DT overview			
Reception	**Knowledge** <u>Early Learning Goal:</u> **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. Make use of props and materials when role playing characters in narratives and stories. **EYFS knowledge:** Construction and playdough learning challenges are provided. Junk modelling opportunities are provided for the children to experience using tools such as scissors, cellotape, masking tape, PVA glue, Dowling and cardboard wheels. The children are challenged to create a toy for Santa's toy sack. The children are also given the creative freedom for themselves to create objects/models. Outdoor construction play encourages the children to work on a larger scale and to problem solve. Working as a team to create and collaborate. Children have daily snack time where they can choose fruit as well as at lunchtime which is used as a platform to discuss fruit and what fruit we dis/like and identify healthy snacks. Roel play food in the home corner provides children with the opportunity to practice their cutting skills with play knives through Velcro fruit and vegetables. Visits from the farm roadshow and to a farm provides opportunity for the children to link where their food comes from. Growing opportunities throughout the year. The children have access to the sand and water garden which provides various size castle moulds, buckets and spades. EYFS staff communicate with the children throughout their play and construction. EYFS staff are there to support and challenge the children, if something goes wrong, how can the problem be solved? What else could you do? The children are encouraged to evaluate their process and end product. Access to junk modelling resources and resources to secure the structure like PVA glue, Cellotape and masking tape are provided.		
	Autumn	**Spring**	**Summer**
Year 1	**My World** **DT** **Knowledge** Mechanisms A toy with wheels and axles To know what a wheel and axle is. To understand how wheels and axles work. To compare different toys.	**The Great Fire of London** **Knowledge** Food A low-cost snack for 1666 Londoners. (bread). • Understand the need for a variety of food in a diet. • Understand that food has to be farmed, grown or caught.	**Queens of England** **DT** **Knowledge** Structures To make a boat to fight the Spanish Armada. • To identify different methods of cutting and joining. To know how to make a product stronger or stiffer.

	Skills • Use a range of simple tools to cut, join and combine materials and components safely. • Ask simple questions about existing products and those that he/she has made. Products • Create simple designs for a product. • Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing. • Use wheels and axles in a product.. • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products	**Skills** • Use a wider range of cookery techniques to prepare food safely. • Design purposeful, functional, appealing products for himself/herself and other users based on design criteria. • Generate, develop, model and communicate his/her ideas through talking, drawing, templates mock-ups and, where possible information and communication technology. • Choose appropriate tools, equipment, techniques and materials from a wide range. • Evaluate and assess existing products and those that he/she has made using a design criterion.	**Skills** • Create simple designs for a product. • Use pictures and words to describe what he/she wants to do. • Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining. • Ask simple questions about existing products and those he/she has made.
Year 2	**London** **Knowledge** Mechanisms Making a moving picture or bridge Levers and sliders • To identify a lever and a slider. • To understand how levers and sliders work to create movement. • To plan a lever or slider into their moving picture. • To identify key geographical features of London to represent in their picture.	**Around the world in 80 days** **Knowledge (food)** World wide fruit smoothies and kebabs. To make and package a fruit smoothie and kebab that would encourage children to eat more fruit and vegetables. Fruits and vegetables grow in different conditions. Not all fruit and veg is grown in the UK. Introduce to the word import. Identify how to make a product appealing. (Packaging and colour). Understand that knifes are sharp and there are specific ways to hold and cut with sharp knives.	**The Coast** **Knowledge** Structures To create a free-standing sign to warn people about possible dangers at the beach. • Create simple designs for a product. • Use pictures and words to describe what he/she wants to do. • Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing. • Ask simple questions about existing products and those he/she has made. • Build structures, exploring how they can be made stronger, stiffer and more stable.
	Skills • Design purposeful, functional, appealing products for himself/herself and other users based on design criteria. • Generate, develop, model and communicate his/her ideas through talking, drawing, templates mock-ups and, where possible information and communication technology. • Choose appropriate tools, equipment, techniques and materials from a wide range. • Safely measure, mark out, cut and shape materials and components using a range of tools. • Evaluate and assess existing products and those that he/she has made using a design criterion. • Explore and use mechanisms e.g levers, sliders wheels and axles, in his/her products	**Skills** • Use a wider range of cookery techniques to prepare food safely. • Design purposeful, functional, appealing products for himself/herself and other users based on design criteria. • Generate, develop, model and communicate his/her ideas through talking, drawing, templates mock-ups and, where possible information and communication technology. • Choose appropriate tools, equipment, techniques and materials from a wide range. • Evaluate and assess existing products and those that he/she has made using a design criterion.	**Skills** • Design purposeful, functional, appealing products for himself/herself and other users based on design criteria. • Generate, develop, model and communicate his/her ideas through talking, drawing, templates mock-ups and, where possible information and communication technology. • Choose appropriate tools, equipment, techniques and materials from a wide range. • Safely measure, mark out, cut and shape materials and components using a range of tools. •

<table>
<tr><td rowspan="2">Year 3</td><td>Stone and Iron age
Knowledge

Mechanisms
To design a tool that could have improved the lives of Stone age people.

