Baydon St Nicholas DT Units Taught 2026-2027

Robins

DT ROBINS EYFS and	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Area of Learning	**Mechanisms: Matching slider game**	**COOKING AND NUTRI Smoothies**	**Structures:** A chair for a	**TEXTILES:** Simple Stcil	**MECHANISMS Wheels and Axles**	★ **As overflow time to complete units where school events takeove provide more time for to complete projects**
Unit Outcomes	Understand that produc us are designed and identify produ mechanisms. Describe the movement mechanisms as up and down, left forwards and backwards. Think about the needs o Communicate ideas. Work independently to n working slider mechanism. Use a range of tools with accuracy to cut and join materials. Understand the benefits different materials and explain cho Explain what went well a improve about their product.	Describe fruits and veg explain how to identify fruits. Name a range of place and vegetables grow. Describe basic charac fruit and vegetables. Prepare fruits and veg make a smoothie.	Describe how chairs a different users and purposes. Explain how design br design criteria help when making product. Name some shapes th stronger than others. Describe how making thicker makes it more stiff. Understand and use th of strong, weak, stiff and flexible. Make a stable chair st particular user. Select suitable materia them securely. Evaluate a product aga design criteria. Improve parts of a pro on the design criteria.	Name some objects m Describe the look and different fabrics. Thread a needle. Make a series of stitch match each other in embroidery fa Choose colours and s design. Explain their ideas to verbally and with a sketch. Choose materials bas texture. Follow the general pos lines of a design with stitches. Say what they like abo else's stitching and what could be	hoose and use the mo tool for cutting out different shape Test and compare whe different shapes, thicknesses and Estimate the middle of Design, draw and labe that uses a simple mechanism. Identify the needs of th Make and finish a simp toy. Evaluate a product aga design criteria and provide feedba	

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Year 1 Key Skills	Design Thinking about what others might want from a design. Beginning to recognise how products and designs in the world around us solve certain needs. Considering who they are designing for, by identifying the user. Stating what they intend to make and why, by identifying the purpose. Talking about ideas with purpose and the user in mind. Talking about existing products when generating ideas. Creating mock-ups to communicate designs. Make Planning more than one step ahead. Choosing between a small number of materials, ingredients or components. Explaining their choices based on personal experiences. Requesting equipment appropriate to the purpose (e.g. scissors for cutting, glue for joining). Explaining in simple terms why certain tools must be handled carefully. Following and recalling simple safety instructions. Beginning to use objects with a fixed width or length to create even spacing of markings or cuts (e.g. a lolly stick). Refining their grip to cut competently and confidently. Cutting straight lines and evenly spaced lines. Beginning to cut large shapes and thicker materials like card. Puncturing holes. Applying masking tape to fix something in place or join the edges. Using tools, like scissors, to create shapes. Beginning to cut large shapes and thicker materials like card. Evaluate Discussing existing products, saying what they like about them. Discussing how their products could be improved based on personal preferences. Saying what they like about their peers' designs and products. Accepting feedback and understanding it is meant to improve their work. Technical knowledge Recognising and exploring everyday objects that have mechanisms. Recognising everyday objects that	Designing smoothie ca packaging by hand. Chopping fruit and veg safely to make a smoothie. Juicing fruits to make Identifying if a food is Learning where and h vegetables grow. Tasting and evaluating foods. Describing appearanc taste. Suggesting informatio included on packaging.	Design Using a simple design brief that outlines the intended use, target user and key features of the product to create simple design criteria. Creating ideas with design criteria in mind. Referring to specific parts of existing products when generating ideas. Make Choosing materials, ingredients or components from a wider range of materials, ingredients or components. Explaining their choices based on the properties of materials and components. Looking for ways to make cutting easier, for example, turning the material they are cutting, not fully closing the scissors, etc. Choosing known geometric shapes when making. Beginning to shape objects to improve how they work. Evaluate Discussing a range of existing products and saying what they like and dislike about them. Comparing a range of products and explaining why some better meet different design criteria than others. Evaluating their ideas and creations against simple design criteria. Technical knowledge Recognising that different structures are used for different purposes. Exploring the features of structures. Making stable structures from card. Creating supporting structures to aid stability. Using stable objects like cylinders to create structures. Building a strong and stiff structure by folding paper. Folding to strengthen or stiffen. Comparing the stability of different shapes. Identifying the weakest part of a structure.	Design Stating what they intend to make and why – identifying the purpose. Talking about ideas, with purpose and user in mind. Using basic drawing skills to communicate ideas. Make Choosing between a small number of materials, ingredients or components. Explaining their choices based on personal experiences. Explaining in simple terms why certain tools must be handled carefully. Following and recalling simple safety instructions. Using a straightedge to draw a straight line. Beginning to use objects with a fixed width or length to create even spacing of markings or cuts. (e.g. a lolly stick). Using a large plastic needle and large-weave embroidery fabric to begin to create a running stitch. Applying masking tape to fix something in place or join to edges. Adding texture to create visual interest. Evaluate Saying what they like about their peers' designs and products. Accepting feedback and understanding it is meant to improve their work. Technical knowledge Discussing fabric properties. Threading large needles. Rehearsing sewing techniques with large needles and thick thread, like wool. Sewing a running stitch in large-weave embroidery fabric or hessian. Creating patterns and following them with stitching. Spacing stitches evenly.	Design Thinking about what others might want from a design. Beginning to recognise how products and designs in the world around us solve certain needs. Considering who they are designing for – by identifying the user. Stating what they intend to make and why – by identifying the purpose. Talking about ideas with purpose and user in mind. Talking about existing products when generating ideas. Using basic drawing skills to communicate ideas. Make Planning more than one step ahead. Choosing between a small number of materials, ingredients or components. Explaining their choices based on personal experiences. Requesting equipment appropriate to the purpose (e.g. scissors for cutting and glue for joining). Explaining in simple terms why certain tools must be handled carefully. Following and recalling simple safety instructions. Finding the middle of an object. Refining their grip to cut competently and confidently. Cutting straight lines and evenly spaced lines. Beginning to cut large shapes and thicker materials like card. Puncturing holes. Recognising the edges of paper and card need to be stuck firmly using a glue stick. Using tools, like scissors, to create shapes. Beginning to use controlled painting or colouring techniques to finish a product. Adding texture to create visual interest.	

