



## Year 1

### Overview

<b>Moving Dinosaur Pictures</b>	<b>Fabric Jack in a Box</b>	<b>Sensational Fruit Salads</b>
<p>During Term 2, Hazel Class complete their first DT project alongside our Dinosaur Topic. For their initial lesson, the children explore a range of existing moving picture books. The class have the opportunity to use the mechanisms, sliders and levers and choose their favourite moving book. Expressing their own likes and dislikes and comment on reasons why. Then the children go onto design their own moving picture. They consider a range of dinosaurs and habitats and create a plan to fit with a strict design brief. It must have a background which could belong to a dinosaur habitat, the dinosaur must be moveable and have one moving mechanism. Next the class spend the afternoon creating their products before testing and evaluating their finished product.</p>	<p>In Term 3 we begin our next DT project, this time focusing on the materials and fabrics that can be used to create a product. As the Terms topic is old and new 'Toys' our end goal is to create our own Jack in a Box! We use our topic boxes and explore and handle a range of 'Jack in a Box' commenting on their material, movement and design. The children are then given a design brief to follow; each Jack must be within a box, use at least three different materials and have a fabric face. We spend some time exploring joining and attaching techniques to make sure our product is sturdy before having a go at making the final product. To finish the sequence of lessons we test and evaluate our Jack in a Box to check it matched our design criteria!</p>	<p>Our final DT project focuses on food technology. Alongside our 'African' Topic we read the text <i>Handa's Surprise</i> which focuses on a range of tropical fruit typically grown in hotter climates, such as, Africa. During our first lesson, we have the opportunity to taste a variety of these seasonal fruits and juices, including pomegranate, passion fruit, melon and more! After designing our very own fruit salad, including the fruits we really enjoyed and picking a fresh juice to keep it moist, we go onto prepare the fruit. We touch upon food hygiene and learn simple cutting techniques when using a knife. Including the claw and bridge action when chopping some of the fruit. We also have the chance to compare seeds, pips and the make-up of each piece of fruit. Finally we can enjoy our fruit salad before evaluating it 😊</p>

### Sticky Vocabulary

Explore, evaluate, like, dislike, change, moving books, slider, lever, mechanism, wheel mechanism, design, create, criteria, product, make, reflect.	Explore, evaluate, like, dislike, fabric, material, joining, experiment, create, design criteria, product, reflect, attach, colour, join, thread, plastic, wooden, sequins, felt, hessian, cutting, shaping, finishing.	Taste, explore, comment, flavour, bitter, sweet, sour, tangy, spicy, fruits, exotic, like, dislike, plan, hygiene, design criteria, make, chop, bridge, claw, sharp, prepare, eat, enjoy, reflect.
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### Skills

<p>Explore an existing product. Use mechanisms (for example sliders) in their products to make a picture move. Draw a simple design. Make a picture with at least one moving mechanism. Start to understand what design criteria is used for. Evaluate what they did well on their product, expressing likes and dislikes.</p>	<p>Label a number of simple materials and fabrics. Comment on a range of threads and materials. Discuss ideas as they develop and say what the design should achieve. Follow a simple design to explain what they intend to do. Create a product with joining pieces of fabric and other material together. Use appropriate materials to reflect a Jack in a Box.</p>	<p>Name a variety of fruits. Recognise fruit and vegetables are grown around the world in a range of Countries and different places. Explain how to maintain a healthy diet, including the names of certain food groups. Work with some independence to correctly use measuring spoons. With the support of an adult, learn to cut and chop certain fruits using bridging skills. Prepare a simple fruit salad by following a simple recipe.</p>
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#### **Design**

Use their knowledge of existing products and their own experience to help generate their ideas.  
Design products that have a purpose and are aimed at an intended user  
Explain how their products will look and work through talking and simple annotated drawings

Design models using simple computing software.  
Plan and test ideas using templates and mock-ups.  
Understand and follow simple design criteria.  
Work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.

