

Curriculum Vision Statement for DT:

At Kingsway Primary School, we aim to provide all children with a rich, broad and balanced curriculum, which prepares them for life beyond primary education. Design Technology is an inspiring, rigorous and practical subject. Our DT curriculum combines skills, knowledge, concepts and values to enable children to tackle real problems thus improving analysis, critical thinking, problem solving, practical and evaluation skills.

Through our DT curriculum, it is our vision that children are inspired by, and learn to become engineers, designers, chefs and architects in order to create a range of structures, mechanisms, textiles, electrical systems and food products with a real life purpose. We believe that high-quality DT lessons (involving the designing, making and evaluating process of products to solve real and relevant problems within a variety of contexts), will inspire children to think independently, innovatively and develop creative, procedural and technical understanding.

It is the vision of Kingsway Primary School that a unit of Design Technology is taught once in each long term (one of these units being related to food) across the academic year. Other opportunities for Design Technology to be implemented are also provided throughout the school year such as in creating products for our annual Enterprise Fair. Skills from across the curriculum; mathematics, science, computing and art are applied throughout our Design Technology curriculum and many Design Technology projects link to themes taught, where applicable, to ensure design and technology work is purposeful and relevant. The schools core values of Kindness, Perseverance and Success should also be at the forefront of children's minds when carrying out practical activities and completing Design Technology projects.

Aims

At Kingsway Primary School, our curriculum for design and technology aims to ensure that all pupils:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world,
- Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users,
- Critique, evaluate and test their ideas and products and the work of others,
- Consider their own and others' needs, wants and values to think and creatively solve problems as both individuals and members of a team,
- Understand and apply the principles of nutrition and learn how to cook,
- Reflect upon, and evaluate, past and present designs and technology identifying uses and effectiveness,
- Know about great designers and understand the historical and cultural significance of their work.

Year			
		Knowledge	Skills
RA	All about me	Daily opportunities for children to: <ul style="list-style-type: none">• Use tools and materials• Practise using tools and techniques• Use construction kits and blocks to make models Focus teach: <ul style="list-style-type: none">-Scissor skills - Christmas cards and crafts - cut and stick items on a Christmas tree, create a moving snowman/father Christmas using a split pin.	

		<p>-Make a puppet of a character. -Construction - Build models of familiar objects using Lego, Duplo, Blocks, Mobilo etc. - Food -</p> <p>EY Outcomes They safely use and explore a variety of materials, tools and techniques.</p>	
RSp	What a wonderful world	<p>Daily opportunities for children to:</p> <ul style="list-style-type: none"> • Use tools and materials • Practise using tools and techniques • Use construction kits and blocks to make models <p>Focus Teach:</p> <p>-Food - Know where food comes from. -Food - Try different fruits and make a fruit smoothie. -Construction - Designing/building houses linked to theme or book. -Construction - Make own instruments out of junk modelling to join in with Chinese celebrations. -Sewing - threading and using binca -Mechanisms - Lift the flap books</p> <p>EY Outcomes They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. They safely use and explore a variety of tools and techniques.</p>	
RSu	SuperTato	<p>Daily opportunities for children to:</p> <ul style="list-style-type: none"> • Use tools and materials • Practise using tools and techniques • Use construction kits and blocks to make models <p>Focus Teach:</p> <p>-Food - healthy eating super hero foods -Food - Try different vegetables and use the vegetables in the book to make soup Sewing, weaving - patterns, different mediums like paper and thread for super capes. -Construction - Design and make a new super vegetable using craft range media Construction - Make a trap using bricks/junk modelling to capture the evil peas. -Construction - Design, draw and make superhero vehicles/ dens</p> <p>EY Outcomes Children develop their own ideas through selecting and using materials and working on processes that interest them. Through their explorations they find out and make decisions about how media and materials can be combined and changed</p>	