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Year 1Key Knowledge	Design To know: The user is the person who will use the product. Different users may want different things from a design. Designers usually design and make something to solve a problem. Who they are designing for makes a difference to what they design. The purpose is what something is for. A mock-up is a model of how something works. Make To know: Choosing different materials or components will have an effect on what their product does or looks like. Different equipment does different things. Names of common pieces of equipment. Some tools are sharp like scissors and knives. Following instructions helps with safety. Cutting in a straight line can be helpful when making. Evaluate To know: Some products will be better than others. Their ideas or products can be made better. Technical knowledge To know:	That a blender is a ma mixes ingredients together into a liquid. That a fruit has seeds vegetable does not. That fruits grow on tre That vegetables can g above or below ground. That vegetables are ar of a plant.	Design To know: A design brief helps to decide what to make. Design criteria are the steps for making a product successful. Design criteria help when thinking of ideas. Different products work in different ways and have parts that make them work. Make To know: Some properties of materials, such as hard, soft, flexible, waterproof, strong, etc. The names of some geometric shapes, such as triangle, pyramid, square, cube, circle and sphere. Evaluate To know: Existing products can be evaluated against design criteria. Design criteria help to decide if their product is a success. Improve means to make something better. Technical knowledge To know: A structure is something that has been made and put	Design To know: Drawings are a way to explain ideas. Make To know: Choosing different materials or components will affect what the product does or looks like. The names of common pieces of equipment. Following instructions helps with safety. Spacing cuts or marks evenly can be useful. Texture is how something feels. Evaluate To know: Their ideas or products can be made better. Their final product might be different to their original idea. Their ideas can make someone else's work better. Other people's ideas can help make their work better. Technical knowledge To know: Evenly spaced stitches help when following a pattern.	Many things that move inside to help them work. Mechanisms usually li movement. An axle allows the whe without falling off.	

