



EYFS – Reception Class						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Me and My Family	Light Up the Sky	Starry Night	Perranporth My Home	Sunshine and Sunflowers	Who lives in a Rockpool?
Physical Development Learning and Skills	<ul style="list-style-type: none"> • Playdough birthday cakes and candles • Using various one handed tools • Writing name • Make paper chains • Birthday party games (musical statues) • Wrap birthday presents • Build confidence in outdoor area 	<ul style="list-style-type: none"> • Threading leaves and conkers • Picking up autumn objects using tongs • PE- Pretending to be autumn leaves, fireworks • Harvest dance • Kneading dough • Autumn playdough • Cutting, sticking and writing– Book making 	<ul style="list-style-type: none"> • Star dances– shooting, falling, rockets. • When I was one, up in the Galaxy (Real PE)- actions and dance • Moon Adventure– Real PE– Jumping, balancing, landing 	<ul style="list-style-type: none"> • Playdough pasties– rolling and crimping • Cornish Dance • Pirate dances and songs • Building and creating Cornish and Pirate craft. • Making Pirate ships in the outside area • Sand and water play in outside area 	<ul style="list-style-type: none"> • Planting– using tools • Moving like different animals • Healthy and unhealthy foods, balanced diet • Use of one handed tools– pencils for writing, scissors for cutting 	<ul style="list-style-type: none"> • Physically sorting materials • Using litter pickers • Observe safe and hygienic practices when handling rubbish. • Use tools effectively and independently when making and creating, including pencils to form letters correctly • Sandcastles on the beach.
Expressive Art and Design Learning and Skills	<ul style="list-style-type: none"> • Self portraits—using mirrors to examine face carefully • Hand printing • Printing wrapping paper • Singing ‘Happy Birthday’ • Decorating birthday cards– cut and stick • Paint family picture • Home corner role play 	<ul style="list-style-type: none"> • Observational drawing of Autumn objects • Clay hedgehog and a nest for them to hibernate in • Wax resist technique– Fireworks pictures. • Design a rangoli pattern– sand art/ coloured rice • Craft activities related to different celebrations– Fireworks in a glass 	<ul style="list-style-type: none"> • -Role playing the story Whatever Next– provide large cardboard boxes and other resources. • -Painting night time pictures using different techniques. • Star constellations– sparkly gel pens, small sticky dots and stars, silver and white paint 	<ul style="list-style-type: none"> • Painting Cornish flags • Painting daffodils • Pirate role play, role play/ retell the story of St Piran • Alfred Wallis– artist study– Tate website 	<ul style="list-style-type: none"> • Painting animals, observational drawing of fruit, finger painting caterpillars/ sponge printing caterpillars, wax resist castle in the clouds pictures. • Observational drawing and painting of flowers • Vincent Van Gogh study– Sunflowers painting. 	<ul style="list-style-type: none"> • Recycled materials craft • ‘Under the sea’ art and craft– paper plate art, paper bag art, jelly fish, wax resist paintings, dioramas. • Transient art with natural beach objects– collaborative art • Artist Study– Tony Plant– Sand art

Year 1 Autumn Term

	AUTUMN 1 st Half	
Theme	Structures – Design, Make and Evaluate a Windmill	
British Key Question	What toys have British children played with in the last 100 years?	
Addressing Stereotypes	Should there be girl toys and boy toys? Or can we enjoy whichever toys we like?	
British Values	Democracy – Children sharing their views on toys they like and explaining why Rule of Law – What rules should we have in caring for our toys? Individual Liberty – Is it okay to like toys that your friends might not? Mutual Respect and Tolerance – Children to understand and respect the differing opinions of others.	
Design Technology (NC subject content covered)	<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. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Identify some features that would appeal to the client (a mouse) and create a suitable design. Explain how their design appeals to the mouse. Make stable structures, which will eventually support the turbine, out of card, tape and glue. Make functioning turbines and axles that are assembled into the main supporting structure. Say what is good about their windmill and what they could do better. 	
Key Skills and Knowledge	Structures – design, make and evaluate a Windmill	
	Key Skills: <ul style="list-style-type: none"> Learning the importance of a clear design criteria. Including individual preferences and requirements in a design. Making stable structures from card, tape and glue. Learning how to turn 2D nets into 3D structures. Following instructions to cut and assemble the supporting structure of a windmill. Making functioning turbines and axles which are assembled into a main supporting structure. 	Key Knowledge: <ul style="list-style-type: none"> Learning the importance of a clear design criteria. Including individual preferences and requirements in a design. Making stable structures from card, tape and glue. Learning how to turn 2D nets into 3D structures. Following instructions to cut and assemble the supporting structure of a windmill. Making functioning turbines and axles which are assembled into a main supporting structure.
Prior Learning	<ul style="list-style-type: none"> Use of one handed tools– pencils for writing, scissors for cutting Decorating birthday cards– cut and stick Building and creating Cornish and Pirate craft. 	

Phase 1	Phase 1: Designing the structure <ul style="list-style-type: none"> I can include individual preferences and requirements in my design. 		
Phase 2	Phase 2: Assembling the structure <ul style="list-style-type: none"> I can make a stable structure. 		
Phase 3	Phase 3: Assembling the windmill <ul style="list-style-type: none"> I can assemble the components of my structure 		
Phase 4	Phase 4: Testing and evaluating <ul style="list-style-type: none"> I can evaluate my project and adapt my design. 		
End Points	<ul style="list-style-type: none"> Make a stable structure, to support a turbine. Make a functioning turbine and axle. 		
Vocabulary	<ul style="list-style-type: none"> ➤ axle ➤ bridge ➤ design ➤ design criteria ➤ model ➤ net ➤ packaging 	<ul style="list-style-type: none"> ➤ structure ➤ template ➤ unstable ➤ stable ➤ strong ➤ weak 	

Year 1 Spring Term

	Spring 2 nd Half	
Theme	Textiles – Design and Make a Hand Puppet	
British Key Question	What are Britain’s endangered animals? What can we do to help endangered animals in Britain?	
Addressing Stereotypes	Can vets and zoo keepers be men and women?	
British Values	Democracy – Vote to support an endangered animal (fundraiser?) Rule of Law – Laws about keeping pets in the UK. Individual Liberty – Children to talk about their endangered animal. Mutual Respect and Tolerance – Children to understand and value the differing opinions of others.	
Design Technology (NC subject content covered)	<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. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Join fabrics together using pins, staples or glue. Design a puppet and use a template. Join their two puppets’ faces together as one. Decorate a puppet to match their design 	
Key Skills and Knowledge	Textiles – design, make and evaluate a Hand Puppet	
	Key Skills: <ul style="list-style-type: none"> Using a template to create a design for a puppet. Cutting fabric neatly with scissors. Using joining methods to decorate a puppet. Sequencing steps for construction. Reflecting on a finished product, explaining likes and dislikes. 	Key Knowledge: <ul style="list-style-type: none"> To know that ‘joining technique’ means connecting two pieces of material together. To know that there are various temporary methods of joining fabric by using staples, glue or pins. To understand that different techniques for joining materials can be used for different purposes. To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. To know that drawing a design idea is useful to see how an idea will look.
Prior Learning	Prior Learning	
Phase 1	Phase 1	Phase 1: Joining fabrics <ul style="list-style-type: none"> I can join fabrics together using different methods
Phase 2	Phase 2	Phase 2: Designing my puppet <ul style="list-style-type: none"> I can use a template to create my design