<p>1A</p>	<p>Animals around the world</p> <p>Question: What would be a healthy picnic snack to take to the zoo? Can you present in an interesting way to create an animal?</p> <p>Outcome: Design and create a healthy picnic snack (fruit salad/kebab) to take to the zoo.</p>	<p>Aspect: Food and Nutrition Focus: Preparing fruit and vegetables</p> <ul style="list-style-type: none"> • Know how to design a product for a specific purpose. • Be able to talk about what they eat at home. • Understand it is important to wash hands before preparing food and to wash fruit and vegetables before eating it. • Know fruit and vegetables are part of a balanced diet and 5 portions of fruit and vegetables are recommended every day. • Be able to use the senses of sight, smell, taste, texture along with sensory vocabulary to describe fruit and vegetables. • Know fruit and vegetables can be farmed or grown at home e.g. carrots, cucumbers, tomatoes, apples, strawberries, • Be able to name and know how to use simple tools with help to prepare food safely e.g. peeler, grater, knife) • Know how to prepare different fruits and vegetables e.g. peel, slice, grate, chop. • Know how to evaluate a product against a design brief. <p><i>Key Vocabulary: fruit and vegetable names, names of equipment and utensils, sensory vocabulary, soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, hygiene. assemble, design, evaluate, purpose, ideas,</i></p>	<p>Key Skills:</p> <p>Design</p> <ul style="list-style-type: none"> - Understand what design is. <p>Design appealing products for a particular user based on simple design criteria.</p> <ul style="list-style-type: none"> - Begin to draw on their own experience to help generate ideas through investigating a variety of fruit and vegetables. - Use talk and simple drawings/words their ideas for design. <p>Make</p> <ul style="list-style-type: none"> - Make their own design using appropriate techniques. - Use simple utensils and equipment safely e.g. to peel, cut, slice, squeeze, grate and chop - Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. <p>Evaluate</p> <ul style="list-style-type: none"> -Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. -Evaluate their product by answering questions about what they have made and how they have gone about it. <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> - Uses basic food handling hygiene practices and personal hygiene. - Understand that all food comes from plants or animals. - Knows of some food that is farmed, caught or grown. - Know about the need for a variety of foods in a diet and know about the Eatwell plate. - Begin to name some fruits and vegetables they know to be healthy for five a day. - Begin to use techniques such as cutting, peeling and grating.
<p>1Sp</p>	<p>Toys</p> <p>Question: How could we make a book exciting and interactive for a younger child?</p> <p>Outcome: Design and make a moving picture for a book.</p>	<p>Aspect: Mechanism Focus: Sliders and simple levers</p> <ul style="list-style-type: none"> • Understand that mechanisms are parts that make things work and that different mechanisms can produce different types of movements e.g sliders can be used to make vertical or horizontal movements, levers can be used to pivot around a point, wheel mechanisms can make circular movements. • Be able to identify a lever and a slider in an existing product. • Be able to decide on a design criteria for a specific product and design a moving picture that uses levers and/or sliders. • Know and explain how to create a working slider. • Know and explain how to create a working lever. • Know and use technical vocabulary relevant to levers and sliders. • Be able to construct a simple slider or lever to make a moving picture. • Use tools and equipment correctly —scissors, split pins, tape, glue. • Evaluate their slider and lever picture against the design criteria. 	<p>Key skills:</p> <p>Design</p> <ul style="list-style-type: none"> - Generate ideas based on simple design criteria and their experiences. - Plan by suggesting what to do next. - Use talk and simple drawings/words their ideas for design. - Model their ideas in card and paper (create mock ups) <p>Make</p> <ul style="list-style-type: none"> - Use tools (scissors, hole punch) safely. - Assemble, join and combine materials and components together using a variety of methods e.g. glue, masking tape. - With help, can measure, mark out, cut and shape a range of materials. <p>Evaluate</p> <ul style="list-style-type: none"> - Explore a range of existing books and everyday products that use simple sliders and levers. - Evaluate products by answering questions about what they have made and how they have gone about it. <p>Technical knowledge</p>

		<p>Key Vocabulary: mechanism, slider, lever, pivot, slot, bridge/guide, card, masking tape, fulcrum, split pin, join, pull, push, vertical, horizontal, straight, curve, forwards, backwards, assemble, design, evaluate, purpose, ideas, user, function</p>	<p>-Explore and use mechanisms [for example, pulleys, levers, sliders, wheels and axles], in their products.</p> <ul style="list-style-type: none"> - Uses some technical vocabulary correctly in projects they are undertaking.
1Su	<p>Kingsway past and present</p> <p>Question: What can you invent to improve our local community park?</p> <p>Outcome: Design and make a playground/playground equipment considering materials and purpose.</p>	<p>Aspect: Structures Focus: Freestanding structures</p> <ul style="list-style-type: none"> • Know that structures are built for a purpose e.g. bridges, chairs, buildings. • To explore existing buildings and playground products • Know that freestanding structures can stand up without being attached to anything and need to support their own weight. • Know structures with a wider base are more stable and less likely to fall over. • Know structures that are strong and rigid can support more weight. • Understand how structures can be made stronger and stiffer e.g. by the use of materials (e.g card is stronger than paper) through folding and layering, making sure parts and materials are properly joined. • Know that a range of tools can be used for different purposes, e.g. scissors for cutting, glue, stapler and tape for sticking, curling, bending, joining etc. • Know how to join components together e.g. <p>Key Vocabulary:, structure, cut, fold, join, fix, weak, strong, support, freestanding, framework, base, top, underneath, circle, triangle, square, rectangle, cuboid, cube, cylinder assemble, design, evaluate, mock up, purpose, ideas, user, function</p>	<p>Key skills:</p> <p>Design</p> <ul style="list-style-type: none"> - Begin to draw on their own experience to help generate ideas. - Model ideas in card and paper (create mock ups) where appropriate. - Plan by suggesting what to do next. <p>Make</p> <ul style="list-style-type: none"> - Make their own design using appropriate techniques. - Use tools (scissors, hole punch) safely. - With help, can measure, mark out, cut and shape a range of materials. - Assemble, join and combine materials and components together using a variety of methods e.g. glue, masking tape. - Use simple finishing techniques suitable for the structure they are creating. <p>Evaluate</p> <ul style="list-style-type: none"> - Explore a range of existing freestanding structures in the school and local environment. - Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make - Evaluate their product by answering questions about what they have made and how they have gone about it. <p>Technical knowledge</p> <ul style="list-style-type: none"> - Understand how freestanding structures can be made stronger, stiffer and more stable.
2A	<p>Fire and Ice</p> <p>Question: What wheeled vehicle could you create to cross ice or put out a fire?</p> <p>Outcome: Make a wheeled vehicle to cross ice/put out a fire.</p> <p>Children may also like to consider using a winding mechanism.</p>	<p>Aspect: Mechanism Focus: Wheels and axles</p> <ul style="list-style-type: none"> • Know a mechanism is a device used to create movement in a product and wheels and axles are an example of this. • Be able to investigate existing products to be able to know and distinguish between fixed and freely moving axles; explaining how they work. • Know components are needed to construct a moving vehicle and be able to select materials which are suitable. • Explore and use different ways of making wheels, axles and axle holders, ensuring axles run freely within holders. • Know the purpose of their product (that the finished product can be moved on wheels with ease) and generate ideas to meet a design criteria. • Be able to develop design ideas and plan the steps needed to make their design. • Be able to mark out, hold, cut and join materials and components effectively. 	<p>Key skills</p> <p>Design</p> <ul style="list-style-type: none"> - Generate ideas by drawing on their own, and other people's experiences. -Explore materials, make templates and mock-ups, starting to consider what will work and what might not. -Use pictures and labels to plan; explaining with increasing detail (e.g. more detail on type of materials and joins). <p>Make</p> <ul style="list-style-type: none"> -Begin to select from a range of materials and components, such as card, paper, plastic and wood according to their characteristic and explain why they have chosen them. -Begin to select tools and materials; using vocabulary to name and describe them. -With support, measure, cut and score with some accuracy. -Use hand tools safely and appropriately. -Assemble, join and combine materials in order to make a product.