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Year 1 Key Vocabulary	mechanism movement slider	blend blender chopping board compare cut design evaluate flavour fork fruit healthy ingredients juice juicer leaf plant recipe root seed select smoothie stem table knife taste tree vegetable vine	design brief design criteria evaluate flexible improve select stiff strong thicker thinner weak	design even fabric like needle sketch stitch thread	axle axle holder better careful choose compare design dislike like mechanism movement product straight line tool turn user wheel worse	

Swifts

DT SWIFTS YEAR 2 &	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Area of Learning	**Cooking and Nutrition Adapting a recipe**	**Structures: Helmets**	**Electrical systems: Exploring electrical products**	**Digital world: Mindful moments timer**	**Textiles Fastenings**	**★ As overflow time to com where other school events t to provide more time for cla complete projects**

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Unit Outcomes	Describe features of bisc taste, texture and appearance. Explain why some biscu made for children, adults or specia Remember and follow si working in a safe and clean way. Follow a recipe with sup Use a budget to plan a r Adapt a recipe using adc ingredients to fit a design or budge Measure and mix ingred Contribute to a discussi criteria for evaluation	Describe what a shell and describe what makes an effec Design a helmet for a by choosing appropriate features. Explain layering techn strengthen a helmet. Use layering technique helmet and reflect on the process Evaluate the strengthe in the helmet and justify appropria strengthening techniques. Follow a design plan a appropriate techniques to strengt stiffen the helmet. Communicate with pe making improvements. Analyse helmets' stren weaknesses and evaluate how the their purpose.	dentify everyday produ electrical components and name t components. Make and test toggle a switches in electrical circuits. Explain why switches electrical products. Compare a toggle swit push switch. Research a design pro asking questions and conducting Describe a target audi group of people that a product is and identify the target audience fo product. Identify what a cross-s diagram is and why it is useful. Draw a cross-sectiona with labels that shows the inside o	State and/or describe advantages and disadvantages of products (timers). Understand how virtua features could be used as part of idea. Use research to inform criteria. Write a program that c timer on the virtual micro:bit base chosen seconds/minutes. Suggest where the err testing is unsuccessful, by compa correct code to their own. State key functions in editor (e.g. loops). Evaluate the immediat the virtual micro:bit timer and how function. Express which stages they enjoyed or found more challe Explain the need for a stand out against competition and importance of logos in business. Recall and describe th use of key tools used in Sketchpa software. Fulfil the design requir the logo. Evaluate the product u feedback from the user.	Identify the features, b disadvantages of a range of faste Write design criteria ar sleeve that satisfies the criteria. Make a template for th sleeve. Assemble their case u stitch they are comfortable with.	

DT SWIFTS YEAR 2 &	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 2 Key Skills	Understanding where fruits and vegetables come from. Selecting foods to create a balanced recipe. Selecting foods based on their food group. Key skills by unit Chopping fruit and vegetables safely to make a smoothie. Juicing fruits safely to make a smoothie. Describing appearance, smell and taste. Chopping foods safely to make a wrap. Grating foods. Snipping smaller foods instead of cutting.	Recognising that different structures are used for different purposes. Exploring the features of structures. Describing structures as buildings or freestanding structures. Key skills by unit Making stable structures from card. Creating supporting structures to aid stability. Using stable objects, such as cylinders, to create structures. Building a strong and stiff structure by folding paper. Folding to strengthen or stiffen. Comparing the stability of different shapes. Identifying the weakest part of a structure.	Identifying needs and problems Thinking about what others might want from a design. Beginning to recognise how products and designs in the world around us solve certain needs. Developing for a user Considering who they are designing for - identifying the user. Stating what they intend to make and why - identifying the purpose. Using a simple design brief that outlines the intended use, target user and key features of the product, to create simple design criteria. Generating ideas Talking about ideas, with purpose and user in mind. Talking about existing products when generating ideas. Creating ideas with design criteria in mind. Referring to specific parts of existing products when generating ideas.	Identifying needs and problems Thinking about what others might want from a design. Beginning to recognise how products and designs in the world around us solve certain needs. Developing for a user Considering who they are designing for - identifying the user. Stating what they intend to make and why - identifying the purpose. Using a simple design brief that outlines the intended use, target user and key features of the product, to create simple design criteria. Generating ideas Talking about ideas, with purpose and user in mind. Talking about existing products when generating ideas. Creating ideas with design criteria in mind. Referring to specific parts of existing products when generating ideas.	Discussing fabric properties. Threading large needles. Rehearsing sewing techniques with large needles and thick thread like wool. Sewing a running stitch in large-weave embroidery fabric or hessian. Beginning to sew stitches into a fabric. Key skills by unit Creating patterns and following them with stitching. Spacing stitches evenly. Pinning fabric to a template. Selecting fabric for sewing. Sewing a running stitch, with evenly spaced, neat, even stitches to join fabric. Marking and measuring: Measuring, marking and spacing materials accurately using simple tools and by identifying midpoints. Marking and measuring: Measuring, marking and spacing lines of a given length using simple tools. Cutting: Cutting straight and spaced lines, larger shapes and simple holes safely and with control. Cutting: Cutting a range of	