Phase 3	Phase 3	Phase 3: Making and joining my puppet <ul style="list-style-type: none"> I can join two fabrics together accurately 	
Phase 4	Phase 4	Phase 4: Decorating my puppet <ul style="list-style-type: none"> To embellish my design using joining methods 	
End Points	End Points	<ul style="list-style-type: none"> Join fabrics together using pins, staples or glue. 	
	Vocabulary	<ul style="list-style-type: none"> ➤ decorate ➤ design ➤ fabric ➤ glue ➤ model 	<ul style="list-style-type: none"> ➤ hand puppet ➤ safety pin ➤ staple ➤ stencil ➤ template

Year 1 Summer Term

	Summer 2 nd Half	
Theme	Food - Cooking and nutrition: Fruit and Vegetable Smoothies	
British Key Question	How can the British community work together to prevent disasters?	
Addressing Stereotypes	Role of woman in today's firefighting community.	
British Values	Democracy – Can you start a fire wherever you like? Rule of Law – Are you allowed to burn anything? Individual Liberty –How do you like to keep warm? Mutual Respect and Tolerance – Children to understand and value the differing opinions of others.	
Design Technology (NC subject content covered)	<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. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Describe fruits and vegetables and explain why they are a fruit or a vegetable. Name a range of places that fruits and vegetables grow. Describe basic characteristics of fruit and vegetables. Prepare fruits and vegetables to make a smoothie. 	
Key Skills and Knowledge	Food - Cooking and nutrition: Fruit and Vegetables Smoothies	
	Key Skills: <ul style="list-style-type: none"> Designing smoothie carton packaging by-hand or on ICT software. Chopping fruit and vegetables safely to make a smoothie. Identifying if a food is a fruit or a vegetable. Learning where and how fruits and vegetables grow. Tasting and evaluating different food combinations. Describing appearance, smell and taste. Suggesting information to be included on packaging 	Key Knowledge: <ul style="list-style-type: none"> 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 a blender is a machine which mixes ingredients together into a smooth liquid. To know that a fruit has seeds and a vegetable does not. To know that fruits grow on trees or vines. To know that vegetables can grow either above or below ground. To know that vegetables can come from different parts of the plant.
Prior Learning	Prior Learning	

Phase 1	Phase 1	Phase 1: Fruit or vegetable? • I can identify if a food is a fruit or a vegetable	
Phase 2	Phase 2	Phase 2: Where fruit and vegetables grow • I can identify where plants grow and which parts we eat	
Phase 3	Phase 3	Phase 3: Smoothie ingredients tasting • I can taste and compare fruit and vegetables	
Phase 4	Phase 4	Phase 4: Making smoothies • I can make a fruit and vegetable smoothie	
End Points	End Points	• Chopping fruit and vegetables safely to make a smoothie.	
	Vocabulary	<ul style="list-style-type: none"> ➤ fruit ➤ vegetable ➤ seed ➤ leaf ➤ root ➤ stem 	<ul style="list-style-type: none"> ➤ smoothie ➤ healthy ➤ carton ➤ design ➤ flavour ➤ peel ➤ slice




Design Technology Scheme of Work

Perranporth C P School



Year 2 Autumn Term

Autumn 2nd Half

Theme	Structures – Baby Bear’s Chair	
British Key Question	Who sailed the seas?	
Addressing Stereotypes	Why were only men allowed onboard ships? - (explore and challenge superstition that women were bad luck aboard a ship).	
British Values	<p>Democracy – Was there democracy on board ships? How did the hierarchy work?</p> <p>Rule of Law – How was order kept on board ships? Why would rules onboard ship be especially important? What could go wrong?</p> <p>Individual Liberty – What freedoms did sailors actually have? Were there laws of the sea?</p> <p>Mutual Respect and Tolerance – Explore the diversity of sailors, made up of multiple nationalities and religions.</p>	
Design Technology (NC subject content covered)	<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. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Build structures, exploring how they can be made stronger, stiffer and more stable. Evaluate their ideas and products against design criteria. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Identify man-made and natural structures. Identify stable and unstable structural shapes. Contribute to discussions. Identify features that make a chair stable. Work independently to make a stable structure, following a demonstration. Explain how their ideas would be suitable for Baby Bear. Produce a model that supports a teddy, using the appropriate materials and construction techniques. Explain how they made their model strong, stiff and stable. 	
Key Skills and Knowledge	Structures – design, make and evaluate a chair for Baby Bear	
	<p>Key Skills:</p> <ul style="list-style-type: none"> Generating and communicating ideas using sketching and modelling. Learning about different types of structures, found in the natural world and in everyday objects. Making a structure according to design criteria. Creating joints and structures from paper/card and tape. Building a strong and stiff structure by folding paper. Exploring the features of structures. Comparing the stability of different shapes. 	<p>Key Knowledge:</p> <ul style="list-style-type: none"> To know that shapes and structures with wide, flat bases or legs are the most stable. To understand that the shape of a structure affects its strength. To know that materials can be manipulated to improve strength and stiffness. To know that a structure is something which has been formed or made from parts. To know that a ‘stable’ structure is one which is firmly fixed and unlikely to change or move. To know that a ‘strong’ structure is one which does not break easily. To know that a ‘stiff’ structure or material is one which does not bend easily.

	<ul style="list-style-type: none"> • Testing the strength of their own structures. • Identifying the weakest part of a structure. • Evaluating the strength, stiffness and stability of their own structure. 	
Prior Learning	Prior Learning: Children have completed a structures unit of learning in Year 1 when making a windmill. Children learned to: <ul style="list-style-type: none"> • Make a stable structure, to support a turbine. • Make a functioning turbine and axle. 	
Phase 1	Phase 1	Phase 1: Exploring stability I can explore the concept and features of structures and the stability of different shapes
Phase 2	Phase 2	Phase 2: Strengthening materials I can understand that the shape of the structure affects its strength
Phase 3	Phase 3	Phase 3: Making Baby Bear's chair I can make a structure according to design criteria
Phase 4	Phase 4	Phase 4: Fixing and testing Baby Bear's chair I can produce a finished structure and evaluate its strength, stiffness and stability
End Points	End Points	<ul style="list-style-type: none"> • To understand that the shape of the structure affects its strength • To make a structure according to design criteria
Vocabulary		<div> <ul style="list-style-type: none"> ➤ design criteria ➤ man-made ➤ natural ➤ properties </div> <div> <ul style="list-style-type: none"> ➤ structure ➤ stable ➤ shape ➤ model ➤ test </div>

Year 2 Spring Term

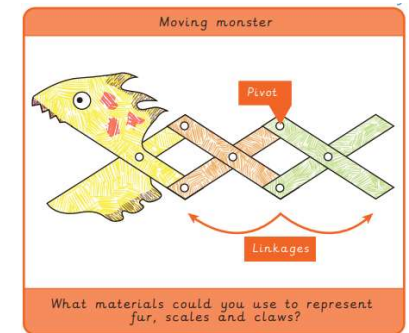
Spring 2nd Half

Theme	Mechanisms – Design, Make and Evaluate a Fairground Wheel	
British Key Question	How has industry in Perranporth changed?	
Addressing Stereotypes	Did women help fishermen? What was the role of a fishwife? What do fishermen/women look like? Where are they from? Explore that fishing is a global industry and need.	
British Values	Democracy – Who makes decisions in Perranporth? (broadly explore Parish Council) Rule of Law – What rules would help to make Perranporth better? Individual Liberty – Who protects us in Perranporth? Mutual Respect and Tolerance – Is it a good thing that Perranporth has so many visitors?	
Design Technology (NC subject content covered)	<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. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. 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. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Design and label a wheel. Consider the designs of others and make comments about their practicality or appeal. Consider the materials, shape, construction and mechanisms of their wheel. Label their designs. Build a stable structure with a rotating wheel. Test and adapt their designs as necessary. Follow a design plan to make a completed model of the wheel. 	
Key Skills and Knowledge	Mechanisms – Design, Make and Evaluate a Fairground Wheel	
	Key Skills: <ul style="list-style-type: none"> Selecting a suitable linkage system to produce the desired motions. Designing a wheel. Selecting appropriate materials based on their properties. Selecting materials according to their characteristics. Following a design brief. Evaluating different designs. Testing and adapting a design. 	Key Knowledge: <ul style="list-style-type: none"> To know that different materials have different properties and are therefore suitable for different uses. To know the features of a Ferris wheel include the wheel, frame, pods, a base, an axle and an axle holder. To know that it is important to test my design as I go along so that I can solve any problems that may occur.

