**Design and Technology Curriculum overview and planning progression 2022-2023**

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| **TERM** | **AUTUMN** | **SPRING** | **SUMMER 1** |
| **OAK** | Textiles: Puppets  ELG - Make use of props and materials when role playing characters in narratives and stories | Cooking and Nutrition: Fruits and Vegetables  ELG -Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.  Share their creations, explaining the process they have used. | Structures: Making a Windmill  ELG - safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. |
| **SYCAMORE** | Mechanisms:  Making a Moving Animal | Textiles:  Egyptian Collars | Cooking and Nutrition: Where in the World?  Eating Seasonally |
| **ASH** | Structures: Pavilions | Mechanisms: Mechanical systems exploring pneumatics toys | Electricity: Torches |
| **HAZEL** | Electricity: Doodlers | Cooking and Nutrition: What could be healthier | Structures: Bridges |
| **MAPLE** | Textiles: Waistcoats | Mechanisms: Automated Toys | Electricity: Electrical steady hand game |

**OAK CLASS**

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|  | FOCUS | SUBSTANTIVE KNOWLEDGE | DISCIPLINARY KNOWLEDGE | |
| AUTUMN | Textiles: Puppets | * To know that ‘joining technique’ means connecting two pieces of material together. * To know that there are various temporary methods of joining fabric by using staples, glue or pins. * To understand that different techniques for joining materials can be used for different purposes. * To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. * To know that drawing a design idea is useful to see how an idea will look. | Skills | * Using a template to create a design for a puppet. * Cutting fabric neatly with scissors. * Using joining methods to decorate a puppet. * Sequencing steps for construction. * Reflecting on a finished product, explaining likes and dislikes. |
| Vocab | Decorate, design, fabric  glue, model, hand puppet, safety pin  staple, stencil, template |
| Key Events and Individuals |  |
| SPRING | Cooking and Nutrition: Fruits and Vegetables | * To understand the difference between fruits and vegetables. * To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber). * To know that a blender is a machine which mixes ingredients together into a smooth liquid. * To know that a fruit has seeds and a vegetable does not. * To know that fruits grow on trees or vines. * To know that vegetables can grow either above or below ground. * To know that vegetables can come from different parts of the plant. | Skills | * Designing smoothie carton packaging by-hand or on ICT software. * Chopping fruit and vegetables safely to make a smoothie. * Identifying if a food is a fruit or a vegetable. * Learning where and how fruits and vegetables grow. * Tasting and evaluating different food combinations. * Describing appearance, smell and taste. * Suggesting information to be included on packaging. |
| Vocab | Fruit, vegetable, seed, leaf, root, stem  smoothie, healthy, carton, design, flavour  peel, slice |
| Key Events and Individuals |  |
| SUMMER | Structures: Making a Windmill | * To understand that the shape of materials can be changed to improve the strength and stiffness of structures. * To understand that cylinders are a strong type of structure (and, therefore, they are the main shape used for windmills and lighthouses). * To understand that axles are used in structures and mechanisms to make parts turn in a circle. * To begin to understand that different structures are used for different purposes. * To know that a structure is something that has been made and put together. | Skills | * Learning the importance of a clear design criteria. * Including individual preferences and requirements in a design. * Making stable structures from card, tape and glue. * Learning how to turn 2D nets into 3D structures. * Following instructions to cut and assemble the supporting structure of a windmill. * Making functioning turbines and axles which are assembled into a main supporting structure. |
| Vocab | Axle, bridge, design, design criteria  Model, net, packaging, structure, template  unstable, stable, strong, weak |
| Key Events and Individuals |  |