### **Make**

With support, follow a simple plan or recipe.  
Begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, and juicer.  
Select from a range of materials, textiles and components according to their characteristics.  
Learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures.  
Use a range of materials and components, including textiles and food ingredients.  
With help, measure and mark out.  
Cut, shape and score materials with some accuracy.  
Assemble, join and combine materials, components or ingredients.  
Demonstrate how to cut, shape and join fabric to make a simple product.  
Manipulate fabrics in simple ways to create the desired effect.  
Use a basic running stitch.  
Cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups.  
Begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.

### **Evaluate**

Explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations.  
Explain positives and things to improve for existing products.  
Explore what materials products are made from.  
Talk about their design ideas and what they are making.  
As they work, start to identify strengths and possible changes they might make to refine their existing design.  
Evaluate their products and ideas against their simple design criteria.  
Start to understand that the iterative process sometimes involves repeating different stages of the process.

### **Technical Knowledge**

Build simple structures, exploring how they can be made stronger, stiffer and more stable;  
Talk about and start to understand the simple working characteristics of materials and components;  
Explore and create products using mechanisms, such as levers, sliders and wheels.

### **Cooking and Nutrition**

Explain where in the world different foods originate from.  
Understand that all food comes from plants or animals.  
Understand that food has to be farmed, grown elsewhere (e.g. home) or caught.  
Name and sort foods into the five groups in the Eatwell Guide.  
Understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why.  
Use what they know about the Eatwell Guide to design and prepare dishes.

## **Year 2**

### **Overview**

**Healthy Cooking**

**Moving Vehicles**

**Fabric Seaside Puppets**

<p><b><u>Leek and Potato Soup</u></b></p> <p>During Term 1, the children have an opportunity to harvest the vegetables grown in the school garden. This will run alongside Pine Class’s learning about Harvest time. Initially the children will learn where vegetables come from and how they are grown. The children will then go on to harvest the vegetables and decide which vegetables they will need to use in their leek and potato soup. Using their senses, the children will have an opportunity to investigate the smells and textures of these vegetables and comment their likes and dislikes. With support the children will follow a recipe to prepare and cook the food and select a range of tools and equipment, they will need in order to do this. Once ready, the children will taste their soups and evaluate it.</p> <p><b><u>Pizza</u></b></p> <p>During Term 2, the children learn about healthy eating. They will name and sort foods into the five groups in the Eatwell Plate and from this, design a healthy, balanced pizza. The children will then go on to learn the importance of healthy eating and learn that everyone should eat at least 5 portions of fruit and vegetables a day. The children will then prepare a pizza by following a recipe and their design brief.</p>	<p>In Term 3, the children will begin their next DT focus. This time, the children will be focusing on materials and moving objects. As our main topic will be learning about Amelia Earhart, the focus will be on transport. The children will begin by testing out different toy vehicles and recognise what is needed for it to move. They will then go on to generate their own ideas and create their design for a moving vehicle with working wheels. The children will learn to saw dowelling and attach this to their vehicle body. The vehicles will then be tested and evaluated to ensure they work correctly and match our design criteria.</p>	<p>In Term 6, we begin our next DT project, this time focusing on textiles. As our topic is based on the seaside, the children begin by watching a puppet show, Punch and Judy. The child will understand the use for a puppet and the features it will need in order to work correctly. We explore and handle a range of puppets such as finger puppets, hand puppets and string puppets. Once a design brief has been created, the children can then go on to develop their own design of a puppet. We spend time learn the basic running stitch needed to join the fabric together to create a puppet outline. We then go on to using these techniques for our final product. The children will then create the features for their puppets, using different textures fabrics. This will be attached with a glue gun or other joining techniques. Once finished, the children will plan their very own puppet show and perform it to the class.</p>
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**Sticky Vocabulary**

