Hadley Wood Primary School

Design & Technology Curriculum Overview

Our Vision

…that every child will leave our school **confident** in their own abilities and excited about the future, with the strategies and skills to tackle tasks and situations in a **capable** manner and **caring** about their planet and their fellow humans.

Curriculum Intent:

Design and Technology is an inspiring, rigorous and practical subject. At Hadley Wood Primary School, we value the creative curriculum and believe that it can have a powerful and positive effect on children, helping them to become confident, creative learners who are able to express their individual interests, thoughts and ideas.

We encourage the children to use their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts considering their own and others' needs, wants and values. We aim to make links to designs and designers throughout history, providing opportunities for children to critically reflect upon and evaluate others designs and the overall effectiveness of the product before evaluating their own. As pupils progress, we support them to be able to think critically and develop a more rigorous understanding of design and technology.

We encourage children to develop as designers by ensuring they have the opportunity to broaden both their technical skills and their knowledge. Teachers plan a sequence of lessons inspired by exciting and engaging topics to ensure they have progressively covered the knowledge, understanding and skills required in the National Curriculum. The skills covered were devised by the Design and Technology Subject Lead – in collaboration with the teaching team – and are based on the National Curriculum objectives and also using the Chris Quigley objectives.

Children engage in a broad range of practical experiences to create innovative designs which solve relevant problems and improve children's ability to control materials, tools and techniques. Teachers implement the iterative design process by encouraging children to design based on prior knowledge, research, design criteria and real problems. Children with evaluate existing products and take risks when making new products, acquiring new skills and selecting from a wide range of materials and components. As part of the process children will be given time to evaluate and improve their products, using a design criteria to guide this reflection. Children will understand how key events and individuals in design and technology have helped to shape the world.

Through DT work in the classroom, the children at Hadley Wood Primary School have the opportunity to develop their skills in mechanisms, structures, textiles, mechanical systems, electrical systems and cooking and nutrition. These areas are developed continuously throughout the school from foundation stage through to year six and the children have the opportunity to revisit skills from previous years before learning new ones. We encourage children to express individuality in their work and to keep their own personalised sketchbooks where they can explore ideas, be inventive and take risks. When children leave Hadley Wood Primary School, we expect them to have a wide range of well-developed skills in the six areas of our curriculum that they can then build on and develop further as they continue in their education.

How we plan for and teach Design and Technology:

At Hadley Wood Primary School, DT is taught for three half terms per year with key skills alternating in each year group. Teachers plan sequences of lessons across the half term that will build on and develop the children's skills culminating in a final piece.

The skills and knowledge that children will develop throughout each DT topic are mapped across each year group and across the school to ensure progression. The teaching of DT across the school follows the National Curriculum through the use of Design and Technology Association's 'Projects on a Page' documents. Children design products with a purpose in mind and an intended user of the products. As evidenced within the Long Term Overview below, the coverage of that National Curriculum knowledge and skills is woven through each unit and many of the skills are repeated multiple times across the pupils education, to reinforce confidence with this subject.

Food technology is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this. Each year the children take part in one unit of food technology, researching, designing, preparing and creating food in our dedicated children's kitchen. Children have the opportunity to grow their own fruit, vegetables and herbs at our onsite garden and use these within their cooking where possible.

The teaching of DT follows the research, design, make and evaluate cycle, with technical knowledge and relevant vocabulary shared at each stage. The design process is always linked to real life, relevant contexts to give meaning to the learning. When making their products, the children are given choice and a wide range of tools and materials to choose from. When evaluating, the children are taught to evaluate their own products against the initial design criteria to see how well it has met the needs and wants of the intended user and to identify any changes that could be made.

All units will include the following objectives:

- **Investigative activities** – where children critically evaluate existing products to inform their own design considerations.
- **Focused practical tasks** – where children are given the opportunity to learn and practise new skills and techniques which they can utilise in making products.
- **'Design and make' assignments** – where the children are given the opportunity to be creative, using what they have learned through previous activities.
- **Evaluating an end product** – where children decide if it is fit for its purpose and what changes could be made to improve their design.

What you will see in our Design and Technology lessons:

1. Every lesson is carefully planned around **an enquiry question (the Big Question) for children to answer.** By ensuring that these questions spark children's enquiry and **curiosity**, children are engaged in their learning and want to find out the answer. Lessons are purposeful and result in children gaining a new understanding of the world around them.