**SYCAMORE CLASS**

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| --- | --- | --- | --- | --- |
|  | FOCUS | SUBSTANTIVE KNOWLEDGE | DISCIPLINARY KNOWLEDGE | |
| AUTUMN | Mechanisms:  Making a Moving Animal | * To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. * To know that there is always an input and an output in a mechanism. * To know that an input is the energy that is used to start something working. * To know that an output is the movement that happens as a result of the input. * To know that a lever is something that turns on a pivot. * To know that a linkage mechanism is made up of a series of levers. | Skills | * Creating a design criteria for a moving animal as a class. * Designing a moving animal for a specific audience in accordance with a design criteria. * Making linkages using card for levers and split pins for pivots. * Experimenting with linkages adjusting the widths, lengths and thicknesses of card used. * Cutting and assembling components neatly. * Evaluating own designs against design criteria. * Using peer feedback to modify a final design. |
| Vocab | Axle, design criteria, input, linkage  Mechanical, output, pivot  wheel |
| Key Events and Individuals |  |
| SPRING | Textiles:  Egyptian Collars | * To know that appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric. * To understand that a product’s function relies on material choices. * To identify and explain some materials and explain their aesthetic and/or functional properties. | Skills | * Designing and making a template for an Eygptian collar and applying individual design criteria. * Following their design criteria to create an Egyptian collar. * Selecting and cutting fabrics with ease using fabric scissors. * Threading needles with greater independence. * Tying knots with greater independence. * Sewing cross stitch to decorate or join fabric. * Decorating fabric using appliqué, beads (or other embellishments), ribbon and pinking scissors. * Evaluating an end product. |
| Vocab | Appliqué, cross-stitch, fabric, running stitch, patch, thread, embellish  template, cotton, silk, polyester, wrinkle  tear, water-resistant, breathable, matt  shiny, biodegrade, pinking |
| Key Events and Individuals |  |
| SUMMER | Cooking and Nutrition: Where in the World?  Eating Seasonally | * To know that not all fruits and vegetables can be grown in the UK. * To know that climate affects food growth. * To know that vegetables and fruit grow in certain seasons. * To know that cooking instructions are known as a ‘recipe’. * To know that imported food is food that has been brought into the country. * To know that exported food is food that has been sent to another country. * To understand that imported foods travel from far away and this can negatively impact the environment. * To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre. * To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health. * To know safety rules for using, storing and cleaning a knife safely. * To know that similar coloured fruits and vegetables often have similar nutritional benefits. | Skills | * Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish. * Knowing how to prepare themselves and a workspace to cook safely in, learning the basic rules to avoid food contamination. * Following the instructions within a recipe. * Establishing and using design criteria to help test and review dishes. * Describing the benefits of seasonal fruits and vegetables and the impact on the environment. * Suggesting points for improvement when making a seasonal tart. |
| Examples/Vocab | Climate, diet, imported, ingredients  natural, processed, reared, recipe  seasonal, seasons, sugar |
| Key Events and Individuals |  |

**ASH CLASS**

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| --- | --- | --- | --- | --- |
|  | FOCUS | SUBSTANTIVE KNOWLEDGE | DISCIPLINARY KNOWLEDGE | |
| AUTUMN | Structures: Pavilions | * To understand what a frame structure is. * To know that a ‘free-standing’ structure is one that can stand on its own. * To know that a pavilion is a decorative building or structure for leisure activities. * To know that cladding can be applied to structures for different effects. * To know that aesthetics are how a product looks. * To know that a product’s function means its purpose. * To understand that the target audience means the person or group of people a product is designed for. * To know that architects consider light, shadow and patterns when designing | Skills | * Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. * Building frame structures designed to support weight. * Creating a range of different shaped frame structures. * Making a variety of free-standing frame structures of different shapes and sizes. * Selecting appropriate materials to build a strong structure and for the cladding. * Reinforcing corners to strengthen a structure. * Creating a design in accordance with a plan. * Learning to create different textural effects with materials. * Evaluating structures made by the class. * Describing what characteristics of a design and construction made it the most effective. * Considering effective and ineffective designs. |
| Vocab | 3D shapes, cladding, design criteria  innovative, natural, reinforce, structure |
| Key Events and Individuals |  |
| SPRING | Mechanisms: Mechanical systems exploring pneumatics toys | * To understand how pneumatic systems work. * To understand that pneumatic systems can be used as part of a mechanism. * To know that pneumatic systems operate by drawing in, releasing and compressing air. | Skills | * Designing a toy that uses a pneumatic system. * Developing design criteria from a design brief. * Generating ideas using thumbnail sketches and exploded diagrams. * Learning that different types of drawings are used in design to explain ideas clearly. * Creating a pneumatic system to create a desired motion. * Building secure housing for a pneumatic system. * Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy. * Selecting materials due to their functional and aesthetic characteristics. * Manipulating materials to create different effects by cutting, creasing, folding and weaving. * Using the views of others to improve designs. * Testing and modifying the outcome, suggesting improvements. * Understanding the purpose of exploded-diagrams through the eyes of a designer and their client. |
| Vocab | Mechanism, lever, pivot, linkage system  pneumatic system, input, output  component, thumbnail sketch, research  adapt, properties, reinforce, motion |
| Key Events and Individuals |  |
| SUMMER | Electricity: Torches | * To understand that electrical conductors are materials which electricity can pass through. * To understand that electrical insulators are materials which electricity cannot pass through. * To know that a battery contains stored electricity that can be used to power products. * To know that an electrical circuit must be complete for electricity to flow. * To know that a switch can be used to complete and break an electrical circuit. | Skills | * Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. * Making a torch with a working electrical circuit and switch. * Using appropriate equipment to cut and attach materials. * Assembling a torch according to the design and success criteria. * Evaluating electrical products. * Testing and evaluating the success of a final product. |
| Vocab | Battery, bulb, buzzer, conductor, circuit  circuit diagram, electricity, insulator  series circuit, switch, component, design  design criteria, diagram, evaluation  LED, model, shape target audience  Input, recyclable theme, aesthetics  assemble, equipment, ingredients  Packaging, properties, sketch  test |
| Key Events and Individuals | Sir Joseph Swan and Thomas Edison |