<p>harvest, vegetable, grow, prepare, Taste, explore, comment, flavour, bitter, sweet, sour, tangy, spicy, fruits, exotic, like, dislike, plan, hygiene, design criteria, make, chop, bridge, claw, sharp, prepare, eat, enjoy, reflect, blend, peel, taste, texture, boil, cook</p>	<p>move, attach, decoration, saw, dowelling, explore, evaluate, like, dislike, change, wheel, vehicle, mechanism, wheel mechanism, design, create, criteria, product, make, reflect</p>	<p>explore, evaluate, like, dislike, fabric, material, joining, experiment, create, design criteria, product, reflect, attach, colour, join, thread, plastic, wooden, sequins, felt, hessian, cutting, shaping, finishing, running stitch, needle, cotton, thread, puppet, hand puppet, finger puppet, felt, performance.</p>
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**Skills**

<p>Explain where in the world different foods originate from. Understand that all food comes from plants or animals. Understand that food has to be farmed, grown elsewhere (e.g. home) or caught. Name and sort foods into the five groups in the Eatwell Guide. Understand that everyone should eat at least five</p>	<p>Use their knowledge of existing products and their own experience to help generate their ideas. Design products that have a purpose and are aimed at an intended user Explain how their products will look and work through talking and simple annotated drawings Plan and test ideas using templates and mock-ups. Understand and follow simple design criteria. Assemble, join and combine materials, components</p>	<p>Use their knowledge of existing products and their own experience to help generate their ideas. Design products that have a purpose and are aimed at an intended user Explain how their products will look and work through talking and simple annotated drawings Plan and test ideas using templates and mock-ups. Understand and follow simple design criteria. With support, follow a simple plan or recipe.</p>
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portions of fruit and vegetables every day and start to explain why.  
 Use what they know about the Eatwell Guide to design and prepare dishes.  
 Cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups.  
 With help, measure and mark out.  
 Use a range of materials and components, including textiles and food ingredients.  
 Learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures.  
 With support, follow a simple plan or recipe.  
 Begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, and juicer.

or ingredients.  
 Begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.  
 Explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations.  
 Explain positives and things to improve for existing products.  
 Explore what materials products are made from.  
 Talk about their design ideas and what they are making.  
 As they work, start to identify strengths and possible changes they might make to refine their existing design.  
 Evaluate their products and ideas against their simple design criteria.  
 Start to understand that the iterative process sometimes involves repeating different stages of the process.  
 Explore and create products using mechanisms, such as levers, sliders and wheels.  
 Build simple structures, exploring how they can be made stronger, stiffer and more stable;

Begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, and juicer.  
 Select from a range of materials, textiles and components according to their characteristics.  
 Cut, shape and score materials with some accuracy.  
 Assemble, join and combine materials, components or ingredients.  
 Demonstrate how to cut, shape and join fabric to make a simple product.  
 Manipulate fabrics in simple ways to create the desired effect.  
 Use a basic running stitch.  
 Begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.  
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**Design**

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 Design products that have a purpose and are aimed at an intended user  
 Explain how their products will look and work through talking and simple annotated drawings  
 Design models using simple computing software.  
 Plan and test ideas using templates and mock-ups.  
 Understand and follow simple design criteria.  
 Work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.

**Make**

With support, follow a simple plan or recipe.  
 Begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, and juicer.  
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 Learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures.  
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 With help, measure and mark out.

Cut, shape and score materials with some accuracy.  
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**Technical Knowledge**

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**Cooking and Nutrition**

Explain where in the world different foods originate from.  
 Understand that all food comes from plants or animals.  
 Understand that food has to be farmed, grown elsewhere (e.g. home) or caught.  
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 Understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why.  
 Use what they know about the Eatwell Guide to design and prepare dishes.