2. In each lesson the **learning objective** is designed so that children have a powerful understanding of the skills and understanding they are developing in the lesson. **Success criteria** define the features of the learning intention in the context of the activity so that children can identify what they are aiming for and how well they are doing.

3. Learning is effectively sequenced by sharing prior learning **'Flashbacks or Blast Offs'** at the start of each lesson/topic/new concept. We recognise that children are more likely to retain new learning if it connected to prior understanding. Building blocks help pupils of all levels to connect new learning with existing concepts and promote **independence**.

4. Teachers utilise a range of strategies drawn from the Walkthru principles developed by Tom Sherrington including: **Think, Pair, Share, Quizzing, Cold Calling, No Opt Out opportunities or quizzing** to engage pupils and draw links between prior and new learning. Different levels of challenge and **'what if'** challenges help to ensure our children have high aspirations of themselves and strive to be the best they can be.

5. Teachers skilfully use the **'Deliberate Mistake'** approach to learning to build pupil **resilience** to failure alongside their ability to work independently to problem solve. This embeds the concept that making mistakes is integral to the learning process.

Design and Technology Long Term Overview: EYFS – Year 6

Development matters			**Curriculum provision**	**Contribution on wider Design and Technology knowledge and what later content this prepares for**
3-4 years old	Understanding the World Personal, Social and Emotional Development	Select and use activities and resources, with help When needed. This helps them to achieve a goal they have chosen or one which is suggested to them.	Pupils will have access to a wide range of small world equipment both in the indoor and outdoor classroom. This will provide opportunity for exploration and creative play. Pupils will have access to a range of construction used to create their own designs/ toys, LEGO, junk modelling, wooden blocks, large blocks – outside area, etc.Pupils will use and engage with a range of programmable toys – Beebots which they use to programme instructions. Pupils will design and create their own 'Super Vegetables' as part of their unit of work exploring Supertato. Pupils will design and then make their own pancakes and chocolate crispy cakes at Easter. Adults will discuss the ways in which melting changes the state of the chocolate and the difference between hot and cold. This will enable adults to reinforce the importance of health and safety when handling hot food. . Good hygiene and the correct use of utensils will be explored here with adult support during this unit of work.	Exploratory activities in EYFS such as building LEGO structures and dens supports an understanding of how things work and can be improved in preparation for the unit of work on levels and pulleys in **Year One.** Developing an understanding of the importance of good hygiene and health and safety will prepare pupils for using a range of utensils in the **Year 1 unit of work on Fruit Kebabs.** The design and creation of theatrical masks to support the pupil's understanding of literary texts such as The Colour Monster prepare pupils for unit of work in **Year 2 on designing and making their own puppets.** Exploration of building and testing different free-standing structures throughout the EYFS stage help to prepare pupils ability to **design, test and improve free-standing structures in Year 1.**
	Physical Development	Use large-muscle movements to wave flags and streamers, paint and make marks. Choose the right resources to carry out their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors		
	Understanding the World	Explore how things work		
	Expressive Arts and Design	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Create closed shapes with continuous lines, and begin to use these shapes to represent objects.		

Reception	Physical Development	Progress towards a more fluent style of moving, with developing control and grace. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.	Pupils will make play dough on a regular basis with the adults in EYFS. Pupils will be provided with the opportunity to make their own houses using junk modelling. Pupils will design and create their own face masks and puppets to support their understanding of a core Literary text e.g. The Color Monster goes to School. The classroom environment is set up to include a messy play area, themed role play area alongside the outdoor home role play area. Pupils are encouraged to design, create, and make their own designs which complement their creative play. The classroom environment includes a small world Dolls House – furniture and figures. Pupils can create house/den etc. using a range of materials, e.g. Poddely, large cardboard boxes, tents, material, etc. Fine motor skills are developed throughout the course of the day through dough disco activities, small world play, cutting activities which develop the use of scissor grip etc. Pupils are encouraged to use their own tools e.g., paintbrushes and cutlery independently from the onset of the Reception year. Children are encouraged to make selections of the types of materials for their creative designs. A wide range of materials and resources are made available to them throughout the course of the day.	
	Expressive Arts and Design	Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.		
ELG	Physical Development - Fine Motor Skills	Use a range of small tools, including scissors, paintbrushes and cutlery		
	Expressive Arts and Design – Creating with Materials	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.		