**HAZEL CLASS**

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|  | FOCUS | SUBSTANTIVE KNOWLEDGE | DISCIPLINARY KNOWLEDGE | |
| AUTUMN | Electricity: Doodlers | * To understand how motors are used in electrical products. * Be able to identify simple circuit components (battery, bulb and switch) with a basic explanation of their function (e.g. the battery powers the circuit). * Explaining that a series circuit is assembled in a loop to allow the electricity to flow along one path, with no crossover wires. * Understand that a motor as a circuit component that changes electrical energy into movement. | Skills | * Taking apart a product and reassemble it. * Determining which parts of the product affect its function. * Determining which parts of the product affect its form. * Altering the way a product functions by tinkering with its configuration. * Incorporating an electrical system that uses a motor. |
| Vocab | Develop, stable, target user, investigate, product analysis, problem-solve, configuration, motor, motorised  product analysis, series circuit, circuit component, current, DIY (do it yourself), hobby |
| Key Events and Individuals |  |
| SPRING | Cooking and Nutrition: What could be healthier? | * To understand where meat comes from – learning that beef is from cattle and how beef is reared and processed, including key welfare issues. * To know that I can adapt a recipe to make it healthier by substituting ingredients. * To know that I can use a nutritional calculator to see how healthy a food option is. * To understand that ‘cross-contamination’ means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects. | Skills | * Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. * Writing an amended method for a recipe to incorporate the relevant changes to ingredients. * Designing appealing packaging to reflect a recipe. * Cutting and preparing recipes safely. * Using equipment safely, including knives, hot pans and hobs. * Knowing how to avoid cross-contamination. * Following a step-by-step method carefully to make a recipe. * Identifying the nutritional differences between different products and recipes |
| Vocab | Beef, reared, processed, ethical, diet  Ingredients, supermarket, farm, balanced |
| Key Events and Individuals |  |
| SUMMER | Structures: Bridges | * To understand some different ways to reinforce structures. * To understand how triangles can be used to reinforce bridges. * To know that properties are words that describe the form and function of materials. * To understand why material selection is important based on their properties. * To understand the material (functional and aesthetic) properties of wood. | Skills | * Designing a stable structure that is able to support weight. * Creating a frame structure with focus on triangulation. * Making a range of different shaped beam bridges. * Using triangles to create truss bridges that span a given distance and support a load. * Building a wooden bridge structure. * Independently measuring and marking wood accurately. * Selecting appropriate tools and equipment for particular tasks. * Using the correct techniques to saw safely. * Identifying where a structure needs reinforcement and using card corners for support. * Explaining why selecting appropriate materials is an important part of the design process. * Understanding basic wood functional properties. * Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary. * Suggesting points for improvements for own bridges and those designed by others. |
| Vocab | beam bridge, arch bridge, truss bridge  strength, technique, corrugation  lamination, stiffness, rigid, factors  stability, visual appeal, aesthetics, joints  mark out, hardwood, softwood  wood file/rasp, sandpaper/glasspaper  bench hook/vice, tenon saw/coping saw  assemble, material properties, reinforce  wood sourcing, evaluate,quality of finish  accuracy |
| Key Events and Individuals |  |