**Year 3**

**Overview**

<p><b>How did humans survive the Stone Age?</b> Cooking - Making Bread</p>	<p><b>Where does chocolate come from?</b> Understanding Chocolate Designing our own packaging</p>	<p><b>What have archaeologists taught us about the Ancient Egyptians?</b> Canopic Jars/Death Masks</p>	<p><b>Cooking and Nutrition Vegetables and Seasonality</b></p>	<p><b>Commonwealth Sewing</b></p>
<p>In the first topic, the children are given the opportunity to bake bread. Thinking about simple ingredients, they will be encouraged to use a range of measuring and mixing skills</p>	<p>In this topic, the children are able to explore how chocolate is made and experience their own attempts to make it. They will be able to explain what they think about different types of</p>	<p>As part of the topic the children will use clay to make their own miniature jar which can be used to store an item and used in the home. They will explore using clay to make shapes and then</p>	<p>In their work on plants, the children will be encouraged to consider how they are used to grow and harvest fruits and vegetables. The children will be given an opportunity at the end</p>	<p>The children will use sewing skills to create their own flag design which represents them as an individual. The children will be encouraged to use basic stitching</p>

including kneading to create their loaves. They will then be asked to share their thoughts on the appearance and taste of the loaves.	chocolate. They will also create their own advertisement/packaging for chocolate considering their audience and the effect on the buyer. They will use computer programmes to change the appearance of an advert.	create their own piece with a functional lid. Linked to art, these will then be painted with a design of their choice.	of Term 4 to plant their own fruit and vegetables. Throughout Term 5, they will monitor their growth and be given the chance to use them in dishes at the end of the year.	skills around the outside and in the centre of the fabric.
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**Sticky Vocabulary**

Bread, ingredients, baking, mixing, kneading, loaf, flour, preparation, raising, heat, hygiene, stirring, measuring, weight, grams, millilitres, temperature, degrees, savoury, cutting, utensil, nutrition	Graphics, computing, advertising, consumer, customer, visual effects, designing, industry, purpose, ideas, products, evaluation, software, sweet	Properties, shape, tools, equipment, function, design, user, materials, measure, score, evaluation, alteration, criteria, accuracy	Seasonality, vegetables, fruit, seeds, prepare, grow, variety, heat, temperature, nutrition, balance, eatwell, ingredients, cook, healthy, recipe, hygiene	Sew, running stitch, back stitch, fabric, textiles, cut, shape, join, measure, accuracy, control, hem, design
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**Skills**

**Design**  
 Identify the design features of their products that will appeal to intended customers.  
 Use their knowledge of a broad range of existing products to help generate their ideas.  
 Design innovative and appealing products that have a clear purpose and are aimed at a specific user.  
 Explain how particular parts of their products work.  
 Use annotated sketches and cross-sectional drawings to develop and communicate their ideas.  
 When designing, explore different initial ideas before coming up with a final design.  
 When planning, start to explain their choice of materials and components including function and aesthetics.  
 Test ideas out through using prototypes.  
 Use computer-aided design to develop and communicate their ideas.  
 Develop and follow simple design criteria.  
 Work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment.

**Make**  
 With growing confidence, carefully select from a range of tools and equipment, explaining their choices.  
 Select from a range of materials and components according to their functional properties and aesthetic qualities.  
 Place the main stages of making in a systematic order.  
 Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures.  
 Use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components.  
 With growing independence, measure and mark out to the nearest cm and millimeter.  
 Cut, shape and score materials with some degree of accuracy.  
 Assemble, join and combine material and components with some degree of accuracy.  
 Demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product.  
 Join textiles with an appropriate sewing technique.

Begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.

### **Evaluate**

Explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose.

Explore what materials/ingredients products are made from and suggest reasons for this.

Consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product.

Evaluate their product against their original design criteria.

Evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.

### **Technical Knowledge**

Understand that materials have both functional properties and aesthetic qualities;

Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products;

Understand and demonstrate how mechanical and electrical systems have an input and output process;

Make and represent simple electrical circuits, such as a series and parallel, and components to create functional products;

Explain how mechanical systems such as levers and linkages create movement;

Ese mechanical systems in their products.

