



Subject Concept Map – Design and Technology 2021 - 2022



Year group	Key Design and Technology Composites				
	Design	Make	Evaluate	Nutrition	Functionality
Year 1- Oak	Vehicles Moving Pictures Fruit Salad	Vehicles Moving Pictures Fruit Salad	Vehicles Moving Pictures Fruit Salad	Fruit Salad	Vehicles Moving Pictures Fruit Salad
Year 2- Beech	Homes Flight Structures Smoothies	Homes Flight Structures Smoothies	Homes Flight Structures Smoothies	Smoothies	Homes Flight Structures Smoothies
Year 3 - Sycamore	Mini Greenhouses Alarms Sponge Cake	Mini Greenhouses Alarms Sponge Cake	Mini Greenhouses Alarms Sponge Cake	Sponge Cake	Mini Greenhouses Alarms Sponge Cake
Year 4- Hazel	Moving Animals Jewellery Making St James' Jam	Moving Animals Jewellery Making St James' Jam	Moving Animals Jewellery Making St James' Jam	St James' Jam	Moving Animals Jewellery Making St James' Jam
Year 5 - Maple	Building Bridges Fashion and Textiles Traditional English Trifle	Building Bridges Fashion and Textiles Traditional English Trifle	Building Bridges Fashion and Textiles Traditional English Trifle	Traditional English Trifle	Building Bridges Fashion and Textiles Traditional English Trifle
Year 6 – Chestnut	Light up Tower Design and make a slipper Three course meal	Light up Tower Design and make a slipper Three course meal	Light up Tower Design and make a slipper Three course meal	Three Course Meal	Light up Tower Design and make a slipper Three course meal

Key Design and Technology Composites

Design	Make	Evaluate	Nutrition	Functionality
<p>A detailed plan or drawing produced to show the look and function or workings of a building, garment or other object before it is made.</p>	<p>From a plan or drawing, parts of materials are combined together to create final product The process of making something new or doing something in a new way is to innovate.</p>	<p>Designers must evaluate their product throughout the whole making process in order to be innovative and test whether their product works or can be corrected or improved To innovate is not just to do something differently, but to do or make something better.</p>	<p>Nutrition is the study of nutrients in food, how the body uses them and the relationship between diet, health and disease. An example of nutrition is eating a healthy diet.</p>	<p>A product being suited to serve a purpose well. The final product should be admired for its beauty and its functionality.</p>

Year group	Key Design and Technology Vocabulary				
	Design	Make	Evaluate	Nutrition	Functionality
Year 1- Oak	Develop Model Features Template	Tool Wheels Assemble Materials Joining	Strong Stronger More Stable Weak Stiff/Stiffer More Stable Weak	Cutting Slicing Ingredients Choosing Peeling Skin Tasting	Purpose Tasting Purpose
Year 2- Beech	Characteristics Model Prototype Features Products	Assemble Equipment Join Construction Component	Suitable Strong Stronger Stiffer Strong/Stronger More stable	Ingredient Arrange Cut Healthy Peel	Function Mechanism Stability
Year 3 - Sycamore	Criteria Appealing Characteristics Design Specification Functional Label	Materials Reinforce Decision Component Programme Materials	Qualities Reinforce Test Control	Ingredients Rubbing in Whisk Stir	Fit for purpose Aesthetic qualities Circuit User
Year 4- Hazel	Annotated Sketches Functional Finishing Techniques Appealing Finishing techniques Innovative	Component Mechanism Decision Materials	Reinforce Test Authentic Aesthetic Qualities	Combine Mix Texture Edible	Process Purpose Edible
Year 5 - Maple	Cross Sectional Design specification Innovative Finishing Techniques Patterned pieces Template	Reinforce Materials Decision Materials Stitching Seam Stiffen Hem	Reinforce Frame Structure Stability Aesthetic Qualities Authentic Fastenings	Combine Consistency Ingredients Intolerance Preference	Triangulation Fit for purpose Functional Aesthetically Pleasing
Year 6 – Chestnut	Design specification Prototype Appealing Purpose Annotated Sketches Exploded Diagrams Template	Materials Components Circuit Battery, Wire, Bulb Materials Reinforce Decision	Reinforce Strong Framework Evaluate Reinforce Aesthetic Qualities	Purpose Name of products, equipment, utensils, techniques and ingredients	Stability Aesthetically Pleasing Fit for purpose Edible Taste