**MAPLE CLASS**

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|  | FOCUS | SUBSTANTIVE KNOWLEDGE | DISCIPLINARY KNOWLEDGE | |
| AUTUMN | Textiles: Waistcoats  *.* | * To understand that it is important to design clothing with the client/target customer in mind. * To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric. * To understand the importance of consistently sized stitches. | Skills | * Designing a waistcoat in accordance with a specification and design criteria to fit a specific theme. * Annotating designs. * Using a template when pinning panels onto fabric. * Marking and cutting fabric accurately, in accordance with a design. * Sewing a strong running stitch, making small, neat stitches and following the edge. * Tying strong knots. * Decorating a waistcoat – attaching objects using thread and adding a secure fastening. * Learning different decorative stitches. * Sewing accurately with even regularity of stitches. * Evaluating work continually as it is created. |
| Examples/Vocab | Annotate, decorate, design criteria  Fabric, target customer, waistcoat  waterproof |
| Key Events and Individuals |  |
| SPRING | Mechanisms: Automata Toys | * Understand the word ‘accurate’ Neat and correct to the intended measurements * Know automata frame components need to be accurate for all of the parts to operate as a mechanism, they need to fit well together * Know the joints of my frame should be secured at right angles * Understand what an exploded diagram is * Understand what a follower, follower topper and follower base is * Explain how the cam profile affects the follower. * Understand the cam profile causes a follower to rise, fall or remain static at different points depending on its shape | Skills | * To prepare wood for assembly by measuring, marking and cutting each piece * To assemble the automata frame components and supports with the help of an exploded-diagram * Measure, mark and check the accuracy of the wood and card automata components * Suggest appropriate design criteria points to fulfil the design brief * Complete an automata mechanism including cam, follower and axle * Apply the housing and finishing touches to the automata frame |
| Examples/Vocab | Automata, cam, cam profile, follower  follower base, follower topper, accurate  inner-workings, cross-sectional diagram  mechanism, storefront, housing, measure  flat-pack, exploded diagram, tenon saw  bench hook, components |
| Key Events and Individuals |  |
| SUMMER | Electricity: Electrical steady hand game | * To know that ‘form’ means the shape and appearance of an object. * To know the difference between ‘form’ and ‘function’. * To understand that ‘fit for purpose’ means that a product works how it should and is easy to use. * To know that ‘form over purpose’ means that a product looks good but does not work very well. * To know the importance of ‘form follows function’ when designing: the product must be designed primarily with the function in mind. * To understand the diagram perspectives ‘top view’, ‘side view’ and ‘back’. | Skills | * Designing a steady hand game, identifying and naming the components required. * Drawing a design from three different perspectives. * Generating ideas through sketching and discussion. * Modelling ideas through prototypes. * Understanding the purpose of products (toys), including what is meant by ‘fit for purpose’ and ‘form over function’. * Constructing a stable base for a game. * Accurately cutting, folding and assembling a net. * Decorating the base of the game to a high-quality finish. * Making and testing a circuit. * Incorporating a circuit into a base. * Testing their own and others’ finished games, identifying what went well and making suggestions for improvement. * Gathering images and information about existing children’s toys. * Analysing a selection of existing children’s toys. |
| Vocab | Assemble, battery, battery pack  Benefit, bulb, bulb holder, buzzer, circuit  circuit symbol, component, conductor  copper, design, design criteria, evaluation  fine motor skills, fit for purpose, form  function, gross motor skills, insulator  LED, user |
| Key Events and Individuals |  |