Prior Learning	Prior Learning	Prior Learning: Children have not completed a mechanism unit before but, during their Year 1 learning on structures of windmills children learned to: <ul style="list-style-type: none"> Make a functioning turbine and axle. 	
Phase 1	Phase 1	Phase 1: Design a Ferris wheel <ul style="list-style-type: none"> I can explore wheel mechanisms and design a wheel 	
Phase 2	Phase 2	Phase 2: Planning the build <ul style="list-style-type: none"> I can select appropriate materials 	
Phase 3	Phase 3	Phase 3: Building the frame and wheels <ul style="list-style-type: none"> I can build and test a moving wheel 	
Phase 4	Phase 4	Phase 4: Adding pods and decoration <ul style="list-style-type: none"> I can make and evaluate a structure with a rotating wheel 	
End Points	End Points	<ul style="list-style-type: none"> To select appropriate materials To build and test a moving wheel 	
	Vocabulary	<ul style="list-style-type: none"> ➤ design ➤ design criteria ➤ wheel ➤ Ferris wheel 	<ul style="list-style-type: none"> ➤ pods ➤ axle ➤ axle holder ➤ frame ➤ mechanism

Year 2 Summer Term


	Summer 1 st Half	
Theme	Mechanisms: Making a moving monster	
British Key Question	How has industry in Perranporth changed?	
Addressing Stereotypes	Did women help fishermen? What was the role of a fishwife? What do fishermen/women look like? Where are they from? Explore that fishing is a global industry and need.	
British Values	Democracy – Who makes decisions in Perranporth? (broadly explore Parish Council) Rule of Law – What rules would help to make Perranporth better? Individual Liberty – Who protects us in Perranporth? Mutual Respect and Tolerance – Is it a good thing that Perranporth has so many visitors?	
Design Technology (NC subject content covered)	<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. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Identify the correct terms for levers, linkages and pivots. Analyse popular toys with the correct terminology. Create functional linkages that produce the desired input and output motions. Design monsters suitable for children, which satisfy most of the design criteria. Evaluate their two designs against the design criteria, using this information and the feedback of their peers to choose their best design. Select and assemble materials to create their planned monster features. Assemble the monster to their linkages without affecting their functionality. 	
Key Skills and Knowledge	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">Mechanisms – design, make and evaluate a Moving Monster</p> <p>Key Skills:</p> <ul style="list-style-type: none"> Learning the importance of a clear design criteria. Including individual preferences and requirements in a design. Making stable structures from card, tape and glue. Learning how to turn 2D nets into 3D structures. Following instructions to cut and assemble the supporting structure of a windmill. Making functioning turbines and axles which are assembled into a main supporting structure. </div> <div style="width: 48%;"> <p>Key Knowledge:</p> <ul style="list-style-type: none"> Learning the importance of a clear design criteria. Including individual preferences and requirements in a design. Making stable structures from card, tape and glue. Learning how to turn 2D nets into 3D structures. Following instructions to cut and assemble the supporting structure of a windmill. Making functioning turbines and axles which are assembled into a main supporting structure. </div> </div>	



Prior Learning	Prior Learning: Children have completed a mechanisms unit of learning in Year 2 when making a Fairground Wheel. Children learned to: <ul style="list-style-type: none"> To select appropriate materials To build and test a moving wheel 	
Phase 1	Phase 1: Pivots, levers and linkages <ul style="list-style-type: none"> To look at objects and understand how they move 	
Phase 2	Phase 2: Making linkages <ul style="list-style-type: none"> To look at objects and understand how they move 	
Phase 3	Phase 3: Designing my monster <ul style="list-style-type: none"> To explore different design options 	
Phase 4	Phase 4: Making my monster <ul style="list-style-type: none"> To make a moving monster with a linkage 	
End Points	<ul style="list-style-type: none"> To know that a linkage mechanism is made up of a series of levers. To create a moving linkage. 	
Vocabulary	<ul style="list-style-type: none"> ➤ axle ➤ bridge ➤ design ➤ design criteria ➤ model ➤ net ➤ packaging 	<ul style="list-style-type: none"> ➤ structure ➤ template ➤ unstable ➤ stable ➤ strong ➤ weak



Year 3 Autumn Term

	Autumn 2 nd Half	
Theme	Cooking & Nutrition – Eating Seasonally	
British Key Question	Why live in Natural Disaster Hotspots? Would you?	
Addressing Stereotypes	The Firework Maker's Daughter - Lila wants to become a firework-maker, like her father Lalchan, who thinks this is an unsuitable job for girls.	
British Values	Democracy – Should I stay or go when a tremor strikes? Rule of Law – Why are evacuations enforced? Individual Liberty – Should evacuations be enforced even when people want to stay? Mutual Respect & Tolerance – Is respecting authority a must?	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> Understand and apply principles of a healthy and varied diet. Prepare and cook 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. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Explain that fruits and vegetables grow in different countries based on their climates. Understand that 'seasonal' fruits and vegetables are those that grow in a given season and taste Know that eating seasonal fruit and vegetables has a positive effect on the environment. Design their own tart recipe using seasonal ingredients. Understand the basic rules of food hygiene and safety. Follow the instructions within a recipe. 	 <p>best then.</p>
Key Skills and Knowledge	Cooking & Nutrition – Eating Seasonally	
	Key Skills: <ul style="list-style-type: none"> Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish. Knowing how to prepare themselves and a workspace to cook safely in, learning the basic rules to avoid food contamination. Following the instructions within a recipe. Establishing and using design criteria to help test and review dishes. Describing the benefits of seasonal fruits and vegetables and the impact on the environment. Suggesting points for improvement when making a seasonal tart. 	Key Knowledge: <ul style="list-style-type: none"> 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.
Prior Learning	Prior Learning: Children have completed a food and nutrition unit of learning in Year 1 when making a fruit and vegetable smoothie. Children learned to: <ul style="list-style-type: none"> Describe fruits and vegetables and explain why they are a fruit or a vegetable. Name a range of places that fruits and vegetables grow. 	