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Year 3 Key Skills	Design Designing a biscuit within a given budget. Conducting market research. Make Following a baking recipe. Understanding safety and hygiene rules. Adapting a recipe. Evaluate Evaluating an adapted recipe. Evaluating and comparing a range of products. Suggesting modifications.	Design Noticing simple problems or needs in their everyday life. Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences. Taking part in structured idea-generation sessions. Coming up with more ideas and considering the feasibility of their ideas in the classroom. Beginning to use 2D CAD software to communicate their ideas. Developing drawing and sketching skills with a focus on clarity and simplicity. Developing designs by adding detail and justifications about materials, tools, methods. Beginning to recognise the benefit of a range of diagram types or prototypes to communicate ideas. (eg. sketches, cross-sectional diagram, thumbnail sketches and exploded diagrams) Creating prototypes using materials with similar properties to their final design. Make Selecting materials, components or ingredients from a wider choice but within a limited design space (e.g. seasonal ingredients from May and June in the UK). Selecting materials, components or ingredients based on their form as well as their functional properties. Explaining their choices with regard to function and form. Suggesting simple safety rules based on their understanding of tool dangers. Participating in discussions about classroom safety procedures. Following detailed safety instructions. Using a ruler as a measuring tool with increasing accuracy. Cutting out more complex shapes accurately. Handle different sizes and types of scissors with confidence. Creating accurate	Design Noticing simple problems or needs in their everyday life. Using empathy and conducting simple surveys to recognise the needs of others. Coming up with more ideas and considering the feasibility of their ideas in the classroom. Developing drawing and sketching skills with a focus on clarity and simplicity. Beginning to recognise the benefit of a range of diagram types or prototypes to communicate ideas. (eg. sketches, cross-sectional diagram, thumbnail sketches and exploded diagrams) Make Selecting materials, components or ingredients from a wider choice but within a limited design space (e.g. seasonal ingredients from May and June in the UK). Explaining their choices with regard to function and form. Following detailed safety instructions. Evaluate Investigating and analysing a range of existing products by looking at their functionality and appeal. Analysing why specific products, designers or inventors are successful. Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements. Technical Recognising and exploring everyday electrical products. Identifying some electrical components. Using batteries and other electrical components safely. Creating a working electrical circuit. Incorporating switches into circuits.	Writing design criteria for a programmed timer (micro:bit). Exploring different mindfulness strategies. Applying the results of research to further inform my design criteria. Developing a prototype case for a mindful moment timer. Using and manipulating shapes and clipart by using computer-aided design (CAD), to produce a logo. Following a list of design requirements. Creating a 3D using modelling materials. Programming a micro:bit in the Microsoft micro:bit editor, to time a set number of seconds/ minutes upon button press. Investigating and analysing a range of timers by identifying and comparing their advantages and disadvantages. Evaluating a program against points on a design criteria and amending them to include any changes made. Documenting and evaluating a project. Understanding what a logo is and why they are important in the world of design and business. Testing a program for bugs (errors in the code). Finding and fixing bugs (debug) in code. Using an exhibition to gather feedback. Gathering feedback from the user to make suggested improvements to a product.	Writing design criteria articulating decisions made. Designing a personalis sleeve. Making and testing a p template with accuracy and in kee design criteria. Measuring, marking ar fabric using a paper template. Selecting a stitch style fabric. Sewing neatly using sr stitches. Incorporating a fasteni design. Testing and evaluating product against the original desig	