• Understand how mechanical systems such as levers and linkages or pneumatic systems create movement.</td><td>Ancient Egypt
Knowledge

Food- Egyptian Basbousa Cake

• Talk about the different food groups and name food from each group.
• Understand how flour production changed.</td><td>The British Empire
Knowledge

Structures- packaging to transport goods around the empire

• To understand how a nett works.
• To identify how to stiffen more complex structures.</td></tr>
<tr><td>Skills
• Use knowledge of existing products to design his/her own functional product.
• Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes.
• Safely measure, mark out, cut, assemble and join with some accuracy.
• Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages using them.
• Investigate and analyse existing products and those he/she has made, considering a wide range of factors.</td><td>Skills
• Use a wider variety of ingredients and techniques to prepare and combine ingredients safely.
• Use knowledge of existing products to design his/her own functional product.
• Create designs using annotated sketches, cross-sectional diagrams.
• Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages using them.
• Investigate and analyse existing products and those he/she has made, considering a wide range of factors.

See food specific skills progression document for breakdown of skills.</td><td>Skills
• Use knowledge of existing products to design his/her own functional product.
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• Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages using them.
• Investigate and analyse existing products and those he/she has made, considering a wide range of factors.
• Safely measure, mark out, cut, assemble and join with some accuracy.
• Create and use a nett.</td></tr>
<tr><td>Year 4</td><td>Romans
Knowledge

Food
Cooking around Europe- Pizza

• Understand what makes a healthy and balanced diet and that different foods and drinks provide different substances the body needs to be healthy and active.
• Understand seasonality and the advantages of eating seasonal and locally produced food.</td><td>Mayans
Knowledge

Textiles- sustainability
Making a bag from recycled clothing.

• To understand what sustainable resources are.
• To identify ways of being sustainable.
• To know our clothes are made out of different fabric.
• To know the old fabric can be cut and sewn to create new products.
• To know the qualities of different fabrics.</td><td>Mining
Knowledge

Electrical systems- build a torch that could be used by a miner.

• To build on previous scientific knowledge about circuits.
• To create a simple circuit using a lamp and a switch.
• To identify insulators and conductors.
• To identify and use safe materials to house electrical equipment.</td></tr>
</table>

	Skills • Read and follow recipes which involve serval processes, skills and techniques. • Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience	**Skills** • Use knowledge of existing products to design his/her own functional product. • Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes. • Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages using them. • Investigate and analyse existing products and those he/she has made, considering a wide range of factors. • Safely measure, mark out, cut, assemble and join with some accuracy. •	**Skills** • Understand and use electrical systems in products. • Create designs using exploded diagrams. • Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. cutting internal shapes, slots in framework. • Consider how existing products and his/her own finished products might be improved and how well they meet the needs pf the intended user.
Year 5	**Anglo Saxons** **Knowledge** Mechanisms. Design and make an automaton using CAMS to teach children about the reasons the Anglo-Saxons came to Britain. • Understand how to use more complex mechanical systems. • Understand how CAMS work to create movement. • Link style of CAMS to type of movement	**Greeks** **Knowledge** Food Greek themed dips, flatbreads and garnishes. • Understand the main food groups and the different nutrients that are important for health. Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable/tasty to eat.	**Crime and Punishment** **Knowledge** . Textiles Design and make a blanket for a prisoner. • Identify different types of stitching. • Identify the appropriate stitch for their need. •
	Skills • Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product. • Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable. • Use more complex mechanical and electrical systems. • Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work.	**Skills** • Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product. • Select appropriate ingredients and use a wide range of techniques to combine them. • Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. • Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work.	**Skills** • Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product. • Create prototypes to show his/her ideas. • Make careful and precise measurements so that joins, hole and opening are in exactly the right place. • Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. • Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work.
Year 6	**Vikings** **Knowledge** Design a long-distance weapon that would have helped the Anglo Saxons sink Viking longboats. • To know what a long-distance weapon is. • To know what a pulley system is. • To create a wind-up pulley system. • To understand how a pulley system works around a wheel and axle.	**Shang Dynasty** **Knowledge** Food- Wontons? To combine flavours to create Wontons that would appeal to a specific group. • Understand flavour combinations. • Understand the importance of taste testing. • Understand methods they could use to create a filling.	**World War** **Knowledge** Electrical systems- to create an air raid alarm. • Apply his/her knowledge understanding of computing to program, monitor and control his/her product.

	• To understand that pulley systems can be used for lifting or creating tension. To know how to create a strong, stable structure.		
	Skills • Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product. • Create prototypes to show his/her ideas. • Make careful and precise measurements so that joins, hole and opening are in exactly the right place. • Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. • Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work.	**Skills** • Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product. • Select appropriate ingredients and use a wide range of techniques to combine them. • Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. • Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work.	**Skills** • Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities. • Apply his/her knowledge accurate skills to problem solve during the making process. • Apply his/her understanding of computing to program, monitor and control his/her product