		<ul style="list-style-type: none"> • Be able to use technical vocabulary related to the project. • Be able to evaluate their work against the design criteria, <p>Vocabulary: vehicle, wheel, axle, fixed, free, moving, mechanism, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, dowel, hacksaw, vice, finishing, names of tools, equipment and materials used design, make, evaluate, purpose, user, criteria, functional</p>	<p>Evaluate</p> <ul style="list-style-type: none"> -Evaluate their products as they are developed, identifying strengths and possible changes they might make. -Evaluate their work against their design criteria and purpose - what went well, if they did it again what could they improve? -Explain why they chose certain materials, techniques and tools. <p>Technical knowledge</p> <ul style="list-style-type: none"> -Understand about the movement of simple mechanisms such as wheels, and axles. -Use technical vocabulary correctly in projects they are undertaking.
2Sp	<p>Life down under</p> <p>Question: How could you create an Australian animal fabric toy?</p> <p>Outcome: Design and make a hand or finger puppet</p>	<p>Aspect: Textiles Focus: Templates and joining techniques</p> <ul style="list-style-type: none"> • Be able to explore and evaluate a range of existing puppets, considering features, fabrics, joining and finishing techniques. • Know there are different fabrics and be able to determine which is best for the purpose of the product. • Know a template can be used as a pattern and how to use a template to mark out designs on fabrics. • Know and explore examples of joining techniques (stitching, stapling, taping, gluing etc) and talk about advantages and disadvantages of each. • Know how to join 2 pieces of fabric together using sewing (running stitch and over stitch) • Know how to measure and cut fabric, and join the pieces together to make a puppet. • Know and use relevant vocabulary relevant to the project. • Know how to evaluate their puppet against the design criteria and suggest improvements. <p>Vocabulary: seam, sew, thread, stitch, decorate, design, fabric, glue, puppet, needle, thread, pin, stencil, template, join, cut, measure, colour, pattern, outline, Design criteria, design brief, user, function, purpose, make, evaluate, features, quality, suitable.</p>	<p>Key skills:</p> <p>Design</p> <ul style="list-style-type: none"> - Identify a purpose for what they intend to design and make. - Begin to develop their design ideas through discussion, observation, drawing and modelling. - Plan by suggesting what to do next and consider resources to use. - Use information and technology, where appropriate to develop and communicate ideas. <p>Make</p> <ul style="list-style-type: none"> - Begin to select from a range of materials and components according to their characteristic and explain why they have chosen them. - Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques - Start to choose and use appropriate finishing techniques based on their own ideas. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate their products as they are developed, identifying strengths and possible changes they might make. - Evaluate their work against their design criteria and purpose - what went well, if they did it again what could they improve? - Talk about their ideas, saying what they like and dislike. <p>Technical knowledge</p> <ul style="list-style-type: none"> - Know a 3D textile product can be assembled from two identical fabric shapes.
2SU	<p>Weather or inventors??</p> <p>Question: What would a weather/inventor packed lunch look like?</p> <p>Outcome: Design and make a healthy sandwich (for a specific inventor??).</p>	<p>Aspect: Food and nutrition Focus: Healthy sandwich</p> <ul style="list-style-type: none"> • Know what a design criteria is and how it can be used to develop a product. • Know there are many different types of sandwich fillings and breads available. • Know where and how a variety of ingredients are farmed, caught and grown. • Understand there is a need for a variety of different foods in a diet and relate this to the Eat well plate. • Use the basic principles of a healthy and varied diet to design and create a healthy sandwich. 	<p>Key skills:</p> <p>Design</p> <ul style="list-style-type: none"> - Identify a purpose for what they intend to design and make. - Identify simple design criteria and use this to help develop their ideas. - Plan by suggesting what to do next and consider resources to use. <p>Make</p> <ul style="list-style-type: none"> -Begin to select tools and materials; using vocabulary to name and describe them. - Make their own design using appropriate techniques. - Use simple utensils and equipment safely e.g.to peel, cut, slice, squeeze,