### **Cooking and Nutrition**

Start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world;

Understand how to prepare and cook a variety of predominantly savory dishes safely and hygienically;

With support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven;

Use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking;

Explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes;

Understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body;

Prepare ingredients using appropriate cooking utensils;

Measure and weigh ingredients to the nearest gram and milliliter;

Start to independently follow a recipe;

Start to understand seasonality.

## **Year 4**

### **Overview**

#### **Robots**

This Robot Unit, looks at historical robots as well as predicting what robots will be able to do in the future. Children explore toy robots and how their design has changed over time, including materials, components and use. After, the children look at how robots have developed and the jobs which robots are now required to do. They recognise that robots are widely used and have replaced humans to complete many jobs. They also discover robots to the rescue and robots in the news. Next, the children design a robot which has a defined purpose. The design brief needs to reflect the purpose, as well as including an electrical circuit. (This links to their

#### **Roman Shields**

This Roman shield unit first looks at what shields were used for, how they were used and the materials used to make them. The children investigate shield designs and the relevance of particular designs. Thinking about shield design, they decide which materials are most suitable for making a shield and why. The class are given the challenge of replicating these materials with household materials. Children write a set of instructions on how to make a shield using technical language and include a 'you will need' section. Next, the children will design their shield ensuring that their design reflects them or their interests. They are encouraged to use bold, simple

#### **Let's go fly a kite.**

This Let's Go Fly a Kite links to the 'Reduce, reuse and recycle' Science topic and harnessing wind power. It gives children opportunities to develop their understanding of frame structures and how they can be strengthened and stiffened. The children will discover information about a key event involving a kite that helped shape the world. They will gain knowledge and understanding about the parts and shapes of kites. This will help them when designing and making their own. Finally, children will test and evaluate their kites against design criteria they have created.

science topic, electricity). The children use junk which they have collected for the purpose to make their robot as well as include an electrical circuit. When completed the end product will be evaluated against the original design brief.

designs and include 3D elements, including a handle. The class use their design brief to make the shield using the given materials. When completed, they reflect on what went well, and what could be improved next time.

### Sticky Vocabulary

Automation, robot, oscillate, reciprocating, rotary, torque, android, assembly robot, autonomous robot, electronic component, infrared sensor, joint, motor, sensor, create, measure, mark out, shape, design criteria, materials, assemble, product, build, evaluate.

Shield, scutum, formation, metal protrusion, symbolise, Jupiter, Mars, God of war, wreaths, craftsmen, legion, 3 dimensional, score, function, measure, join, shape, combine, design criteria, materials, product, make, evaluate.

Key events, design and technology, ideas, kite, parts, function, bridle, line, tow point, keel, sail, spars, tail, shape, delta, diamond, rokkaku, sled, design criteria, prioritise, decoration, shape, materials, Structure, frame, strength, stiffen, test, evaluate.

### Skills

#### Design

Identify the design features of their products that will appeal to intended customers.

Use their knowledge of a broad range of existing products to help generate their ideas.

Design innovative and appealing products that have a clear purpose and are aimed at a specific user.

Explain how particular parts of their products work.

Use annotated sketches and cross-sectional drawings to develop and communicate their ideas.

When designing, explore different initial ideas before coming up with a final design.

When planning, start to explain their choice of materials and components including function and aesthetics.

Test ideas out through using prototypes.

Use computer-aided design to develop and communicate their ideas.

Develop and follow simple design criteria.

Work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment.

#### Make

With growing confidence, carefully select from a range of tools and equipment, explaining their choices.

Select from a range of materials and components according to their functional properties and aesthetic qualities.

Place the main stages of making in a systematic order.

Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures.

Use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components.

With growing independence, measure and mark out to the nearest cm and millimeter.

Cut, shape and score materials with some degree of accuracy.

Assemble, join and combine material and components with some degree of accuracy.

Demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product.

Join textiles with an appropriate sewing technique.

Begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.

#### Evaluate

Explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose.