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Year 2 Key Knowledge	To know that fruits grow on trees or vin To know that vegetables ca above or below ground. To know that vegetables are of a plant (e.g. potatoes are roots, lettu cucumber is a fruit). To know that 'diet' means th drink that a person or animal usually ea To know that the five main f Carbohydrates, fruits and vegetables, p and foods high in fat and sugar. To know that a balanced die foods from different food groups. Key knowledge by unit To know that a fruit has seeds. To know that 'ingredients' means the ite or recipe. To know that different foods have differ taste and smell. To know that kitchen equipment can be prepare foods.	To know that a structu something that has been made ar together. To understand that the structure affects its strength. Key knowledge by unit To know that stable structures do To know that shapes and structur flat bases or legs are the most sta To know that adding weight to the structure can make it more stable To know that materials can be ma improve strength and stiffness. To know that a 'strong' structure i does not break easily. To know that a 'stiff' structure or r one which does not bend easily.	Identifying needs and problems To know that different users may want different things from a design. To know that the 'user' is the person who will use the product. To know that designers usually design and make something to solve a problem. Developing for a user To know that who they are designing for makes a difference to what they design. To know that the purpose is what something is for. To know that a design brief helps to decide what to make. To know that design criteria are the steps for making a product successful. Evaluating existing products To know that some products will be better than others. To know that existing products can be evaluated against design criteria. Evaluating own ideas and products To know that their ideas or products can be made better. To know that their final product might be different to their original idea. To know that design criteria help to decide if their product is a success.	Generating ideas To know that existing products can help when deciding what to design. To know that the design criteria help when thinking of ideas. To know that different products work in different ways and have parts that make them work. Identifying needs and problems To know that different users may want different things from a design. To know that the 'user' is the person who will use the product. To know that designers usually design and make something to solve a problem.	To know that sewing is a method of joining fabric. Key knowledge by unit To know that evenly spaced stitches help when following a pattern. To know that 'joining' 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 know that a template (or fabric pattern) is used to cut out the same shape multiple times.	

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Year 3 Key Knowledge	The amount of an ingredien known as the 'quantity'. Safety and hygiene are imp cooking. The following cooking techn measuring, mixing/stirring, cutting out a The importance of budgetin planning ingredients for a recipe. Products often have a targe	To know: A problem or need is something that a designer can help to solve. Thinking with others is called brainstorming. Not everything can be made in the classroom. CAD is computer-aided design. CAD can be used to better communicate ideas. Extra information on drawings or diagrams can help the user understand a design or idea. Thumbnail sketches are less detailed, quick sketches. An exploded diagram shows how the parts of a product fit together. A prototype is a detailed model that helps a user understand how a product will work. Make To know: Form is the look and shape of something. Function is what something does and how it works. Different pieces of equipment will be used at different stages in a plan. Different tools and equipment have different dangers. A ruler can be used to measure length. Scissors are useful for cutting out complex shapes, Creating accurate shapes improves how they look and sometimes their function. Evaluate To know: Some products are more successful than others because of their function. Designers and inventors create products. Choices of materials and	Design To know: A problem or need is something that a designer can help to solve. A target audience is a group of people that might like the idea. Not everything can be made in the classroom. Extra information on drawings or diagrams can help the user understand a design or idea. A cross-sectional diagram shows the inside of a product. Make To know: Form is the look and shape of something. Function is what something does and how it works. Evaluate To know: Some products are more successful than other because of their function. Designers and inventors create products. Choices of materials and equipment can affect the final product. Technical To know: An electrical system is a group of parts (components) that work together to transport electricity around a circuit. Some common features of an electric product (e.g. switch, battery, plug, dials, buttons, etc). A battery contains stored electricity that can be used to power products. An electrical circuit must be complete for electricity to flow. A switch can be used to complete and break an	To understand what variables are in programming. To know some of the features of a micro:bit. To know that an algorithm is a set of instructions to be followed by the computer. To know that it is important to check code for errors (bugs). To know that a simulator can be used as a way of checking code works before installing it onto an electronic device. To understand the terms 'ergonomic' and 'aesthetic'. To know that a prototype is a 3D model made out of cheap materials, that allows us to test design ideas and make better decisions about size, shape and materials. To know that an exhibition is a way for companies to showcase products, meet potential new customers and gather feedback from users.	To know that a fasteni something that holds two pieces together. To know that different types are useful for different purp To know that creating (prototype) of their design is usefu checking ideas and proportions.	