	<p>Could adapt yr 2 party food http://archive.foodafactoflife.org.uk/Sheet.aspx?siteId=22&sectionId=118&contentId=748 Or year 4 sandwiches http://archive.foodafactoflife.org.uk/Sheet.aspx?siteId=22&sectionId=118&contentId=776</p>	<ul style="list-style-type: none"> • Know that to make a sandwich, steps have to be done in a logical order. • Know how to cut and prepare food safely and hygienically. • Be able to choose and use appropriate tools safely to cut, peel, grate and spread a range of ingredients. • Be able to evaluate designs and sandwiches created describing likes and dislikes and areas for improvement. <p>Vocabulary: balanced diet, chop, cut, grate, peel, healthy, ingredients, utensils, meat, peel, sandwich, slice, vegetable, tasty, arrange, choose, spread, fruit, soft, juicy, crunchy, sticky, smooth, sharp, sour, assemble, design, design brief, design criteria, evaluate, purpose, ideas,</p>	<p>grate and chop</p> <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate their work against their design criteria and purpose - what went well, if they did it again what could they improve? - Evaluate their work against their design criteria and purpose - what went well, if they did it again what could they improve? - Talk about their ideas, saying what they like and dislike. <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> - Follows safe procedures for food safety and hygiene. - Knows that food has to be farmed, caught or grown elsewhere. - Can name and sort foods into the five main groups of the Eatwell plate. - Knows how to prepare simple dishes safely without a heat source. - Can safely use techniques such as cutting, peeling and grating for a growing range of ingredients. - Know that everyone should eat at least five portions of fruit and vegetables every day.
<p>3A</p>	<p>Britain Begins</p> <p>Question: How can we transport an artefact safely to a museum safely? Outcome: Design and make an appropriate box to transport an artefact.</p> <p>If time, children could also use their knowledge of structures and materials to create stone age houses.</p>	<p>Aspect: Structures Focus: Shell structures</p> <ul style="list-style-type: none"> • Know what the purpose of shell structures are e.g. collect, present, contain items. • Be able to investigate existing shell products to consider shape, how its been constructed, materials etc. • Know that manufacturers have shaped modern designs of boxes for different purposes and understand benefits of each shape. • Know shell structures are made through creating and using nets to create 3D shapes. • Know shell structures can be strengthened through using folding, layering, laminating. • Be able to use computer design to design the net and enhance the appearance of their design. • Are able to use prototypes to experiment with designs and shapes. • Know how to use cutting, scoring and joining skills to create their packaging box. • Are able to evaluate their product against the design brief to consider how well it meets its intended purpose. <p>Vocabulary: Shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, evaluating, design brief, design criteria, innovative, prototype.</p>	<p>Key skills:</p> <p>Design</p> <ul style="list-style-type: none"> - Identify a purpose and start to establish criteria for a successful product. - Gather information about what individuals want/need through research. - Start to plan the order of their work before starting. - Explore, develop and communicate design proposals by modelling ideas using prototypes. - Start to use Computer-aided design to develop and communicate ideas. <p>Make</p> <ul style="list-style-type: none"> - Measure, mark out, cut, score and assemble components with more accuracy (cm) - Work safely and accurately with a range of simple tools (e.g. scissors, hole punch, drills) - Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate against their design criteria e.g. how well it meets its intended purpose. - Disassemble and evaluate familiar products. - Explore how well products work to achieve their purposes. <p>Technical knowledge</p> <ul style="list-style-type: none"> - Understand how to make strong, stiff shell structures.
<p>3Sp</p>	<p>Water Water Water</p>	<p>Aspect: Mechanism</p>	<p>Key skills:</p>

	<p>H200000000</p> <p>Question: How could you create an interesting and moveable book/toy for a younger child?</p> <p>Outcome: Design and make a moving river story/information book or a moving toy using levers and linkages.</p> <p>If time, children could also use pneumatics to make and power a boat.</p>	<p>Focus: Levers and linkages</p> <ul style="list-style-type: none"> Understand levers and linkages are mechanisms are devices used to create movement in a product. Know that levers have been used since the stone age and are used in many everyday products. Know a lever is a rigid bar that moves around a pivot and that there are 4 types of lever: linear, reciprocating, rotary, oscillating. Know a linkage is card strips that join one or more lever to produce the type of movement required. Know the slot is the hole through which a lever is placed to enable part of a picture to move and that a guide or bridge is a short card strip used to keep lever and linkage mechanisms in place and control movement. Be able to identify levers and linkages in existing products and explain why a particular mechanism has been used. Identify the purpose and user of existing products and develop their own ideas considering the purpose and user. Be able to create prototypes to investigate levers, linkages and their movements and consider how they could use these to create their product. Develop ideas and use levers and linkages to create a river story/information book or moving toy. Are able to explore how well their products work to achieve their purpose and consider the aesthetics of their finished product. <p><i>Vocabulary: mechanism, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, oscillating, reciprocating, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, aesthetic, finishing technique.</i></p>	<p>Design</p> <ul style="list-style-type: none"> Generate ideas for an item, considering its purpose and the user/s. Identify a purpose and start to establish criteria for a successful product. Explore, develop and communicate design proposals by modelling ideas using prototypes. Make drawings with labels when designing. <p>Make</p> <ul style="list-style-type: none"> Select a wider range of tools and techniques for making their product. Think about their ideas as they make progress and be willing change things if this helps them improve their work. Measure, mark out, cut, score and assemble components with more accuracy (cm) Work safely and accurately with a range of simple tools (e.g. scissors, hole punch, drills) Use finishing techniques strengthen and improve the appearance of their product. <p>Evaluate</p> <ul style="list-style-type: none"> Evaluate against their design criteria e.g. how well it meets its intended purpose. Disassemble and evaluate familiar products. Explore how well products work to achieve their purposes. <p>Technical knowledge</p> <ul style="list-style-type: none"> Start to understand that mechanical and electrical systems have an input process and output process. Understand that levers and linkages create movement and know how to use them.
<p>3SU</p>	<p>Ancient Egyptians</p> <p>Question: How did the ancient Egyptians make bread? How is it different to today?</p> <p>Outcome: Design and make a new bread considering texture, smell, appearance and flavour.</p>	<p>Aspect: Food and nutrition</p> <p>Focus: Bread/recipes</p> <ul style="list-style-type: none"> Know that the Egyptians main diet consisted of bread and consider how and why bread has changed over time. Know bread products are an important part of a balanced diet linking this to the Eatwell plate and know the benefits of whole grain flour opposed to plain flour. Know which ingredients are needed to make bread and that wheat grain is a seed that is harvested and ground at a mill to make flour. Know how ingredients can be altered and mixed to create different effects and different types of bread products. Be able to investigate and evaluate bread products according to characteristics such as taste, texture, appearance and smell. Know the different tools, ingredients and steps typically involved in bread making and the techniques such as mixing, rubbing, kneading. Be able to research what type of bread others may like and prefer 	<p>Key skills:</p> <p>Design</p> <ul style="list-style-type: none"> Identify a purpose and start to establish criteria for a successful product. Gather information about what individuals want/need through research. Make drawings with labels when designing. Start to plan the order of their work before starting. <p>Make</p> <ul style="list-style-type: none"> Work safely and accurately with a range of simple utensils and equipment to prepare and combine ingredients. <p>Evaluate</p> <ul style="list-style-type: none"> Evaluate against their design criteria e.g. how well it meets its intended purpose. Disassemble and evaluate familiar products. Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products – Jamie Oliver <p>Food and nutrition</p>