Explore what materials/ingredients products are made from and suggest reasons for this.

Consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product.

Evaluate their product against their original design criteria.

Evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.

**Technical Knowledge**

Understand that materials have both functional properties and aesthetic qualities;

Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products;

Understand and demonstrate how mechanical and electrical systems have an input and output process;

Make and represent simple electrical circuits, such as a series and parallel, and components to create functional products;

Explain how mechanical systems such as levers and linkages create movement;

Ese mechanical systems in their products.

**Cooking and Nutrition**

Start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world.

Understand how to prepare and cook a variety of predominantly savory dishes safely and hygienically.

With support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven.

Use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking.

Explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes.

Understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body.

Prepare ingredients using appropriate cooking utensils.

Measure and weigh ingredients to the nearest gram and milliliter.

Start to independently follow a recipe.

Start to understand seasonality.

**Year 5**

**Overview**

<p><b>How did life change for children during the Victorian Period?</b></p> <p><b>What impact did Brunel have on life in the Victorian Era?</b></p>	<p><b>How has equality been promoted across the world?</b></p>	<p><b>What impact did The Ancient Greeks have on modern life?</b></p>	<p><b>How does the human body change through age?</b></p>
<p>The Victorian era was revolutionary when it came to inventions and engineering. They look at one structural engineer in more detail – Isambard Kingdom Brunel. They research how different bridges are designed and constructed. Using this research, they design their bridges making sure they stay within budget and the design brief.</p>	<p>Linking back to our Topic last term, the children research the Suffragettes. Before understanding what revolutionary women, they were, they learn how women did “women’s work” such as cooking. The children research different Victorian dishes and understand the types of food which were around during the Victorian Era. Using this knowledge they make their own Bread and Butter Pudding – a Victorian classic still made today.</p>	<p>The children are immersed in their Greek topic by sampling and creating ancient and modern Greek food. They use a range of skills and techniques to create a range of savoury dishes. Once they have sampled and researched Greek dishes, they will create their own Greek inspired dish.</p>	<p>Through this unit, the children will explore seasonality and understand how a variety of ingredients are grown, reared, caught and processed. They use the school garden to understand seasonality. They grow and harvest their own food which they will use to create their own dish. It is important for the children to recap on their knowledge of a balanced diet.</p>

<p>After making a prototype they carry out tests to see if their bridge can achieve the design brief.</p> <p>After all of this, they will evaluate their bridges and make recommendations to the next structural engineer who may attempt building their bridge.</p>			<p>They take this further by understanding processed and non-processed foods and the effect they have on their bodies.</p>
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### Sticky Vocabulary

<p>bridge, suspension bridge, function, innovative, design, specification, design brief, user, purpose, design brief, design, specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype</p>	<p>Ingredients, flour, baking soda, utensils, combine, fold, stir, pour, mix, whisk, shape, sprinkle</p>	<p>Mezze, tapas, olive, feta, tzatziki, pita, hummus, honey, pastry, herbs, spices, dish, savoury, ingredients, Mediterranean, balanced, toss, bake, fry, sauté, chop, drain, rinse, peel, simmer, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance</p>	<p>Harvest, seasons, seasonality, import, export, balanced diet, processed, carbohydrates, dairy, fat, sugar, protein, nutrients, minerals, vegan, vegetarian, pescatarian, allergy, intolerance</p>
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### Skills