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Key Vocabulary	adapt addition appearance budget buttery combine comment compare construct cream crunchy cuboid cut design evaluate fold hygiene ingredients layout market research modify multiplication opinion pounds sieve sift target audience taste texture unique wooden spoon	analyse effective iteration reflect strengthen	battery bulb buzzer circuit cross-sectional diagram electricity research switch target audience wire	advantage aesthetic annotate assemble block brand brand identity bug clipart coding computer-aided desig criteria debug design develop disadvantage display ergonomic evaluate exhibition feedback form function join logo loop mindfulness model net program prototype research script sketchpad test timer user variable	criteria fabric fastening fix mock-up stitch template	

DT Firecrest YEAR4 & 5UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Unit Outcomes	Pupils who are secure will be able to: Explore and compare real textile products, thinking about how they look, how they are used and how they affect the environment. Develop and test design ideas by creating pattern pieces and making prototypes to explore how well they work. Use labelled drawings and diagrams to show clear design ideas, including how pattern pieces will fit together. Use fabrics and materials suitable for the product, thinking about how they look and how well they work. Make 3D textile shapes by carefully cutting, folding and joining materials to match the design.	Pupils who are secure will be able to: Explain simply what is meant by 'form' (the shape of a product) and 'function' (how a product works). State what they like or dislike about an existing children's toy and why. Learn about skills developed through play and apply this knowledge in a survey of one or more children's toys. Identify the components of a steady hand game. Design a steady hand game of their own according to their design criteria, using four different perspective drawings. Create a secure base for their game, with neat edges, that relates to their design. Make and test a functioning circuit and assemble it within a case.	Pupils who are secure will be able to: Explain the term constraints and why some are more important than others. Use sketches with labels to communicate ideas. Use 3D CAD software to communicate ideas. Modify a design to make it stronger and more stable using knowledge of triangulation and reinforcing. Select appropriate materials and tools for cutting and joining. Make a plan and equipment list for a project. Reinforce and stabilise a prototype of a structure. Apply a quality finish in a neat way and explain why the finish is important. Critically evaluate the success of a structure within constraints and suggest alternative, more sustainable, materials. Explain design decisions.	Pupils who are secure will be able to: Find a suitable recipe for their course. Record the relevant ingredients and equipment needed. Follow a recipe, including using the correct quantities of each ingredient. Write a recipe, explaining the process taken. Explain where certain key foods come from before they appear on the supermarket shelf.	Mark, saw and cut out components and supports of their varying degrees of accuracy to th measurements. Follow health and safe taking care with the equipment. Attempt a partial asse toys using an exploded diagram f teacher's demonstration. Develop a design idea descriptive notes. Explore different cam choose three for their follower top explanation of their choices. Create neat, decorate toppers with some accuracy. Measure and cut pane some inaccuracies to conceal the workings of the automata. Decorate and finish th meet the design criteria and brief. Evaluate their finished making descriptive and reflective function and form.	

DT Firecrest YEAR4 & 5UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 4 Key Skills	Design Developing drawing and sketching skills with a focus on clarity and simplicity. Developing designs by adding detail and justifications about materials, tools, method Make Cutting: Cutting more complex shapes and a wider range of materials and foods accurately and safely (e.g. using a bridge or claw hold when chopping foods). Joining: Joining materials securely by selecting and applying appropriate joining methods for the material and purpose. Evaluate Evaluating existing products Investigating and analysing a range of existing products by looking at their functionality and appeal. Analysing why specific products, designers or inventors are successful. Evaluating own ideas and products Technical Skills Sewing with smaller needles to create smaller stitches. Selecting similar or different colour thread to hide or show the stitch. Key skills by unit Creating a template	Recognising and exploring everyday electrical products. Key skills by unit Identifying some electrical components. Using batteries and other electrical components safely. Creating a working electrical circuit	Design Beginning to use 2D CAD softwar communicate their ideas. Developing drawing and sketchin focus on clarity and simplicity. Developing designs by adding de justifications about materials, tool Make Shaping: Creating and refining ac 3D shapes to suit the function of a Evaluate Evaluating how effective their chosen m tools were in fulfilling the design brief. Giving and receiving feedback Explaining why they think certain aspec design are effective or why they sugges Technical Skills Beginning to understand how diff structures are built. Key skills by unit Constructing a range of 3D shape Stiffening structures. Strengthening structures by ribbin Making a variety of free standing s structures of different shapes and	Identifying needs and problems Selecting equipment required for a seri based on the plan. Explain Cutting: Cutting more complex shapes range of materials and foods accurately (e.g. using a bridge or claw hold when foods). Giving and receiving feedback Explaining why they think certain aspec design are effective or why they sugges improvements. Reflecting on feedback to decide if and be used to improve future iterations. Identifying foods with different nu properties. Recognising the seasonality of fo Understanding that many foods a from other countries. Key skills by unit Following the instructions within a Tasting seasonal ingredients. Selecting seasonal ingredients. Peeling ingredients safely. Cutting safely with a vegetable kn Following a baking recipe, includi preparation of ingredients. Cooking safely, following basic hy	Creating simple design criteria tha basic functionality and appeal to i users or target audiences. Generating ideas Taking part in structured idea-gen sessions. Coming up with more ideas and c the feasibility of their ideas in the Beginning to understand how me work. Using a series of pivots to create Combining levers to create linkag Ordering the main stages of making int Selecting materials Selecting materials, components or ing wider choice but within a limited design seasonal ingredients from May and Jun Selecting materials, components or ing on their form as well as their functional Explaining their choices with regard to f form. Selecting equipment Selecting equipment required for a serie based on the plan. Explain why each pi for each stage. Tool safety Suggesting simple safety rules based o understanding of tool dangers. Participating in discussions about class procedures. Following detailed safety instructions. Tool use Marking and measuring: Using a ruler a measure and mark straight lines.	