	<ul style="list-style-type: none"> Describe basic characteristics of fruit and vegetables. Prepare fruits and vegetables to make a smoothie 		
Phase 1	Phase 1	Phase 1: Where in the world? I can know that climate affects food growth	
Phase 2	Phase 2	Phase 2: British seasonal foods I can understand the advantages of eating seasonal foods grown in the UK	
Phase 3	Phase 3	Phase 3: Rainbow food I can create a recipe that is healthy and nutritious using seasonal vegetables	
Phase 4	Phase 4	Phase 4: Making tarts I can safely follow a recipe when cooking	
End Points	End Points	<ul style="list-style-type: none"> To create a recipe that is healthy and nutritious using seasonal vegetables To safely follow a recipe when cooking 	
Vocabulary		<ul style="list-style-type: none"> ➤ Climate ➤ Dry climate ➤ Exported ➤ Imported ➤ Mediterranean climate ➤ Nationality 	<ul style="list-style-type: none"> ➤ Nutrients ➤ Polar climate ➤ Recipe ➤ Seasonal food ➤ Seasons ➤ Temperate climate ➤ Tropical climate

Year 3 Spring Term


Spring 2nd Half

Theme	Digital World – Design, Make and Evaluate an Electronic Charm	
British Key Question	How has industry in Perranporth changed?	
Addressing Stereotypes	Did women help fishermen? What was the role of a fishwife? What do fishermen/women look like? Where are they from? Explore that fishing is a global industry and need.	
British Values	Democracy – Who makes decisions in Perranporth? (broadly explore Parish Council) Rule of Law – What rules would help to make Perranporth better? Individual Liberty – Who protects us in Perranporth? Mutual Respect and Tolerance – Is it a good thing that Perranporth has so many visitors?	
Design Technology (NC subject content covered)	<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. Understand how key events and individuals in design and technology have helped shape the world. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. Apply their understanding of computing to program, monitor and control their products 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Give a brief explanation of the digital revolution and/or remember key examples. Suggest a feature from the Micro:bit that is suitable for an eCharm. Write a program that initiates a flashing LED panel, or another pattern, on the Micro:bit when a button is pressed. Identify errors, if testing is unsuccessful, by comparing their code to a correct example. Explain the basic functionality of their finished program. Suggest key features for a pouch, with some consideration for the overall theme and the user. Use a template when cutting and assembling a pouch, with some support. Describe what is meant by ‘point of sale display’ with an example. Follow basic design requirements using computer-aided design, drawing at least one shape with a text box and bright colours, following a demonstration. Evaluate their design. 	
Key Skills and Knowledge	Digital World – Design, Make and Evaluate an Electronic Charm	
	Key Skills: <ul style="list-style-type: none"> Problem solving by suggesting potential features on a Micro:bit and justifying my ideas. Developing design ideas for a technology pouch. Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge. Using a template when cutting and assembling the pouch. Following a list of design requirements. Selecting and using the appropriate tools and equipment for cutting, joining, shaping and decorating a foam pouch. 	Key Knowledge: <ul style="list-style-type: none"> 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. Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm.



	<ul style="list-style-type: none">• Applying functional features such as using foam to create soft buttons.• Analysing and evaluating an existing product. Identifying the key features of a pouch.		
Prior Learning	Prior Learning	Prior Learning: Children have not completed a digital product unit before but, their learning in Year 1 Textiles – hand puppets has skills that will support the creation of the pouch: <ul style="list-style-type: none">• Join fabrics together using pins, staples or glue.• Design a puppet and use a template.• Join their two puppets’ faces together as one.• Decorate a puppet to match their design Cross Curricular learning in Computing sessions will also support children’s prior learning:	
Phase 1	Phase 1	Phase 1: Smart wearables <ul style="list-style-type: none">• I can understand the impact of the digital revolution in the world of (D&T) product design	
Phase 2	Phase 2	Phase 2: Programming an eCharm <ul style="list-style-type: none">• I can write a program to initiate a flashing LED panel after button press and/or automatically initiate using the Micro:bit light sensing, as part of an eCharm	
Phase 3	Phase 3	Phase 3: eCharm pouches <ul style="list-style-type: none">• I can create and decorate a foam pouch for the eCharm, using a template	
Phase 4	Phase 4	Phase 4: Point of sale displays <ul style="list-style-type: none">• I can design a display badge and/or stand using CAD (computer-aided design) software for an eCharm product	
End Points	End Points	<ul style="list-style-type: none">• To write a program to initiate a flashing LED panel after button press and/or automatically initiate using the Micro:bit light sensing, as part of an eCharm• To design a display badge and/or stand using CAD (computer-aided design) software for an eCharm product	
	Vocabulary	<ul style="list-style-type: none">➤ smart wearables➤ product design➤ digital revolution➤ analogue➤ digital➤ feature➤ function➤ digital world➤ Micro:bit➤ electronic products	<ul style="list-style-type: none">➤ point of sale➤ program➤ loops➤ initiate➤ simulator➤ control➤ monitor➤ sense➤ template➤ CAD (computer-aided design)➤ display

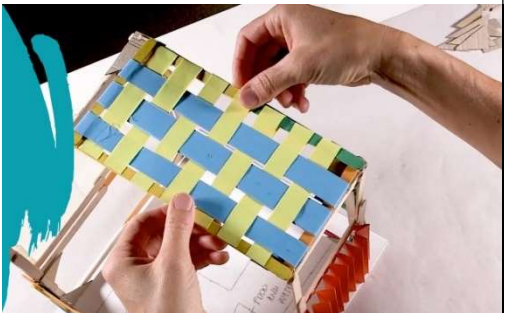
Year 3 Summer Term

	Summer 2 nd Half	
Theme	Structures: Constructing a castle	
British Key Question	What could we all be doing to protect the rainforest?	
Addressing Stereotypes	Are children too young to help stop climate change?	
British Values	Democracy – How can people help to save the rainforest (Green Party?) Rule of Law – Should laws protect endangered places and animals? Individual Liberty – What can I do to changed the future of our planet? Mutual Respect & Tolerance – Why might people damage the rainforest?	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> 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. 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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Investigate and analyse a range of existing products. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Draw and label a simple castle that includes the most common features. Recognise that a castle is made up of multiple 3D shapes. Design a castle with key features which satisfy a given purpose. Score or cut along lines on the net of a 2D shape. Use glue to securely assemble geometric shapes. Utilise skills to build a complex structure from simple geometric shapes. Evaluate their work by answering simple questions. 	
Key Skills and Knowledge	Structures: Constructing a castle	
	Key Skills: <ul style="list-style-type: none"> Designing a castle with key features to appeal to a specific person/purpose. Drawing and labelling a castle design using 2D shapes. Designing and/or decorating a castle tower on CAD software. Constructing a range of 3D geometric shapes using nets. Creating special features for individual designs. Making facades from a range of recycled materials. 	Key Knowledge: <ul style="list-style-type: none"> To understand that wide and flat based objects are more stable. To understand the importance of strength and stiffness in structures.