<p><b>Design</b></p> <p>Use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market.</p> <p>Use their knowledge of a broad range of existing products to help generate their ideas.</p> <p>Design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user.</p> <p>Explain how particular parts of their products work.</p> <p>Use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas.</p> <p>Generate a range of design ideas and clearly communicate final designs.</p> <p>Consider the availability and costings of resources when planning out designs.</p> <p>Work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.</p> <p><b>Make</b></p> <p>Independently plan by suggesting what to do next.</p> <p>With growing confidence, select from a wide range of tools and equipment, explaining their choices.</p> <p>Select from a range of materials and components according to their functional properties and aesthetic qualities.</p> <p>Create step-by-step plans as a guide to making.</p> <p>Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures.</p> <p>Independently take exact measurements and mark out, to within 1 millimetre.</p> <p>Use a full range of materials and components, including construction materials and kits, textiles, and mechanical components.</p> <p>Cut a range of materials with precision and accuracy.</p> <p>Shape and score materials with precision and accuracy.</p> <p>Assemble, join and combine materials and components with accuracy.</p> <p>Demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product.</p> <p>Join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch.</p> <p>Refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.</p> <p><b>Evaluate</b></p>
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Complete detailed competitor analysis of other products on the market.  
 Critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make.  
 Evaluate their ideas and products against the original design criteria, making changes as needed.

**Technical Knowledge**

Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products.  
 Understand and demonstrate that mechanical and electrical systems have an input, process and output.  
 Explain how mechanical systems, such as cams, create movement and use mechanical systems in their products.  
 Apply their understanding of computing to program, monitor and control a product.

**Cooking and Nutrition**

Know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world.  
 Understand about seasonality, how this may affect the food availability and plan recipes according to seasonality.  
 Understand that food is processed into ingredients that can be eaten or used in cooking.  
 Demonstrate how to prepare and cook a variety of predominantly savory dishes safely and hygienically including, where appropriate, the use of a heat source.  
 Demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling.  
 Explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes.  
 Adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma.  
 Alter methods, cooking times and/or temperatures.  
 Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.  
 Independently follow a recipe.

**Year 6**

**Overview**

<b>How can we innovate?</b>	<b>What is around and beyond our planet?</b>	<b>How can we entertain?</b>
<p>In this topic, students will combine their scientific knowledge of light with their understanding of how parallel circuits work. They will discover how to connect power sources to light sources using cables and other equipment. These designs will be used in conjunction with the class' fundraising project as part of a shop-front installation.</p>	<p>Students will explore theories and practices of working machinery in this topic. They will discover how agencies built: satellites, space stations, rockets, aircraft and spacecraft that enabled astronauts to visit the moon and various space stations. This can be compared to how smaller vehicles and objects use motors to propel and transfer power from a source to create movement. Students will also create a model of the Solar System, using artistic skills and textile knowledge to create an accurate model. They will also be challenged to create a system that orbits around the sun, using a motor.</p>	<p>In the final topic of Year 6, students will have the opportunity to explore and develop all of the learned skills throughout KS1 and 2. They will research, design and create their sets, costumes and props for the end of year performance. Students will take advantage of the varying resources available to them whilst working to a plan. Once the designs have been actualised, they will be shown in the performance, giving students the opportunity to celebrate their creations and learning.</p>

**Sticky Vocabulary**

<p>function, innovative, design, specification, design brief, user, purpose, design brief, design, specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype, reed switch,</p>	<p>pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system,</p>	<p>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, frame structure, stiffen, strengthen,</p>
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toggle switch, push-to-make, switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip, control, program, system, input device,, output device, series circuit, parallel circuit	input, process, output	reinforce, triangulation, stability, shape, join, temporary, permanent
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Explain how particular parts of their products work.

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Generate a range of design ideas and clearly communicate final designs.

Consider the availability and costings of resources when planning out designs.

Work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.

### **Make**

Independently plan by suggesting what to do next.

With growing confidence, select from a wide range of tools and equipment, explaining their choices.

Select from a range of materials and components according to their functional properties and aesthetic qualities.

Create step-by-step plans as a guide to making.

Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures.

Independently take exact measurements and mark out, to within 1 millimetre.

Use a full range of materials and components, including construction materials and kits, textiles, and mechanical components.

Cut a range of materials with precision and accuracy.

Shape and score materials with precision and accuracy.

Assemble, join and combine materials and components with accuracy.

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Join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch.

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### **Evaluate**

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Demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling.

Explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes.

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