		<p>with regards to flavour and appearance.</p> <ul style="list-style-type: none"> • Be able to design and make a bread product considering texture, smell, appearance and flavour. • Evaluate their product against the design criteria. <p>Vocabulary: name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, savoury, appearance, smell, preference, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet, knead, rub, mix, yeast, grain, wholemeal, plain, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, planning, design criteria, purpose, user, annotated sketch, sensory evaluations</p>	<ul style="list-style-type: none"> - Start to demonstrate hygienic and food preparation and storage. - Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. - Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. - Start to know a healthy diet is made up from a variety of different food and drink, as depicted in the Eatwell plate. - Follow instructions/recipes. - Develop the knowledge and skills to cook a variety of predominantly savoury dishes safely and hygienically, using a heat source where appropriate. - Measure and weigh ingredients appropriately.
4A	<p>How Gloucester was influenced by the Romans</p> <p>Question: What did the Romans keep their money in? Outcome: Design and create a functional Roman purse or wallet with a fastening.</p> <p>If there is time, children could revisit knowledge from year 3 about levers to investigate and create Roman catapults.</p>	<p>Aspect: Textiles Focus: 2D shape to 3D product</p> <ul style="list-style-type: none"> • Be able to analyse a purses and wallets, both modern day and those from Roman times in terms of purpose, function, materials and design. • Be able to create detailed labelled diagrams of existing products noting types of materials used, types of fastenings and the decoration applied. • Identify features of a good quality functioning purse/wallet and how to specify a design to make it more appealing to a specific target group. • Know why pattern pieces are used for creating products and to use them to measure, mark and cut fabric with some accuracy. • Know different types of stitches can be used for functionality and aesthetics e. g. backstitch, blanket stitch, cross stitch. • Be able to investigate the effect of different stitches in joining seams and how they contribute to the overall effectiveness and durability of a product. • Know there are different ways of fastening products e.g. buttons, Velcro, studs, drawstring and consider the benefits of each. • Know how to evaluate their product against the product criteria created as a means to improve their work. <p>Vocabulary: fabric, names of fabrics, fastening, compartments, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, thread, needle, decoration, aesthetics, functional, pattern pieces, user, purpose, design, model, evaluate, prototype, annotated sketch, innovative, investigate, label, drawing,</p>	<p>Key skills: Design</p> <ul style="list-style-type: none"> - Generate ideas, considering the purposes for which they are designing. - Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. - Make labelled drawings from different views, including cross sections, showing specific features. - Evaluate products and identify criteria that can be used for their own designs. <p>Make</p> <ul style="list-style-type: none"> - Select appropriate tools and techniques for making their product. - Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques (cm). - Can join and combine materials and components accurately in temporary and permanent ways. - Measure, tape or pin, cut and join fabric with some accuracy. - Sew using a range of different stitches, weave and knit. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate their work both during and at the end of the assignment. - Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products – William Morris??
4Sp	<p>Watch Out Mother Natures About</p> <p>Question: Can pizzas be healthy?</p>	<p>Aspect: Food and nutrition Focus: Healthy eating/Pizzas</p> <ul style="list-style-type: none"> • Know particular dishes are associated with different cultures and places e.g. curry, pizza, 	<p>Key skills: Design</p> <ul style="list-style-type: none"> - Generate ideas, considering the purposes for which they are designing. - Gather information, through research, about what groups and individuals want/need.