Year 1	Substantive Knowledge Content based around a Big Question	Recurring themes, ideas and language	Contribution on wider Design and Technology knowledge and what later content this prepares for
Autumn 2	**Food: Preparing fruit and vegetables** Product: Fruit feast to be shared with parents Understand where a range of fruit and vegetables come from Use a range of utensils to cut, slice, peel, grate and squeeze Understand and use basic principles of a healthy diet Generate ideas based on simple design criteria Evaluate ideas and final product	Pupils begin to understand where **fruit and vegetables** come from and how some products can be grown at home whilst others must be produced abroad due to climate. They explore the **'tastes' and 'textures'** of different fruit and use this experience to agree simple **design criteria** for a **fruit feast** that will appeal to the **'end consumer**'. Pupils learn how to safely use a **range of kitchen 'utensils'** and develop their fine motor skills to **'cut', 'slice', 'peel', 'grate' and 'squeeze'** fruit. They '**evaluate'** their final **'product'** with the **'intended user**' in mind.	Pupils begin to develop an understanding of where different food originates and why. They connect learning about healthy lifestyles and diet, from other areas of the curriculum, to work in D&T. Pupils begin to understand the importance of using cooking utensils safely and develop their fine motor skills to cut, peel, grate and squeeze fruit. **These skills are further developed in Year 3 when they prepare different vegetarian toppings for a pizza and in Year 6 where they make a dish based on Fair Trade Products.**
Spring 1	**Mechanisms: Sliders and Levers** Product: Information book for a Year 1 pupil based on a significant person in history. Understand that different mechanisms produce different types of movement Select from and use a wide range of materials and components according to characteristics and use simple cutting, shaping, joining and fastening skills Generate ideas based on simple design criteria Evaluate ideas and final product	Pupils develop an understanding of book designs by comparing and contrasting products over time. They analyse construction methods to gain an understanding of the function of moving parts including **'sliders' and 'levers'** and develop the vocabulary to describe these functions including **'pivot', 'left', 'right', 'push', 'pull', 'up' and 'down'**. Through focused tasks, pupils select and use tools to **'cut', 'shape' and 'join' paper/card to produce simple 'mechanisms' such as 'flaps', 'sliders' and 'levers',** understanding that different mechanisms produce different movement. They **'evaluate'** their product in relation to the **'purpose', 'user' and simple 'design criteria'.**	Pupils begin to understand the importance of the design process in order to meet a design brief for a specific audience. They develop their understanding of the movement of a variety of mechanisms and the function of a mechanism in a product. Pupils begin to self and peer evaluate their outcomes against the design brief and make suggested improvements. Through KS1/KS2 pupils continue to build on these skills of planning and evaluation. **Pupils' understanding of mechanisms is built on in Year 2 by exploring wheels and axles.**
Spring 2	**Structures: Freestanding structures** Product: Toy chair for a teddy bear Know how to make freestanding structures stronger, stiffer and more stable Select from and use a wide range of materials and components according to	Pupils explore and develop an understanding of **'freestanding structures'** to enable them to plan efficiently to meet the design brief. Fine motor skills are developed as pupils continue to use tools to **'cut' and 'join'** their chosen materials together to make a chair for a Teddy. Through focused tasks, they **'fold'** paper and card in different ways and are encouraged to find ways to make their structures **'strong' and 'stable'**. Pupils	Pupils continue to understand the importance of the different stages of the design process including exploring existing products to influence initial designs and considering purpose to establish criteria for a successful product. By developing an understanding of the design process, children can select tools and materials effectively and formulate clear plans for construction. **This prepares pupils for measuring,**