	<ul style="list-style-type: none"> Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design. Suggesting points for modification of the individual designs. 	<ul style="list-style-type: none"> To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse – and their purpose. To know that a façade is the front of a structure. To understand that a castle needed to be strong and stable to withstand enemy attack.
Prior Learning	Prior Learning	Prior Learning: Children completed a structures unit in Y2 when designing and making a chair: Children learned to <ul style="list-style-type: none"> Identify man-made and natural structures. Identify stable and unstable structural shapes. Work independently to make a stable structure, following a demonstration. Produce a model that supports a teddy, using the appropriate materials and construction techniques. Explain how they made their model strong, stiff and stable.
Phase 1	Phase 1	Phase 1: Features of a castle <ul style="list-style-type: none"> I can recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure
Phase 2	Phase 2	Phase 2: Designing a castle <ul style="list-style-type: none"> I can create a suitable design for my castle
Phase 3	Phase 3	Phase 3: Nets and structures <ul style="list-style-type: none"> I can construct 3D nets
Phase 4	Phase 4	Phase 4: Building a castle <ul style="list-style-type: none"> I can construct and evaluate my final product
End Points	End Points	<ul style="list-style-type: none"> To construct 3D nets To construct and evaluate my final product
	Vocabulary	<ul style="list-style-type: none"> ➤ 2D shapes ➤ 3D shapes ➤ Castle ➤ Design criteria ➤ Evaluate ➤ Facade ➤ Feature ➤ Flag
		<ul style="list-style-type: none"> ➤ Net ➤ Recyclable ➤ Scoring ➤ Stable ➤ Strong ➤ Structure ➤ Tab ➤ Weak



Year 4 Autumn Term

	Autumn 2 nd Half	
Theme	Structures - Pavilions	
British Key Question	How does water shape our world?	
Addressing Stereotypes	Climbing is too dangerous for everyone to do it https://www.theguardian.com/world/2019/oct/31/mount-everest-lhakpa-sherpa-climbed-nine-times-world-record	
British Values	Democracy – Should you pay to fish in the sea/river? Rule of Law – Should we limit the number of people who visit a beach? (National Trust) Individual Liberty – Can water be stolen? Mutual Respect & Tolerance – Can you harm a river?	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> • 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. • 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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. • 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. • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> • Produce a range of free-standing frame structures of different shapes and sizes. • Design a pavilion that is strong, stable and aesthetically pleasing. • Select appropriate materials and construction techniques to create a stable, free-standing frame structure. • Select appropriate materials and techniques to add cladding to their pavilion. 	
Key Skills and Knowledge	Structures - Pavilions	
	Key Skills: <ul style="list-style-type: none"> • Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. • Building frame structures designed to support weight. • Creating a range of different shaped frame structures. • Making a variety of free-standing frame structures of different shapes and sizes. • Selecting appropriate materials to build a strong structure and for the cladding. • Reinforcing corners to strengthen a structure. 	Key Knowledge: <ul style="list-style-type: none"> • To understand what a frame structure is. • To know that a 'free-standing' structure is one that can stand on its own. • To know that a pavilion is a decorative building or structure for leisure activities. • To know that cladding can be applied to structures for different effects.

	<ul style="list-style-type: none"> • Creating a design in accordance with a plan. • Learning to create different textural effects with materials. 		<ul style="list-style-type: none"> • To know that aesthetics are how a product looks.
Prior Learning	Prior Learning: Children have completed a structures unit of learning in Year 2 and Year 3 when making a a chair for Baby Bear (Y2) and a Castle (Y3). Children learned to: <ul style="list-style-type: none"> • Recognise that a castle is made up of multiple 3D shapes. • Design a castle with key features which satisfy a given purpose. • Score or cut along lines on the net of a 2D shape. • Utilise skills to build a complex structure from simple geometric shapes. 		
Phase 1	Phase 1	Phase 1: Exploring frame structures To create a range of different shaped frame structures	
Phase 2	Phase 2	Phase 2: Designing a pavilion To design a structure	
Phase 3	Phase 3	Phase 3: Pavilion frame To build a frame structure	
Phase 4	Phase 4	Phase 4: Pavilion cladding To add cladding to a frame structure	
End Points	End Points	<ul style="list-style-type: none"> • To design a structure • To build a frame structure 	
Vocabulary		<ul style="list-style-type: none"> ➤ 3D shapes ➤ Design criteria ➤ Natural ➤ Cladding 	<ul style="list-style-type: none"> ➤ Innovative ➤ Reinforce ➤ Structure

Year 4 Spring Term


Summer 1st Half

Theme	Mechanical Systems – Making a Slingshot Car	
British Key Question	Are you what you eat?	
Addressing Stereotypes	Boys don't wash their hands!	
British Values	<ul style="list-style-type: none"> • Democracy – Teeth care should be free for all, like the NHS • Rule of Law – Teeth care should be free for all, like the NHS • Individual Liberty – Everyone should alter their eating habits to save the planet • Mutual Respect & Tolerance – Meat vs Vegetarian vs Vegan Which is preferable? 	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> • 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. • 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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. • 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. • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> • Work independently to produce an accurate, functioning car chassis. • Design a shape that is suitable for the project. • Attempt to reduce air resistance through the design of the shape. • Produce panels that will fit the chassis and can be assembled effectively using the tabs they have designed. • Construct car bodies effectively. • Conduct a trial accurately and draw conclusions and improvements from the results. 	
Key Skills and Knowledge	Mechanical Systems – Making a Slingshot Car	
	Key Skills: <ul style="list-style-type: none"> • Designing a shape that reduces air resistance. • Drawing a net to create a structure from. • Choosing shapes that increase or decrease speed as a result of air resistance. • Personalising a design. • Measuring, marking, cutting and assembling with increasing accuracy. • Making a model based on a chosen design. 	Key Knowledge: <ul style="list-style-type: none"> • 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.



	<ul style="list-style-type: none"> Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance. 	
Prior Learning	Prior Learning: Children have completed a mechanisms unit of learning in Year 2 when making a Fairground Wheel and Moving Monster. Children learned to: <ul style="list-style-type: none"> make linkages using card for levers and split pins for pivots. experiment with linkages adjusting the widths, lengths and thicknesses of card used. cutting and assembling components neatly. 	
Phase 1	Phase 1: Chassis and launch mechanism <ul style="list-style-type: none"> To build a car chassis 	
Phase 2	Phase 2: Designing the car body <ul style="list-style-type: none"> To design a shape that reduces air resistance 	
Phase 3	Phase 3: Making the car body <ul style="list-style-type: none"> To make a model based on a chosen design 	
Phase 4	Phase 4: Assembly and testing <ul style="list-style-type: none"> To assemble and test my completed product 	
End Points	<ul style="list-style-type: none"> Make a stable structure. Assemble the components of my structure . 	
Vocabulary	<ul style="list-style-type: none"> ➤ chassis ➤ energy ➤ kinetic ➤ mechanism ➤ air resistance 	<ul style="list-style-type: none"> ➤ design ➤ structure ➤ graphics ➤ research ➤ model ➤ template

Year 4 Summer Term

	Summer 1 st Half	
Theme	Electrical Systems: Making torches	
British Key Question	How did the Anglo-Saxon era end and what was their impact on life in Britain? How did the Vikings influence life in Britain?	
Addressing Stereotypes	You have to be loud and scary to win a battle!	
British Values	<ul style="list-style-type: none"> • Democracy – The strong rule - Discussion is preferable to force • Rule of Law – Let's trade! Could we survive without money? • Individual Liberty – We should be able to choose our leaders • Mutual Respect & Tolerance – The strong rule - Discussion is preferable to force 	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> • 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. • 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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. • 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. • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> • Identify electrical products and explain why they are useful. • Help to make a working switch. • Identify the features of a torch and how it works. • Describe what makes a torch successful. • Create suitable designs that fit the success criteria and their own design criteria. • Create a functioning torch with a switch according to their design criteria. 	
Key Skills and Knowledge	Electrical Systems: Making torches	
	Key Skills: <ul style="list-style-type: none"> • Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. • Making a torch with a working electrical circuit and switch. • Using appropriate equipment to cut and attach materials. • Assembling a torch according to the design and success criteria. 	Key Knowledge: <ul style="list-style-type: none"> • 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.