Year group	Design and Technology Passport – Knowledge and Skills Progression
<p>Year 1- Oak Components</p> <p>Knowledge</p>	<p>I use my own ideas to make something</p> <p>I describe how something works</p> <p>I cut food safely</p> <p>I make a product which moves</p> <p>I make my model stronger</p> <p>I explain to someone else how I want to make my product</p> <p>I choose appropriate resources and tools</p> <p>I make a simple plan before making</p>
<p>Skills</p>	<p>Make select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</p> <p>Evaluate Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria</p> <p>Technical knowledge Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>Cooking and Nutrition use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from.</p>

<p>Year 2- Beech Components</p> <p>Knowledge</p>	<p>I think of an idea and plan what to do next I choose materials and explain why I have chosen them I join my materials and components in different ways I explain what went well with my work I explain why I have chosen specific textiles I measure materials to use in a model or structure I describe the ingredients I am using</p>
<p>Skills</p>	<p>Make select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</p> <p>Evaluate Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria</p> <p>Technical knowledge Build structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>Cooking and Nutrition use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from.</p>

<p>Year 3 - Sycamore Components</p> <p>Knowledge</p>	<p>I prove that my design meets some set criteria I follow a step by step plan, choosing the right equipment and materials I design a product and make sure that it looks attractive I choose a material for both its suitability and its appearance I select the most appropriate tools and techniques for a given task I make a product which uses both electrical and mechanical components I work accurately to measure, make cuts and make holes I describe how food ingredients come together</p>
<p>Skills</p>	<p>Design use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world</p> <p>Technical knowledge apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products.</p> <p>Cooking and Nutrition understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>

<p>Year 4- Hazel Components</p> <p>Knowledge</p>	<p><i>I use ideas from other people when I am designing</i></p> <p><i>I produce a plan and explain it</i></p> <p><i>I evaluate and suggest improvements for my designs</i></p> <p><i>I evaluate products for both their purpose and appearance</i></p> <p><i>I explain how I have improved my original design</i></p> <p><i>I present a product in an interesting way</i></p> <p><i>I measure accurately</i></p> <p><i>I persevere and adapt my work when my original ideas do not work</i></p> <p><i>I know how to be both hygienic and safe when using food</i></p>
<p>Skills</p>	<p>Design <i>use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</i></p> <p>Make <i>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</i> <i>select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</i></p> <p>Evaluate <i>investigate and analyse a range of existing products</i> <i>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</i> <i>understand how key events and individuals in design and technology have helped shape the world</i></p> <p>Technical knowledge <i>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</i> <i>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</i> <i>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</i> <i>apply their understanding of computing to program, monitor and control their products.</i></p> <p>Cooking and Nutrition <i>understand and apply the principles of a healthy and varied diet</i> <i>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</i> <i>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</i></p>

<p>Year 5 - Maple Components</p> <p>Knowledge</p>	<p>I come up with a range of ideas after collecting information from different sources</p> <p>I produce simple step by step plans</p> <p>I suggest alternative plans; outlining the positive features and draw backs</p> <p>I explain how a product will appeal to a specific audience</p> <p>I evaluate appearance and function against original criteria</p> <p>I use a range of tools and equipment competently</p> <p>I make a prototype before I make a final version</p> <p>I show that I can be both hygienic and safe in the kitchen</p>
<p>Skills</p>	<p>Design use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world</p> <p>Technical knowledge apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products.</p> <p>Cooking and Nutrition understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>

<p>Year 6 – Chestnut Components</p> <p>Knowledge</p>	<p>I use market research to inform my plans and ideas</p> <p>I follow and refine my plans</p> <p>I justify my plans in a convincing way</p> <p>I show that I consider culture and society in my plans and designs</p> <p>I show that I can test and evaluate my products</p> <p>I explain how products should be stored and give reasons</p> <p>I work within a budget</p> <p>I evaluate my product against clear criteria</p>
<p>Skills</p>	<p>Design use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world</p> <p>Technical knowledge apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products.</p> <p>Cooking and Nutrition understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>