	<p>Outcome: Children to design and make a healthy pizza.</p>	<ul style="list-style-type: none"> • Know that food needs to be grown, caught or reared and that some foods are produced locally, where as some foods come from elsewhere in the world through importing and exporting. • Know about a range of fresh and processed ingredients appropriate for their product. • Be able to carry out sensory evaluations of a range of products and ingredients and record these using tables/graphs. • Know that we need to eat a balanced diet of foods from each of the five food groups and how much of each group. • Be able to design and make a healthy pizza using knowledge of the Eatwell plate and consider foods that go well together. • Be able to use a range of techniques e.g spreading of puree, kneading for dough, slicing, grating and chopping for toppings. • Be able to accurately measure ingredients using scales. • Evaluate the final product with reference to the design brief and design specification. <p><i>Vocabulary: name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, culture, local, harvested, healthy/varied diet planning, design criteria, purpose, user, annotated sketch, sensory evaluations</i></p>	<p>Make</p> <ul style="list-style-type: none"> - Select appropriate tools and techniques for making their product. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate their work both during and at the end of the assignment. - Evaluate their products carrying out appropriate tests. - Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products - ?? <p>Food and nutrition</p> <ul style="list-style-type: none"> - Know what to do and explain why steps need to be taken to ensure food is prepared and stored hygienically. - Understand food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. - Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. - Know a healthy diet is made up from a variety of different foods and start to make healthy eating choices using the Eatwell plate. - Understand how to cook a variety of predominantly savoury dishes safely and hygienically, using a heat source where appropriate. - Measure ingredients using scales.
4Su	<p>Anglo Saxons, scots and Vikings</p> <p>Question: What can you use to create light if there is no mains electricity?</p> <p>Outcome: Design and make a battery operated light for an explorer to investigate a historical site.</p>	<p>Aspect: Electrical systems</p> <p>Focus: Simple circuits and switches - linked to science</p> <ul style="list-style-type: none"> • Investigate and evaluate a range of lights considering the user, purpose and function considering criteria that can be used for their own design. • Know switches can be used to alter the way an output device functions and that switches can be created in different ways e.g. foil, paper clips. • Know how to design an appropriate electrical circuit for their light involving a battery, bulb and switch to create a functional product. • Know the features of a torch e.g. reflector, casing, bulb etc and use cross section diagrams to complete labelled diagrams. • Use previous knowledge of structures from year 3 to consider the shape, net shape and how to strengthen and reinforce their torch.. • Know how to use a range of tools, components and techniques appropriately and accurately to create their design. • Identify ways of improving their torch to create a finished product of a high quality, which may include the use of computer programming to control the function. <p><i>Vocabulary: series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program,</i></p>	<p>Key skills:</p> <p>Design</p> <ul style="list-style-type: none"> - Generate ideas, considering the purposes for which they are designing. - Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. - Make labelled drawings from different views, including cross sections, showing specific features. - Evaluate products and identify criteria that can be used for their own designs. <p>Make</p> <ul style="list-style-type: none"> - Select appropriate tools and techniques for making their product. - Use simple graphical communication techniques. - Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques (cm). - Can join and combine materials and components accurately in temporary and permanent ways. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate their work both during and at the end of the assignment. - Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products - Thomas Edison <p>Technical knowledge</p> <ul style="list-style-type: none"> - Understand that mechanical and electrical systems have an input process

		system, input device, output device, reflector, casing, component, 3D net, stiffen, process, input, output, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, cross section diagram,	and output process. - Know how simple electrical circuits and components can be used to create functional products.
5A	<p>American Adventures</p> <p>Question: How can we cross the Amazon safely? Outcome: Design and create a bridge to cross the Amazon. It could also include the use of levers to lift a bridge.</p>	<p>Aspect: Structures Focus: Frame Structures – bridges</p> <ul style="list-style-type: none"> • Know that there are many different types of bridges: beam, arch, suspension, cantilever and consider their purpose and the materials they are made from. • Know there are many famous bridge engineers: eg Clifton Suspension Bridge; Isambard Kingdom Brunel, Tower Bridge; John Wolfe Barry and Sir Horace Jones. • Be able to use research to consider the purpose of their own bridge and use ideas for design communicating these through annotated sketches and cross-sectional diagrams. • Know that bridge structures need to be reinforced and strengthened to avoid them failing due to weight increasing pressure and investigate methods to strengthen a structure e.g. use of triangles, arches, etc. • Know that some structures are stabilised by having a wide base e.g. in the use of suspension bridges. • Select from and use a wide range of tools, materials and equipment to create a bridge according to functional and aesthetic qualities. • Be able to evaluate a product against the specification drawn up considering their own and others ideas. <p>Vocabulary: engineer, beam bridges, truss bridge, arch bridge, suspension bridge, compression, weight, gravity, properties, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, shape, frame structure, Design brief, design specification, prototype, purpose, user, innovation, research, evaluate, functional, annotated sketch, cross-sectional diagram</p>	<p>Key skills: Design</p> <ul style="list-style-type: none"> - Draw up a specification for their design. - Use results of investigations, information sources and surveys to develop design ideas. - Develop a detailed step by step plan of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail. - Continue to develop the use of cross-section drawings and diagrams of different views. - Develop the use of prototypes. <p>Make</p> <ul style="list-style-type: none"> - Select appropriate materials, tools and techniques. - Measure and mark out accurately (cm and/or mm). - Use skills in using different tools and equipment safely and accurately to ensure a good quality finish. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate a product against the original design specification. - Evaluate a product personally and seek evaluation from others. - Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products – Isambard Kingdom Brunel <p>Technical Knowledge</p> <ul style="list-style-type: none"> - Understand how to stiffen, strengthen and reinforce a range of 3D frameworks.
5Sp	<p>Mayans</p> <p>Question: What could be used to make transporting stone to make a Mayan temple easier? Outcome: Design and create an invention including gears and/or pulleys to transport stone to create a Mayan temple.</p>	<p>Aspect: Structure and mechanisms Focus: Gears and pulleys – links to science forces</p> <ul style="list-style-type: none"> • Know that mechanical systems and pulleys have an input, process and output and that gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know gears are toothed wheels (cogs) that lock together and turn one another. • Know pulleys are like gears, but the wheels do not lock together and are instead joined together by a drive belt. • Know there are a variety of products that use gears and/or pulleys and disassemble these products to learn how they are made/function. • Investigate combinations of two different sized pulleys or gears to learn about direction and speed of rotation. 	<p>Key skills Design</p> <ul style="list-style-type: none"> - Generate innovative ideas through brainstorming and identify a purpose for their product. - Draw up a specification for their design. - Develop a detailed step by step plan of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail. - Continue to develop the use of cross-section drawings and diagrams of different views. - Develop the use of prototypes. <p>Make</p> <ul style="list-style-type: none"> - Select appropriate materials, tools and techniques. - Measure and mark out accurately (cm and/or mm).