	<ul style="list-style-type: none"> Evaluating electrical products. Testing and evaluating the success of a final product. 	
Prior Learning	<p>Prior Learning: Children have completed an electrical systems unit before, however in Y4 Aut term, children are taught 'Electricity' as part of their science learning.</p> <p>Children learned to:</p> <ul style="list-style-type: none"> construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit 	
Phase 1	<p>Phase 1: Electrical products</p> <ul style="list-style-type: none"> To learn about electrical items and how they work 	
Phase 2	<p>Phase 2: Evaluating torches</p> <ul style="list-style-type: none"> To analyse and evaluate electrical products 	
Phase 3	<p>Phase 3: Torch design</p> <ul style="list-style-type: none"> To design a product to fit a set of specific user needs 	
Phase 4	<p>Phase 4: Torch assembly</p> <ul style="list-style-type: none"> To make and evaluate a torch 	
End Points	<ul style="list-style-type: none"> To know that an electrical circuit must be complete for electricity to flow. To make a working electrical circuit with a bulb and switch. 	
Vocabulary	<ul style="list-style-type: none"> ➤ battery ➤ bulb ➤ buzzer ➤ conductor ➤ circuit 	<ul style="list-style-type: none"> ➤ circuit diagram ➤ insulator ➤ series circuit ➤ switch ➤ component

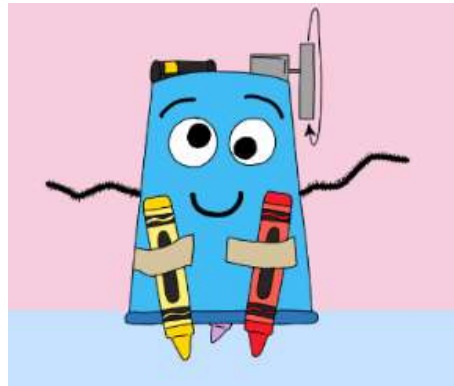


Design Technology Scheme of Work

Perranporth C P School




Year 5 Autumn Term

	Autumn 2 nd Half	
Theme	Electrical Systems – Creating Doodlers	
British Key Question	Can Britain save the rainforest?	
Addressing Stereotypes	Tribes – the role of men and women. What is wealth? Are the tribes people rich – (look at the environment they live in, the freedoms they have etc compare to western perceptions of wealth).	
British Values	Democracy – Tribes hierarchy - are they democratic like our voting systems? Rule of Law – Deforestation what are the laws regarding deforestation? Individual Liberty – Should we be allowed to destroy the rainforest for our own gains? Mutual Respect & Tolerance – Does the World respect the rainforest and its inhabitants?	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> 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. Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. 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. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Identify simple circuit components (battery, bulb and switch) with a basic explanation of their function. Explain that a series circuit is assembled in a loop to allow the electricity to flow along one path. Describe a motor as a circuit component that changes electrical energy into movement. Provide examples of motorised products that use movement to rotate or spin different parts. Remove and replace different parts of a Doodler, as part of a team. Suggest ways to switch the configuration to amend the form or function of the Doodler. Explain, in an investigation report, each of the changes they made and the effect this had on the Doodler's ability to draw scribbles (function) and appearance (form). Develop design criteria with consideration for the target user, the purpose of their Doodler, a key function and the Doodler's form and final appearance (e.g. fun, bright, soft). Explain simply why their Doodler has a certain configuration based on the findings of their investigation (e.g. I used four pens because the Doodler would fall over with two). Create a functional Doodler that creates scribbles on paper with or without a switch. Identify and list each of the required materials, tools and circuit components required to build a Doodler. Explain simply the steps to assemble a Doodler as part of a set of instructions (or storyboard). Write instructions to build a functional circuit, explaining how to identify if it is functional or not. Provide suggestions to improve a peer's set of instructions after testing how effective they are at guiding someone. 	
Key Skills and Knowledge	Electrical Systems – Creating Doodlers	
	Key Skills:	Key Knowledge: <ul style="list-style-type: none"> To know that, in a series circuit, electricity only flows in one direction.

	<ul style="list-style-type: none"> Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. Developing design criteria based on findings from investigating existing products. Developing design criteria that clarifies the target user. Altering a product's form and function by tinkering with its configuration. Making a functional series circuit, incorporating a motor. Constructing a product with consideration for the design criteria. Breaking down the construction process into steps so that others can make the product. Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. Determining which parts of a product affect its function and which parts affect its form. Analysing whether changes in configuration positively or negatively affect an existing product. Peer evaluating a set of instructions to build a product. 		<ul style="list-style-type: none"> To know when there is a break in a series circuit, all components turn off. To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. To know a motorised product is one which uses a motor to function.
Prior Learning	Prior Learning: Children have completed a 'Electrical Systems' unit in Y4 when creating torches Children learned to: <ul style="list-style-type: none"> Identify electrical products and explain why they are useful. Identify the features of a torch and how it works. Describe what makes a torch successful. Create suitable designs that fit the success criteria and their own design criteria. Create a functioning torch with a switch according to their design criteria. 		
Phase 1	Phase 1	Phase 1: Electrical systems and motors To understand how motors are used in electrical products.	
Phase 2	Phase 2	Phase 2: Meet the Doodlers To investigate an existing product to determine the factors that affect the product's form and function.	
Phase 3	Phase 3	Phase 3: Doodler design and construction To put findings from research into practice to develop an improved product.	
Phase 4	Phase 4	Phase 4: Doodler DIY kits To develop a DIY kit for another individual to assemble their product.	
End Points	End Points	<ul style="list-style-type: none"> To create a functional electrical product (the doodler) that meets the design purpose. To break down a construction process into steps so that others can make the product. 	
Vocabulary		<ul style="list-style-type: none"> ➤ circuit component ➤ configuration ➤ current ➤ develop ➤ DIY ➤ investigate 	<ul style="list-style-type: none"> ➤ motor ➤ motorised ➤ problem solve ➤ product analysis ➤ series circuit ➤ stable ➤ target user

Year 5 Spring Term

Spring 2nd Half

Theme	Cooking and nutrition: What could be healthier?	
British Key Question	What did they mean by 'Keep Calm and Carry On'? https://london.ac.uk/about-us/history-university-london/story-behind-keep-calm-and-carry	
Addressing Stereotypes	The role of women in WW2 - Land girls and exploring stereotypes Jewish people – why were they treated so badly?	
British Values	Democracy – What is a dictator? Rule of Law – Should one person make the rules for the whole country? Individual Liberty – Evacuation - was it the right thing to do? Mutual Respect & Tolerance – The Holocaust - what was it and why must it never happen again?	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> • 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. • 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. • 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. Apply their understanding of computing to program, monitor and control their products. • Understand and apply principles of a healthy and varied diet. • Prepare and cook 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. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> • Understand how beef gets from the farm to our plates. • Present a subject as a poster with clear information in an easy to read format. • Contribute ideas as to what a 'healthy meal' means. • Notice the nutritional differences between different products and recipes. • Recognise nutritional differences between two similar recipes and give some justification as to why this is. • Work as a team to amend a Bolognese recipe with healthy adaptations. • Follow a recipe to produce a healthy Bolognese sauce. • Design packaging that promotes the ingredients of the Bolognese. 	
Key Skills and Knowledge	Electrical Systems: Making torches	
	Key Skills: <ul style="list-style-type: none"> • Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. 	Key Knowledge: <ul style="list-style-type: none"> • To understand where meat comes from – learning that beef is from cattle and how beef is reared and processed, including key welfare issues. • To know that I can adapt a recipe to make it healthier by substituting ingredients.

