham
Skills Development Prior Learning:	Experience of axles, axle holders and wheels that are fixed or free moving. Basic understanding of different types of movement. Experience of cutting and joining techniques with a range of materials including card, plastic and wood. An understanding of how to strengthen and stiffen structures.

Overview
In this unit the children investigate different types of movement: rotary, oscillating and reciprocating. They explore different products and **toys that use Cam mechanisms** and explore how they are used in the other products/industries. The children go on to use pre-cut cams to observe movement and use a range of tools accurately and safely. They develop the skills of marking, cutting, shaping and joining. The children go on to design and make their own model with a cam mechanism, considering how it will move and also the finishing techniques they will use to create the finished product.

Designing
- Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide their thinking.

Aspect:	Food Technology
Focus:	To make a starter, main course or dessert
Outcome:	Design and make a recipe using ingredients from around the world
Significant Person Study:	Rick Stein
Skills Development Prior Learning:	Experience of common fruit/vegetables, undertaking sensory activities i.e., appearance taste and smell. Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely, mix, stir and bake. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.

Overview
In this unit of **Come Dine with Me,** children will use three ingredients to make three courses. To know that 'flavour' is how a food or drink tastes. To know that many countries have 'national dishes' which are recipes associated with that country. To know that 'processed food' means food that has been put through multiple changes in a factory. To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork). Children will research and write their recipe out to make their course, demonstrating an understanding of the key ingredient.

Designing
- Use research and develop design criteria to inform the design of innovative, functional, appealing

	Technical knowledge and understanding • Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project	• Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Children take the views of users' into account when designing their Mars moving model. **Evaluating** • Compare the final product to the original design specification. • Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. • Investigate famous manufacturing and engineering companies relevant to the project **Technical knowledge and understanding** • Understand that mechanical systems have an input, process and an output. • Understand how cams can be used to produce different types of movement and change the direction of movement. • Know and use technical vocabulary relevant to the project.	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 **Making** • 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. **Evaluating** • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work **Technical knowledge and understanding** • Following a recipe, including using the correct quantities of each ingredient and adapting the recipe based on their prior research. • Writing a recipe: explaining the key steps, method and the ingredients needed. • Explaining where certain foods come from before they reach the supermarket and explaining what impact different methods of farming have on the wider world.