	characteristics and use simple cutting, shaping, joining and fastening skills Generate ideas based on simple design criteria Evaluate ideas and final product	test the **'functionality'** of their chairs, **'evaluate'** the '**product'** they have made and make suggestions for improvement.	**cutting and joining materials together effectively when assembling axles in Year 2.**
Year 2	**Substantive Knowledge Content based around a Big Question**	**Recurring themes, ideas and language**	**Contribution on wider Design and Technology knowledge and what later content this prepares for**
Autumn 1	**Food: Understand the history behind bread** Product: Speciality bread to be served to children in the dining hall at lunchtime Select and use appropriate utensils to measure and combine ingredients Evaluate ideas and final product taking into account the views of others when making improvements	Pupils understand where **bread** first originated from including the **historical symbolism** and how it has evolved over time. Pupils explore bread, through **'taste test evaluations',** understanding how different **'ingredients'** are used to create different '**products**' and their '**designs**' in relation to specific **'audiences'**. Through focused tasks, pupils are given opportunities to follow and adapt '**basic recipes'**, practise '**weighing'** accurately and develop '**cutting', 'shaping', 'rubbing' and 'kneading**' skills. They explore whether the final product has met the **'intended design outcome'** and **'evaluate'** their product critically.	Pupils build on their knowledge of where ingredients come from and the production processes. This unit supports pupil understanding of hygiene, nutrition, healthy eating and a varied diet in preparation for KS2 where children are exposed to creating a wider range of dishes. Pupils develop confidence with using measuring scales accurately, are able to follow recipes step by step and adapt them for an intended audience, **This prepares pupils well for designing and making their own burgers in Year 6 and making dough for pizza bases in Year 3.**
Spring 1	**Sewing: Puppet of an animal for a hot or cold climate** Purpose: Puppet for a puppet show to perform to their peers. Understand the purpose, structure and functions of joins Cut and join fabrics with simple techniques Follow a design to make a product, joining fabrics with simple stitches Evaluate the products against the design criteria	Pupils learn about the **purpose of puppets** for **entertainment** and consider the sort of puppet that should be made and why. They will consider the different '**joining techniques'** and which media and materials they will use. Through focused tasks pupils are given the opportunities to explore different **sewing techniques** and develop their confidence with the '**running stitch'** and the effectiveness of **securing fabric together**. Pupils will explore whether the final product has met their **'intended design outcome'** and '**evaluate'** their product critically.	Pupils begin to develop their knowledge of joining different fabrics using sewing techiques and considering the use of different mediums to add detail to their puppets. **The skill of sewing prepares the pupils for designing and making a bag for a Bronze Age hunter gatherer and in Year 6 when they complete their "make, do and mend," unit as part of the World War 2 topic.**
Spring 2	**Mechanisms: Wheels and axles** Product: Toy ambulance for a 6-year-old Assemble fixed and free axles; mark out, hold, cut and join materials and components correctly Evaluate ideas and final product taking into account the views of others when making improvements	Pupils evaluate a range of products with **'wheels'** and '**axles'** before looking at the '**purpose'** and **'key features'** of an **ambulance**. They generate simple **'design criteria'** and develop their own ideas for making a toy ambulance through talking and drawing. Through focused tasks, pupils learn how to '**assemble fixed and free axles**'. They explore the use of a range of materials for different parts of their product, considering	Pupils build their skills to understand the importance of how to create mechanisms and measure accurately **in preparation for the Year 4 unit on shelters. In Year 5 pupils consolidate their understanding of mechanisms** and are encouraged to independently select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement,