	<ul style="list-style-type: none"> • Writing an amended method for a recipe to incorporate the relevant changes to ingredients. • Designing appealing packaging to reflect a recipe. • Cutting and preparing recipes safely. • Using equipment safely, including knives, hot pans and hobs. • Knowing how to avoid cross-contamination. • Following a step-by-step method carefully to make a recipe. Identifying the nutritional differences between different products and recipes. • Identifying and describing healthy benefits of food groups. 		<ul style="list-style-type: none"> • To know that I can use a nutritional calculator to see how healthy a food option is. • 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.
Prior Learning	<p>Prior Learning: Children have completed an food technology unit before in Y3 Aut term, children are taught</p> <p>Children learned to:</p> <ul style="list-style-type: none"> • Explain that fruits and vegetables grow in different countries based on their climates. • Understand that 'seasonal' fruits and vegetables are those that grow in a given season and taste best then. • Know that eating seasonal fruit and vegetables has a positive effect on the environment. • Design their own tart recipe using seasonal ingredients. • Understand the basic rules of food hygiene and safety. • Follow the instructions within a recipe. 		
Phase 1	<p>Phase 1: From farm to fork</p> <ul style="list-style-type: none"> • To understand where food comes from 		
Phase 2	<p>Phase 2: What does healthy look like?</p> <ul style="list-style-type: none"> • To understand the term 'healthy' 		
Phase 3	<p>Phase 3: Adapting and improving a recipe</p> <ul style="list-style-type: none"> • To adapt a traditional recipe 		
Phase 4	<p>Phase 4: Mamma mia! What a tasty, healthy Bolognese!</p> <ul style="list-style-type: none"> • To complete a food product 		
End Points	<ul style="list-style-type: none"> • To use equipment safely, including knives, hot pans and hobs. • To follow a step-by-step method carefully to make a recipe • To identify and describe healthy benefits of food groups. 		
Vocabulary	<ul style="list-style-type: none"> ➤ beef ➤ reared ➤ processed ➤ ethical ➤ diet 	<ul style="list-style-type: none"> ➤ ingredients ➤ supermarket ➤ farm ➤ balanced 	

Year 5 Summer Term

Summer

Mechanical systems: Pop-up book

Theme

British Key Question

Kernow Bys Viken?

Addressing Stereotypes

Women in farming - explore the roles of women in the farming industry.

The Black Farmer – research Wilfred Emmanuel Jones and his journey from Jamaica into farming in Britain: <https://theblackfarmer.com/about-us/>

British Values

Democracy – DEFRA – how does it work?

Rule of Law – RSPCA – safety for animals

Individual Liberty – Vegetarian, vegan or meat eater – what's your choice and why?

Mutual Respect & Tolerance – Respect between humans and animals - how can we ensure the planet is fit for us all?

Design Technology (NC subject content covered)

- 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.
- 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.
- 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 and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].



Intended Outcomes from the unit

- Produce a suitable plan for each page of their book.
- Produce the structure of the book.
- Assemble the components necessary for all their structures/mechanisms.
- Hide the mechanical elements with more layers using spacers where needed.
- Use a range of mechanisms and structures to illustrate their story and make it interactive for the users.
- Use appropriate materials and captions to illustrate the story.

Key Skills and Knowledge

Mechanical systems: Pop-up book


Key Skills:

- Designing a pop-up book which uses a mixture of structures and mechanisms.
- Naming each mechanism, input and output accurately.
- Storyboarding ideas for a book.
- Following a design brief to make a pop up book, neatly and with focus on accuracy.


Key Knowledge:

- To know that mechanisms control movement.
- To understand that mechanisms can be used to change one kind of motion into another.

	<ul style="list-style-type: none"> • Making mechanisms and/or structures using sliders, pivots and folds to produce movement. • Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result. • Evaluating the work of others and receiving feedback on own work. • Suggesting points for improvement. 		<ul style="list-style-type: none"> • To understand how to use sliders, pivots and folds to create paper-based mechanisms. • To know that a design brief is a description of what I am going to design and make. • To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.
Prior Learning	Prior Learning: Children have completed a 'Mechanical Systems' unit in Y4 when creating slingshot cars Children learned to: <ul style="list-style-type: none"> • Work independently to produce an accurate, functioning car chassis. • Design a shape that is suitable for the project. • Attempt to reduce air resistance through the design of the shape. • Produce panels that will fit the chassis and can be assembled effectively using the tabs they have designed. • Construct car bodies effectively. • Conduct a trial accurately and draw conclusions and improvements from the results. 		
Phase 1	Phase 1	Phase 1: Pop-up book page design To design a pop-up book	
Phase 2	Phase 2	Phase 2: Making my pop-up book To follow my design brief to make my pop up book	
Phase 3	Phase 3	Phase 3: Using layers and spacers To use layers and spacers to cover the working of mechanisms	
Phase 4	Phase 4	Phase 4: Writing and illustrating To create a high-quality product suitable for a target user	
End Points	End Points	<ul style="list-style-type: none"> • To make a mechanisms using sliders, pivots and folds to produce movement. • To use layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result. 	
Vocabulary		➤ design ➤ input ➤ motion ➤ mechanism	➤ criteria ➤ research ➤ reinforce ➤ model

	Year 6 Spring Term	
	Spring 1 st Half	
Theme	Textiles: Waistcoats	
British Key Question	Does your heart belong to Britain?	
Addressing Stereotypes	Mary Seacole Florence Nightingale	
British Values	Democracy – explore the subject of genetic engineering – should this be allowed Rule of Law – what are the laws on genetics? Individual Liberty – Transplants – should it be a personal choice or an assumed choice? Mutual Respect & Tolerance – What are some of the religious views on transplants?	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> 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. 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. 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. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Consider a range of factors in their design criteria and use this to create a waistcoat design. Use a template to mark and cut out a design. Use a running stitch to join fabric to make a functional waistcoat. Attach a secure fastening, as well as decorative objects. Evaluate their final product. 	
Key Skills and Knowledge	Textiles – Creating Waistcoats	
	Key Skills: <ul style="list-style-type: none"> Designing a waistcoat in accordance with a specification and design criteria to fit a specific theme. Annotating designs. Using a template when pinning panels onto fabric. Marking and cutting fabric accurately, in accordance with a design. Sewing a strong running stitch, making small, neat stitches and following the edge. Tying strong knots. Decorating a waistcoat – attaching objects using thread and adding a secure fastening. Learning different decorative stitches. Sewing accurately with even regularity of stitches. Evaluating work continually as it is created. 	Key Knowledge: <ul style="list-style-type: none"> To understand that it is important to design clothing with the client/target customer in mind. To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric. To understand the importance of consistently sized stitches

Prior Learning	<p>Prior Learning: This is the first textiles unit of learning</p> <p>Children learned to:</p> <ul style="list-style-type: none"> • Create suitable designs that fit the success criteria and their own design criteria.
Phase 1	<p>Phase 1: Waistcoat design</p> <p>To design a waistcoat.</p>
Phase 2	<p>Phase 2: Preparing fabric</p> <p>To mark and cut fabric according to a design.</p>
Phase 3	<p>Phase 3: Assembling my waistcoat</p> <p>To assemble a waistcoat.</p>
Phase 4	<p>Phase 4: Decorating my waistcoat</p> <p>To decorate your waistcoat.</p>
End Points	<ul style="list-style-type: none"> • To use a running stitch to join fabric to make a functional waistcoat. • To attach a secure fastening, as well as decorative objects.
Vocabulary	<ul style="list-style-type: none"> ➤ annotate ➤ decorate ➤ design criteria ➤ fabric ➤ target customer ➤ waistcoat ➤ waterproof