		<ul style="list-style-type: none"> • Be able to sketch and annotate different design ideas and plan the main stages of making. • Evaluate the product against the original design specification. <p>Vocabulary: pulley, gear, driver, follower, rotation, motor, belt, teeth, cogs, design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype</p>	<ul style="list-style-type: none"> - Use skills in using different tools and equipment safely and accurately to ensure a good-quality finish to the product.. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate a product against the original design specification. - Evaluate a product personally and seek evaluation from others. - Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products - ??? <p>Technical knowledge</p> <ul style="list-style-type: none"> - Understand that mechanical and electrical systems have an input process and output process. - Understand how mechanical systems such as cams or gears or pulleys create movement.
5Su	<p>Ancient Greeks</p> <p>Question: Are there different types of salads?</p> <p>Outcome: Design and create a salad for a school meal.</p>	<p>Aspect: Food and nutrition Focus: Culture and seasonality</p> <ul style="list-style-type: none"> • Know particular dishes are associated with different cultures and places e.g. curry, pizza, Greek Salad and be able to name traditional Greek food including pitta, olives and feta. • Know some ingredients are easier to grow in some parts of the world than others due to climate and are often found in dishes that originate where they are found. • Know ingredients can be combined together for flavour and texture and that certain ingredients are suited together better than others. • Use knowledge of the Eatwell plate to plan a salad which is healthy and balanced including carbohydrate e.g. pasta, pitta bread etc. • Design a salad based on their own experiences and research undertaken to generate ideas. • Design and make dishes safely and hygienically for their intended user based on the design criteria. • Design a suitable packaging for their product if time using knowledge from year 3. <p>Vocabulary: ingredients, dough, yeast, flour, wholemeal, unleavened, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rub, whisk, beat, roll out, shape, sprinkle, crumble, design specification, innovative, research, evaluate, design brief</p>	<p>Key skills</p> <p>Design</p> <ul style="list-style-type: none"> - Generate innovative ideas through brainstorming and identify a purpose for their product. - Draw up a specification for their design. - Begin to carry out research, and surveys to identify the needs/wants/preferences of groups and individuals. - Use results of investigations, information sources and surveys to develop design ideas. - Develop a detailed step by step plan of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail. <p>Make</p> <ul style="list-style-type: none"> - Weigh and measure accurately (time, dry ingredients, liquids). - Apply the rules for basic hygiene and other safe practices. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate a product against the original design specification. - Evaluate a product personally and seek evaluation from others. <p>Food and Nutrition</p> <ul style="list-style-type: none"> - Begin to apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens. - Describe what they do to be both hygienic and safe. - Can name some food that is grown, reared and caught in the UK and Europe. - Knows that seasons may affect the food available, limiting them. - Develop the knowledge of how some food is processed into ingredients that can be eaten or used in cooking. - Can accurately prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. - Know that recipes can be adapted to change the appearance, taste, texture and aroma

<p>6A</p>	<p>Crime and punishment</p> <p>Question: How could you prevent a criminal from escaping?</p> <p>Outcome: Design and create a product to prevent a criminal from escaping e.g an alarm.</p>	<p>Aspect: Mechanisms Focus: Electrical systems and structures</p> <ul style="list-style-type: none"> • Research a range of products that respond to changes in the environment e.g alarm systems, security lighting identifying who the user is and the purpose e.g. to warn of danger, prevent damage, keep things and people safe. • Know how existing alarms are activated e.g. use of different switches, sensors, • Know how to make simple series circuits with batteries and understand about different types of inputs e.g. switches and sensors and outputs e.g. bulbs and buzzers. • Investigate and make a range of different switches e.g switches that operate in different ways e.g. push-to-make to detect someone treading on something; push-to-break to detect someone lifting something; tilt to detect movement of something; and also switches to turn on and off • Make prototypes of ideas using labelled drawings to inform others about their ideas - could use CAD to design structure - Sketch up? • Use existing knowledge of structures to make structures e.g cell, chair etc using a range of materials. • Investigate how to control components with computers using a computing control programme. - crumble? FloGo? FlowMakey Makey? (https://www.barefootcomputing.org/inputoutput-control-equipment) • Evaluate against their own design criteria and consider the views of others to improve their work. <p>Vocabulary: series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart 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>Key skills</p> <p>Design</p> <ul style="list-style-type: none"> - Communicate their ideas through detailed labelled drawings. - Develop a design specification. - Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways. - Plan the order of their work, choosing appropriate materials, tools and techniques to create step by step plans. - Continue to develop the use of prototypes. - Develop the use of Computer-Aided Design. <p>Make</p> <ul style="list-style-type: none"> - Select appropriate tools, materials, components and techniques. - Measure and mark out precisely and accurately. - Assemble components and make working models. - Make modifications as they go along. - Uses tools safely and accurately. - Construct products using permanent joining techniques. - Achieve a quality product matching specifications. <p>Evaluate</p> <ul style="list-style-type: none"> - Record their evaluations using drawings with labels. - Evaluate against their original criteria and suggest ways that their product could be improved. - Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products. <p>Technical knowledge</p> <ul style="list-style-type: none"> - Understand that mechanical and electrical systems have an input process and output process. - Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in environment and control products.
<p>6Sp</p>	<p>One world</p> <p>Question: Can recipes be made with fair trade ingredients?</p> <p>Outcome: Create a fair trade product by adapting a recipe.</p>	<p>Aspect: Food and nutrition Focus: Fair trade and adapting recipes</p> <ul style="list-style-type: none"> • Research existing products in terms of ingredients used and evaluate them describing food characteristics. • Know some products include ingredients that are not sustainable such as palm oil or ethically in terms of workers being given a fair wage. • Know where ingredients come from and how they can be processed e.g. grated, weighed, served, sliced etc or used in cooking e.g. boiled, baked, grilled etc • Use surveys/questionnaires to find out about the preferences of others. • Know recipes can be adapted by adding or substituting ingredients such as fair trade products and that these may have an effect on the taste and appearance of a product. • Know how to design a fair trade biscuit suitable for a specific user 	<p>Key skills</p> <p>Design</p> <ul style="list-style-type: none"> - Carry out research, surveys, questionnaires and interviews to identify the needs/wants/preferences of groups and individuals. - Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways. - Plan the order of their work, choosing appropriate materials, tools and techniques to create step by step plans. <p>Make</p> <ul style="list-style-type: none"> - Select appropriate tools, materials, components and techniques. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate against their original criteria and suggest ways that their product could be improved. -Learn about inventors, designers, engineers, chefs and manufacturers who