**Disciplinary Knowledge in D.T.**

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|  | **Design** | **Make** | **Evaluate** |
| OAK | Learning the importance of a clear design criteria  Including individual preferences and requirements in a design  Designing smoothie carton packaging by-hand or on ICT software  Using a template to create a design for a puppet | Making stable structures from card, tape and glue  Learning how to turn 2D nets into 3D structures  Following instructions to cut and assemble the supporting structure of a windmill  Making functioning turbines and axles which are assembled into a main supporting structure  Chopping fruit and vegetables safely to make a smoothie  Identifying if a food is a fruit or a vegetable  Learning where and how fruits and vegetables grow  Cutting fabric neatly with scissors Using joining methods to decorate a puppet  Sequencing steps for construction | Tasting and evaluating different food combinations  Describing appearance, smell and taste  Suggesting information to be included on packaging  Reflecting on a finished product, explaining likes and dislikes |
| SYCAMORE | Designing and making a template from an existing cushion and applying individual design criteria  Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish  Creating a class design criteria for a moving animal  Designing a moving animal for a specific audience in accordance with a design criteria | Following design criteria to create a cushion or Egyptian collar  Selecting and cutting fabrics with ease using fabric scissors  Threading needles with greater independence  Tying knots with greater independence Sewing cross stitch to join fabric Decorating fabric using appliqué Completing design ideas with embellishing the collars based on design ideas  Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination  Following the instructions within a recipe  Making linkages using card for levers and split pins for pivots Experimenting with linkages adjusting the widths, lengths and thicknesses of card used  Cutting and assembling components neatly | Evaluating an end product and thinking of other ways in which to create similar items  Establishing and using design criteria to help test and review dishes  Describing the benefits of seasonal fruits and vegetables and the impact on the environment Suggesting points for improvement when making a seasonal tart  Evaluating own designs against design criteria  Using peer feedback to modify a final design |
| ASH | Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas  Designing a toy which uses a pneumatic system  Developing design criteria from a design brief Generating ideas using thumbnail sketches and exploded diagrams  Learning that different types of drawings are used in design to explain ideas clearly  Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect  Building frame structures designed to support weight | Making a torch with a working electrical circuit and switch  Using appropriate equipment to cut and attach materials  Assembling a torch according to the design and success criteria  Creating a pneumatic system to create a desired motion  Building secure housing for a pneumatic system  Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy  Selecting materials due to their functional and aesthetic characteristics  Manipulating materials to create different effects by cutting, creasing, folding, weaving  Creating a range of different shaped frame structures  Making a variety of free standing frame structures of different shapes and sizes  Selecting appropriate materials to build a strong structure and for the cladding  Reinforcing corners to strengthen a structure  Creating a design in accordance with a plan  Learning to create different textural effects with materials | Evaluating electrical products  Testing and evaluating the success of a final product  Using the views of others to improve designs  Testing and modifying the outcome, suggesting improvements  Understanding the purpose of exploded-diagrams through the eyes of a designer and their client  Evaluating structures made by the class  Describing what characteristics of a design and construction made it the most effective  Considering effective and ineffective designs |
| HAZEL | Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product  Developing design criteria based on finding from investigating existing products Developing design criteria that clarifies the target use  Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients  Writing an amended method for a recipe to incorporate the relevant changes to ingredients  Designing appealing packaging to reflect a recipe  Designing a stable structure that is able to support weight  Creating frame structure with focus on triangulation | Altering a product’s form and function by tinkering with its configuration.  Making a functional series circuit, incorporating a motor  Constructing a product with consideration for the design criteria Breaking down the construction process into steps so that others can make the product  Cutting and preparing vegetables safely  Using equipment safely, including knives, hot pans and hobs  Knowing how to avoid cross-contamination  Following a step by step method carefully to make a recipe  Making a range of different shaped beam bridges  Using triangles to create truss bridges that span a given distance and supports a load  Building a wooden bridge structure Independently measuring and marking wood accurately  Selecting appropriate tools and equipment for particular tasks  Using the correct techniques to saws safely  Identifying where a structure needs reinforcement and using card corners for support  Explaining why selecting appropriating materials is an important part of the design process Understanding basic wood functional properties | Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses Determining which parts of a product affect its function and which parts affect its form  Analysing whether changes in configuration positively or negatively affect an existing product Peer evaluating a set of instructions to build a product  Identifying the nutritional differences between different products and recipes  Identifying and describing healthy benefits of food groups  Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary  Suggesting points for improvements for own bridges and those designed by others |
| MAPLE | Designing a steady hand game - identifying and naming the components required Drawing a design from three different perspectives  Generating ideas through sketching and discussion  Modelling ideas through prototypes Understanding the purpose of products (toys), including what is meant by ‘fit for purpose’ and ‘form over function’  Designing a waistcoat in accordance to specification linked to set of design criteria to fit a specific theme  Annotating designs  Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement Understanding how linkages change the direction of a force  Making things move at the same time Understanding and drawing cross-sectional diagrams to show the inner-working | Constructing a stable base for a game  Accurately cutting, folding and assembling a net  Decorating the base of the game to a high quality finish  Making and testing a circuit Incorporating a circuit into a base  Using a template when pinning panels onto fabric  Marking and cutting fabric accurately, in accordance with a design  Sewing a strong running stitch, making small, neat stitches and following the edge  Tying strong knots  Decorating a waistcoat -attaching objects using thread and adding a secure fastening  Learning different decorative stitches  Sewing accurately with even regularity of stitches  Measuring, marking and checking the accuracy of the jelutong and dowel pieces required  Measuring, marking and cutting components accurately using a ruler and scissors  Assembling components accurately to make a stable frame Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set | Testing own and others finished games, identifying what went well and making suggestions for improvement  Gathering images and information about existing children’s toys  Analysing a selection of existing children’s toy  Evaluating work continually as it is created  Evaluating the work of others and receiving feedback on own work  Applying points of improvements  Describing changes they would make/do if they were to do the project again |