	Year 6 Spring Term	
	Spring 2 nd Half	
Theme	Structures - Playgrounds	
British Key Question	What will Cornwall do when the tin is gone?	
Addressing Stereotypes	What was the role of Bal Maidens?	
British Values	Democracy – rights and responsibilities (mining disasters) Rule of Law –safety of miners Individual Liberty – Freedom of movement (Cousin Jacks) Mutual Respect & Tolerance – Different countries and cultures (Cousin Jacks)	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> 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. 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. 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. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Create five apparatus designs, applying the design criteria to their work. Make suitable changes to their work after peer evaluation. Make roughly three different structures from their plans using the materials available. Complete their structures, improving the quality of their rough versions and applying some cladding to a few areas. Secure their apparatus to a base. Make a range of landscape features using a variety of materials which will enhance their apparatus. 	
Key Skills and Knowledge	Structures - Playgrounds	
	Key Skills: <ul style="list-style-type: none"> Designing a playground featuring a variety of different structures, giving consideration to how the structures will be used. Considering effective and ineffective designs. Building a range of play apparatus structures drawing upon new and prior knowledge of structures. Measuring, marking and cutting wood to create a range of structures. Using a range of materials to reinforce and add decoration to structures. Improving a design plan based on peer evaluation. 	Key Knowledge: <ul style="list-style-type: none"> To know that structures can be strengthened by manipulating materials and shapes. To understand what a ‘footprint plan’ is. To understand that in the real world, design can impact users in positive and negative ways. To know that a prototype is a cheap model to test a design idea.

	<ul style="list-style-type: none"> • Testing and adapting a design to improve it as it is developed. • Identifying what makes a successful structure. 	
Prior Learning	Prior Learning: Children have completed a 'Structures' unit in Y4 when creating Pavilions Children learned to: <ul style="list-style-type: none"> • Design a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. • Build frame structures designed to support weight. • Create a range of different shaped frame structures. • Make a variety of free-standing frame structures of different shapes and sizes. • Select appropriate materials to build a strong structure and for the cladding. • Reinforce corners to strengthen a structure. • Create a design in accordance with a plan. • Learn to create different textural effects with materials. 	
Phase 1	Phase 1: Design a new playground To design a playground with a variety of structures.	
Phase 2	Phase 2: Building structures To build a range of structures.	
Phase 3	Phase 3: Perfecting structures To improve and add detail to structures.	
Phase 4	Phase 4: Playground landscapes To create a surrounding landscape.	
End Points	<ul style="list-style-type: none"> • To measure, mark and cut wood to create a range of structures drawing upon new and prior knowledge of structures.. • Use a range of materials to reinforce and add decoration to structures. • To know that structures can be strengthened by manipulating materials and shapes. 	
Vocabulary	<ul style="list-style-type: none"> ➤ apparatus ➤ design criteria ➤ equipment ➤ playground ➤ landscape features ➤ cladding 	

Year 6 Summer Term

Summer 1st Half

Theme	Cooking and nutrition: What could be healthier?	
British Key Question	Why do we have tacos? (discuss the introduction of tacos in the US in 1905 through the creation of the railroads and Mexican migrant workers. Move discussion towards other international foods and traditions that are part of everyday Britain)	
Addressing Stereotypes	Role of women in Mayan culture. Look at the stereotypes surrounding Mexicans in the US.	
British Values	Democracy – Is Mexico really a democratic country? Explore some of the controversies surrounding the elections in Mexico and it's Class 9 status. Rule of Law – Mayan laws – what were some of the rules that Mayans would follow? Individual Liberty – Why do so many Mexicans try to cross into the US every year? Mutual Respect & Tolerance – What do Americans/Mexicans feel about their bordering neighbours?	
Design Technology (NC subject content covered)	<ul style="list-style-type: none"> 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. Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Apply their understanding of computing to program, monitor and control their products. 	
Intended Outcomes from the unit	<ul style="list-style-type: none"> Incorporate key information from a client's design request such as 'multifunctional' and 'compact' in their design brief. Write a program that displays an arrow to indicate cardinal compass directions with an 'On start' loading screen. Identify errors (bugs) in the code and suggest ways to fix (debug) them. Self and peer evaluate a product concept against a list of design criteria with basic statements. Identify key industries that use 3D CAD modelling and why. Recall and describe the name and use of key tools used in Tinkercad (CAD) software. Combine more than one object to develop a finished 3D CAD model in Tinkercad. Complete a product pitch plan that includes key information. 	
Key Skills and Knowledge	Electrical Systems: Making torches	
	Key Skills: <ul style="list-style-type: none"> Writing a design brief from information submitted by a client. Developing design criteria to fulfil the client's request. Developing a product idea through annotated sketches. Placing and manoeuvring 3D objects, using CAD. Changing the properties of, or combine one or more 3D objects, using CAD. Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). 	Key Knowledge: <ul style="list-style-type: none"> To know that accelerometers can detect movement. To understand that sensors can be useful in products as they mean the product can function without human input. To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. To know that 'multifunctional' means an object or product 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.



	<ul style="list-style-type: none"> Explaining material choices and why they were chosen as part of a product concept. Programming an N,E, S,W cardinal compass. Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. Developing an awareness of sustainable design. Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch. Demonstrating a functional program as part of a product concept. 	
Prior Learning	Prior Learning: Children have completed a Digital World unit before in Y3, children are taught Children learned to: <ul style="list-style-type: none"> Give a brief explanation of the digital revolution and/or remember key examples. Suggest a feature from the Micro:bit that is suitable for an eCharm. Write a program that initiates a flashing LED panel, or another pattern, on the Micro:bit when a button is pressed. Identify errors, if testing is unsuccessful, by comparing their code to a correct example. Explain the basic functionality of their finished program. 	
Phase 1	Phase 1: Navigating the world <ul style="list-style-type: none"> To write a design brief and criteria based on a client request. 	
Phase 2	Phase 2: Programming a navigation tool <ul style="list-style-type: none"> To write a program to include multiple functions as part of a navigation device. 	
Phase 3	Phase 3: Product concept <ul style="list-style-type: none"> To develop a sustainable product concept. 	
Phase 4	Phase 4: 3D CAD models <ul style="list-style-type: none"> To develop 3D CAD skills to produce a virtual model. 	
Phase 5	Phase 5: Product pitch To present a pitch to ‘sell’ the product to a specified client.	
End Points	<ul style="list-style-type: none"> To write a program to include multiple functions as part of a navigation device To develop 3D CAD skills to produce a virtual model. 	
Vocabulary	<ul style="list-style-type: none"> ➤ smart ➤ smartphone ➤ equipment ➤ navigation ➤ cardinal compass ➤ application (apps) ➤ pedometer ➤ GPS tracker ➤ design brief ➤ design criteria ➤ client ➤ function ➤ program 	<ul style="list-style-type: none"> ➤ replica ➤ loop ➤ variable ➤ value ➤ if statement ➤ boolean ➤ corrode ➤ mouldable ➤ lightweight ➤ sustainable design ➤ environmentally friendly ➤ biodegradable ➤ recyclable

	➤ duplicate	
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