		'function' and **'strength'** and how to **'measure', 'cut' and 'join' materials** together effectively.	where they are given the creative freedom to design their own Viking boat.
Year 3	**Substantive Knowledge Content based around a Big Question**	**Recurring themes, ideas and language**	**Contribution on wider Design and Technology knowledge and what later content this prepares for**
Autumn 1	**Mechanical systems: Levers and linkages** Product: Information book about the Himalayas for a Year 2 pupil Analyse construction methods used to create moveable books, linkages and levers Select and use appropriate materials and equipment to measure, cut, join and assemble components to form a working lever or linkage mechanism Understand the difference between fixed and loose pivots Evaluate the functionality and quality of their product using technical vocabulary to explain	Building on knowledge gained of **'sliders' and 'levers'** in Year 1 and **'wheels' and 'axles'** in Year 2, pupils evaluate existing **moveable books** and products to develop their understanding of how **'levers' and 'linkage mechanisms'** operate and create specific movements. Pupils add to their understanding of mechanisms that cause movement, exploring different types of **'joins'** and how the **application of transference forces** can create '**direction' and 'movement'.** They identify the necessary **'components'** used to form **basic levers such as 'pivots', 'outputs', 'guides' and 'inputs'.** Applying the prerequisite skills of 'c**utting', 'measuring', 'shaping' and 'joining',** pupils assemble basic lever and linkage mechanism to create moveable **'pop up' book designs.** They continue to develop accuracy and quality through the **selection of appropriate tools and materials**, and on-going evaluations of functionality against specific design criteria.	Pupils build upon existing knowledge of the design process in relation to analysing products, planning, using accurate diagrams and combining materials to form a final product. They develop their ability to explain why specific mechanisms are most effective and suited to specific products and movements. **This unit prepare pupils for the challenges of designing and making a mechanical system as part of a fairground ride in Year 5.**
Spring 2	**Textiles: 2-D shape to 3-D product** Product: Bag designed for a Bronze Age hunter gatherer to collect their findings Investigate and analyse products related to the final product Select and use a range of tools to join fabric securely Use simple patterns and templates for marking out including seam allowances Apply understanding of how to strengthen and reinforce material	Pupils explore a range of **existing bags** to determine **suitability of material and construction**. They compare this with the use of animal hides in the Bronze Age. Through investigating how materials are **'joined' and 'finished' using a 'range of stitches',** pupils develop simple design criteria for a product with an end user in mind. They create a simple **'pattern'** and select **appropriate tools and materials** before **'cutting', 'joining' and 'finishing'** their final bag. Pupils evaluate the outcome against the intended use.	Building on the skills of stitching**, pupils will further develop their understanding of sewing skills in Year 6** to make more complex designs for a Make Do and Mend project.
Summer 2	**Food: Understand and apply the principles of a healthy and varied diet**	Pupils learn about the **origins of pizza** before **investigating and evaluating a range of existing pizzas for taste and texture**. They carry out and record market research using **IT tools** to determine the	When added to the knowledge learned in Year 4, 5 and 6 about preparing food safely and hygienically, pupils will leave school armed with specific examples of food preparation skills that lead to successful

	Product: Pizza inspired by the local target audience Investigate and analyse a range of existing pizzas in order to develop design criteria Select appropriately from a range of utensils Continue to develop food preparation skills	design criteria most suitable for the target audience. Pupils select and explain their use of **ingredients and the tools** and **equipment** required to prepare toppings. They continue to develop a range of food preparation skills such as **'peeling', 'grating' and 'cutting and slicing' using the 'bridge' and 'claw' techniques**. Pupils evaluate the final product with reference to the design criteria and the opinion of others.	cooking. Investigating the origins of pizza will help pupils appreciate how food has developed and been influenced by a variety of cultures and places. In learning about selecting and using appropriate utensils and equipment to prepare and combine ingredients, **pupils are prepared to carry out more accurate making and measuring in Year 4, 5 and 6.** Learning about where food comes from and how it influences modern recipes, enables children to start asking questions about what new recipes were influenced by – crucial for work on Fair Trade recipes for food in Year 6.
Year 4	**Substantive Knowledge Content based around a Big Question**	**Recurring themes, ideas and language**	**Contribution on wider Design and Technology knowledge and what later content this prepares for**
Autumn 2	**Structures: Shelters** Product: Design and make a shelter to create an earthquake proof building Investigate and analyse different materials used to build shelters Select and use a range of tools to join materials securely Evaluate the final product for functionality	Pupils explore the importance of the **safety features of an earthquake shelter** and how the materials use can provide protection during an earthquake. Pupils choose appropriate **tools to join materials securely and measure materials** accurately. They will test their products to ensure the safety and security of their final product and **evaluate the functionality.**	This unit prepares the children for continuing to develop their material selection skills and develop measuring and cutting skills. **This prepares pupils for making Viking Long Boats in Year 5 and provides cross curricular links to Geography and Science in upper KS2**.
Spring 1	**Food: Design and create a recipe based on seasonal produce** Product: A soup or dish with produce found in the UK in January/ February Investigate and analyse a range of existing soups in order to develop a design criteria Research and analyse the nutritional value of different types of soup Develop a recipe and consider the tools needed to create the soup Evaluate the success of the final product	Pupils take inspiration from recipes and cultures around them to design a seasonal dish that appeal to the **target audience**, considering their likes and dislikes as well as the **nutritional value** of the products used e.g. the importance of eating a balanced diet including vegetables. They will **develop the recipe** and consider the tools needed to cut or peel the vegetables and how this will be combined with different seasonings and stock to produce the final product. They will evaluate the success of their soup or seasonal dish, through **taste testing and showcasing their designs to their target audience**.	Pupils use the knowledge developed in this unit to prepare them to **design a burger in Year 5** taking into account the nutritional content of different food choices. This also supports the pupils in **Year 6 to design a dish based on Fair Trade produce.**
Spring 2	**Electrical systems: Simple circuits and switches**	Pupils develop an understanding of **board game designs** by **comparing and contrasting products** and **analysing construction methods**. Through an	Pupils continue to understand the importance of the different stages of the design process, exploring existing products to influence initial designs and