**Core Threads in DT**

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| **Class** | **Textiles** | **Cooking and Nutrition** | **Structure** | **Electricity** | **Mechanisms** | **Computing** |
| Oak | Explore different methods of joining fabrics and experiment to determine the pros and cons of each technique. | Learn about the basic rules of a healthy and varied diet to create dishes.  Understand where food comes from, for example plants and animals | Build structures such as windmills and chairs, exploring how they can be made stronger, stiffer and more stable. Recognise areas of weakness through trial and error.  Cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses) Axles are used to make parts turn in a circle To know that a structure is something that has been made and put together |  |  |  |
| Sycamore | Understand that fabric can be layered for effect, recognising the appearance and technique for different stitch and fastening types, including their: ● Strength. ● Appropriate use. ● Design  Applique, seams, turning inside, leave space on the fabric for the seam | Understand and apply the principles of a healthy and varied diet to prepare and cook a variety of dishes using a range of cooking techniques and methods. Understand what is meant by seasonal foods. Know where and how ingredients are sourced.  Know that not all fruits and vegetables can be grown in the UK, climate affects food growth, cooking instructions are known as a ‘recipe’. Imported food is food which has been brought into the country, exported food is food which has been sent to another country. Similar coloured fruits and vegetables often have similar nutritional benefits |  |  | Introduce and explore simple mechanisms, such as sliders, wheels and axles in their designs. Recognise where mechanisms such as these exist in toys and other familiar products. |  |
| Ash |  |  | Continue to develop KS1 exploration skills, through more complex builds such as pavilion and bridge designs. Understand material selection and learn methods to reinforce structures  Understand what a frame structure is. To know that a ‘free-standing’ structure is one which can stand on its own | Create functional electrical products that use series circuits, incorporating different components. Consider how the materials used in these products can: ● Protect the circuitry. ● Reflect light. ● Conduct electricity. ● Insulate.  Understand that electrical conductors are materials which electricity can pass through, electrical insulators are materials which electricity cannot pass through, battery contains stored electricity that can be used to power products.  To know that an electrical circuit must be complete for electricity to flow, know that a switch can be used to complete and break an electrical circuit | Extend pupils understanding of individual mechanisms, to form part of a functional system, for example: Automatas, that use a combination of cams, followers, axles/shaft, cranks and toppers.  To understand how pneumatic systems work, that they pneumatic systems can be used as part of a mechanism.  To know that pneumatic systems operate by drawing in, releasing and compressing air |  |
| Hazel |  | Understand and apply the principles of a healthy and varied diet to prepare and cook a variety of dishes using a range of cooking techniques and methods. Know where and how ingredients are sourced.  Understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues  use a nutritional calculator to see how healthy a food option is Understand that ‘cross-contamination’ means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects | Continue to develop KS1 exploration skills, through more complex builds such as pavilion and bridge designs. Understand material selection and learn methods to reinforce structures  Understand how triangles can be used to reinforce bridges  To understand the material (functional and aesthetic) properties of wood | Create functional electrical products that use series circuits, incorporating different components such as bulbs, LEDs, switches, buzzers and motors. Consider how the materials used in these products can: ● Protect the circuitry. ● Reflect light. ● Conduct electricity. ● Insulate.  Know that series circuits only have one direction for the electricity to flow, when there is a break in a series circuit, all components turn off Know that an electric motor converts electrical energy into rotational movement, causing the motor’s axle to spin. |  |  |
| Maple | Understand that fabric can be layered for effect, recognising the appearance and technique for different stitch and fastening types, including their: ● Strength. ● Appropriate use. ● Design  Design clothing with the client/ target customer in mind, using a template (or clothing pattern) helps to accurately mark out a design on fabric, consistently sized stitches are important |  |  | Create functional electrical products that use series circuits, incorporating different components such as bulbs, LEDs, switches, buzzers and motors. Consider how the materials used in these products can: ● Protect the circuitry. ● Reflect light. ● Conduct electricity. ● Insulate.  Know that batteries contain acid, which can be dangerous if they leak  To know the names of the components in a basic series circuit including a buzzer | Extend pupils understanding of individual mechanisms, to form part of a functional system, for example: Automatas, that use a combination of cams, followers, axles/shaft, cranks and toppers  Understand that the mechanism in an automata uses a system of cams, axles and followers  and that different shaped cams produce different outputs |  |