		<p>considering ingredients that could be added.</p> <ul style="list-style-type: none"> • Design and make products safely and hygienically for their intended user based on the design criteria. • Know how to calculate the cost of their ingredients and consider a budget to create their product. • Evaluate their products against the design specification and suggest ways the product could be improved. <p>Vocabulary: combining, sieving, mixing, finishing, hygiene, antibacterial, dough, herbs, quality control, texture, flavour, crisp, crunchy, sticky, soft dough, elastic dough, fair trade, ratio, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rub, whisk, beat, roll out, shape, sprinkle, crumble</p> <p>design specification, innovative, research, evaluate, design brief, investigate, brainstorm, consumer, quality, purpose and audience</p>	<p>have developed ground breaking products.</p> <p>Food and nutrition</p> <ul style="list-style-type: none"> - Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens. - Explain how their product should be stored with reasons. - Knows food is grown, reared and caught in the UK, Europe and the wider world. - Knows how food is processed into ingredients that can be eaten or used in cooking. - Can accurately prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. - Know recipes can be adapted by adding or substituting one or more ingredients.
6Su	<p>Performance based? WWI??</p> <p>Question: How can we create new items of clothing from old items?</p> <p>Outcome: Design and create an item of clothing or bag from an old item of clothing - Make Do and mend or link to costumes for production.</p>	<p>Aspect: Textiles Focus: Combining different fabric shapes</p> <ul style="list-style-type: none"> • Investigate a range of existing products considering the purpose, user, functionality and aesthetic appeal. • Know that a designer needs to consider appearance, function, cost and safety when designing products. • Know that patterns/templates are used many times to ensure consistency in size and to limit the wastage of material. • Know that different fabrics have different properties and may be used for different items depending on its function and use e.g. cotton tops for comfort, trousers thicker material for durability, wool for keeping warm. • Understand the benefits of re-cycling materials and how to avoid waste. • Recall from previous year's different stitches met e.g. running stitch, over stitch, back stitch, blanket stitch and choose a method to join material/fabrics to ensure they are robust enough for purpose. • Sketch and annotate different design ideas before choosing a final design. • Design their own item of clothing using detailed diagrams, considering fastenings and aesthetics, and making a plan of the main stages. • Know how to use Computer Aided Design to ensure finishing touches such as slogans, logos are of a high quality. • Be able to measure and cut accurately to ensure the item fits. • Know about the need for seam allowance when creating their item of clothing. • Are able to make quality products with increasing accuracy and independence. • Evaluate their product considering its user, aesthetics, functionality and any improvements that could be made. <p>Vocabulary: designer, computer aided design (CAD), font, lettering, text,</p>	<p>Key skills</p> <p>Design</p> <ul style="list-style-type: none"> - Communicate their ideas through detailed labelled drawings. - Develop a design specification. - Carry out research, surveys, questionnaires and interviews to identify the needs/wants/preferences of groups and individuals. - Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways. - Plan the order of their work, choosing appropriate materials, tools and techniques to create step by step plans. - Continue to develop the use of prototypes. - Develop the use of Computer-Aided Design <p>Make</p> <ul style="list-style-type: none"> - Select appropriate tools, materials, components and techniques. - Measure and mark out precisely and accurately. - Assemble components and make working models. - Make modifications as they go along. - Uses tools safely and accurately. - Construct products using permanent joining techniques. - Pin, sew and stitch materials together to create a product using a combination of accurately made pieces. - Achieve a quality product matching specifications. <p>Evaluate</p> <ul style="list-style-type: none"> - Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. - Record their evaluations using drawings with labels. - Evaluate against their original criteria and suggest ways that their product could be improved.

		<p>graphics, menu, scale, modify, repeat, copy, flip, design decisions, innovative, prototype, seam, seam allowance, reinforce, right side, wrong side, hem, template, pattern pieces, names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper. annotate, functionality, innovation, authentic, user, design brief, design criteria.</p>	<p>-Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products.</p>
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