	Product: Children's board game to enhance knowledge of the Ancient Egyptians Explore a range of board games and how they have developed over time Investigate the use of simple circuits to enhance the appeal of board games Construct a circuit with basic components, join and combine materials according to their functional properties and aesthetic qualities	evaluation of how products meet a user's needs, pupils identify strengths and areas for development that influence their own designs. They continue to broaden their understanding of **'electricity**' in science in order to assemble '**basic circuits'** as part of their design. They identify the **'components**' required for a **'switch' i**n order to produce a working product and make design choices to reflect this. By identifying the main stages of making their product, pupils select appropriate tools and techniques. Refining skills related to construction, children **'measure', 'mark out', 'cut' and 'shape' a range of materials, using appropriate tools, equipment and techniques**. To complete their board game products they **'join' and 'combine' materials and components accurately in 'temporary' and 'permanent' ways,** enabling them to make continuous choices related to a final outcome.	considering purpose to establish criteria for a successful product. Based on an understanding of construction techniques from previous years pupils become more aware of the range of techniques to accurately assemble, join and combine materials. **Pupils will develop their understanding of electronic circuits and specific components in Year 5.**
Year 5	**Substantive Knowledge Content based around a Big Question**	**Recurring themes, ideas and language**	**Contribution on wider Design and Technology knowledge and what later content this prepares for**
Autumn 2	**Mechanical systems: Pulleys or gears** Product: Fairground Ride Design and make a mechanical system to make a fairground ride move Design and make a wooden construction to support a mechanical system Use sawing, cutting, drilling, gluing and sanding	Building on previously taught skills, **precise 'measuring', 'cutting' and 'joining' skills** are developed to create a **fairground ride** with a specific audience in mind. Pupils further develop their understanding of circuits from Year 4 to allow their fairground rides to move on their own. Through focused tasks, they learn about different sized **'gears', investigate 'direction' and 'speed of rotation',** and **build working circuits**. Pupils develop '**measuring', 'marking', 'cutting', 'shaping' and 'joining'** skills using a range of tools as appropriate. Finally, pupils critically evaluate the '**quality' of their product, the 'manufacture', 'functionality', 'innovation' and 'fitness for purpose',** by comparing it to the original design specification.	This unit consolidates previous experiences of simple mechanical systems **(Year 2)** as well as work incorporating simple electrical circuits and switches **(Year 4).**
Spring 2	**Food: Celebrating culture and seasonality**	Throughout the D&T curriculum in KS2, pupils learn the skills of product design, including extending the range, and evaluating products suggesting improvements. In	When added to the knowledge that children gain in Years 4, 5 and 6 about **preparing food safely and hygienically,** pupils will leave school armed with

	Product: Burger as a new item on the school dinner menu Research who invented the burger and investigate the impact of burgers on American culture Research and analyse the nutritional value of various types of burgers Choose a burger recipe according to sensory research Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients Evaluate the final product using a design specification	this unit, pupils 'research' the origins of the burger and its impact on American culture. They **'analyse'** the findings of research into the **'nutritional value'** of a range of burgers, as well as carrying out '**sensory evaluations'.** From this, pupils design their own **burger 'recipe',** communicating their intentions through **'exploded diagrams'**. They select and use **'utensils**' and '**equipment'** to accurately '**measure'** and **'combine'** appropriate **ingredients, 'shape a patty'** and finally '**cook**' their product. Pupils '**evaluate'** their burger against their design specification, with the intended 'user' in mind.	specific examples of food preparation skills that lead to successful cooking. This unit also builds on the childrens' knowledge of **healthy diets** and prepares them to design and cook a recipe based on Fair Trade products in Year 6.
Summer 2	**Structure: A floating boat** Product: Viking Long Boat Research the structure and materials used in a Viking Long Boat Design a floating structure Select appropriate tools and materials to build the structure Build and create the boat, using accurate measuring and joining skills Evaluate the final product using a design specification	Pupils research and consider the **structure of a Viking Long Boat,** including how it robustly sailed on rough seas for long distances. They **design a floating structure** based on the original style and consider how to best attach a sail and oars to promote movement. Pupils '**measure', 'mark out', 'cut' and 'shape' a range of materials, using appropriate tools, equipment and techniques.** To complete their Viking Long Boat they **'join'** and '**combine'** materials. The boats are then tested to ensure they meet the design specifications.	This unit provides further consolidation of pupils cutting and joining skills and science knowledge of materials. This will provide pupils with the knowledge needed for the Year 6 prop design unit.
Year 6	**Substantive Knowledge Content based around a Big Question**	**Recurring themes, ideas and language**	**Contribution on wider Design and Technology knowledge and what later content this prepares for**
Autumn 2	**Textiles: Combining different fabric shapes** Product: Cushion linked to 'Make Do and Mend' campaign of WW2 Disassemble a cushion to investigate and evaluate how a cushion is made Communicate design ideas using a diagram and step by step planning Develop skills of threading a needle, joining textiles and using a range of stitches Select from and use a range of tools and equipment to make a cushion that is accurately assembled and well finished	This unit, to **create a cushion**, builds on **sewing skills** learned in Year 3: making a bag for a Bronze Age hunter gatherer. Having developed an understanding of '**Make Do and Mend'** through work in history, pupils consider how to **'repurpose'** and **'recycle' materials**. Through focus tasks, they learn to '**measure' and 'cut' fabric, 'pin', 'sew' and 'join'** materials accurately using a variety of **'stitches'.** They consider a range of ways of '**decorating'** their cushion. Pupils evaluate their final product for '**functionality' and 'aesthetics'.**	In KS3 children continue to design, make and evaluate. Through a variety of creative and practical activities, pupils are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They work in a range of domestic and local contexts. This unit engages the **fashion** context.

	Evaluate the final product for functionality and aesthetics		
Spring 2	**Food: Understand the processes behind creating dishes showcasing Fair Trade produce** Product: Make a dish based on Fair Trade Products Explore and make links to foods using different fair trade products Make choices about ingredients through evaluation and testing Use a variety of tools and equipment for spreading, grating and cutting	Pupils consolidate their understanding of recipe design and ingredient choice to research and create a dish which "heroes" **Fair Trade produce** and consider the impact on the farming communities that produce these products. Pupils research and **design a recipe, making choices about ingredients though evaluation and testing**. Using the skills gained throughout school they prepare the ingredients using a variety of tools and decide how best to cook the dish.	At KS3, as part of their work with food, pupils are taught **how to cook and apply the principles of nutrition and healthy eating**. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life
Summer 2	**Computer Aided Design** Product: Multifunctional Electrical Navigation Tool Create a design based on a design specification Programme a Micro:bit as a electric cardinal compass or pedometer Choose sustainable resources for the final design Generate the final product design using "Tinkercad" Produce a product pitch Evaluate the final product for functionality and aesthetics	Building on the construction and design skills throughout the D and T curriculum, children are given a **product brief** and create **a multifunctional electrical navigational tool.** They use a computer programme to create an **electrical cardinal compass** using a **Micro:bit,** some pupils will also programme a pedometer or light. They develop their design to be held within a rucksack or another **portable product**, focussing on using **sustainable resources** and carefully selecting the design shape for maximum **functionality.** The final design is constructed using **Tinkercad (a computer aided design programme),** tying together the programming elements of the computing curriculum and the importance of making links between design and technology in the modern world. To further challenge themselves, each pupil creates a **product pitch** with an aim to sell their product to potential consumers.	This unit prepares children for skills such as **selecting from and using specialist computer programmes to create the designs of the future. It ties together the computing and D and T curriculum,** promoting a focus on sustainability and the importance of taking responsibility for our carbon footprint as Global citizens.