DT Firecrest YEAR4 & 5UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 Key Skills	Design Creating more complex design criteria that require considering detailed user needs, environmental impact, materials and cost. Developing more independence in generating ideas. Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. Beginning to select methods to communicate their ideas, justifying their choices. (eg. prototypes, cross-sectional, exploded diagrams, CAD etc). Make Assessing risks associated with different tools and equipment. Understanding and explaining the importance of each safety rule. Consistently apply safety instructions. Using a ruler to accurately measure and draw lines and marks. Select appropriate scissors to handle delicate cutting tasks and challenging materials. Cutting patterns and drawings accurately. Choosing PVA glue over hot glue for safety when joining materials in less intensive projects. Balancing aesthetics and functionality when creating parts of a design. Using nets to create 3D objects. Considering when best to apply finishing effects. Evaluate Reflecting on the usability, aesthetics, innovation and sustainability of	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.	Design Identifying more complex problem statements that consider multiple factors and constraints with guidance. Developing more independence in generating ideas. Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. Using 3D CAD software to communicate their ideas. Using a series of prototypes to refine and improve their designs. Make Producing lists of equipment, materials and tools that they need for a task. Selecting materials, components or ingredients based on research or user needs. Assessing risks associated with different tools and equipment. Understanding and explaining the importance of each safety rule. Consistently apply safety instructions. Using a ruler to accurately measure and draw lines and marks. In small groups, cutting harder wood with a saw. Cutting in a back-and-forth sawing motion where appropriate. Balancing aesthetics and functionality when creating parts of a design. Considering when best to apply finishing effects. Evaluate Reflecting on the usability, aesthetics, innovation and sustainability of products and	Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken. Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working to a given timescale. Working safely and hygienically with independence. Evaluating a recipe, considering: taste, smell, texture and origin of the food group. Taste testing and scoring final products. Suggesting and writing up points of improvements in productions. Evaluating health and safety in production to minimise cross contamination.	Design Noticing wider-reaching problems or needs in the community. Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. Make Producing lists of equipment, materials and tools that they need for a task. Selecting materials, components or ingredients based on research or user needs. Explaining their choices, referring to their research. Considering which equipment will work well together. Choosing from the known range of equipment available to them with little guidance. Assessing risks associated with different tools and equipment. Understanding and explaining the importance of each safety rule. Consistently apply safety instructions. Cutting jelutong or other harder wood with a coping saw or a tenon saw in small groups. Cutting in a back-and-forth sawing motion where appropriate. In supervised groups, using hot glue guns safely. Recognising that hot glue is useful for joining	

DT Firecrest YEAR4 & 5UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 4 Key Knowledge	To know that smaller stitches with simil to the fabric can hide the stitching. To know that thread of a different colou will make the stitch more decorative. Key knowledge by unit To know that appliqué is a way of menc decorating a textile by applying smaller to larger pieces. To know that when two edges of fabric joined together it is called a seam. To know that it is important to leave spa fabric for the seam. To know that some products are turnec sewing so the stitching is hidden. To know that different fastening types a different purposes. To know that a fastening is something t pieces of material together. • Identifying needs and problems • To know that a problem or need is somet designer can help to solve. • Developing for a user • To know that a target audience is a group might like the idea.	To know that an electr a group of parts (components) tha together to transport electricity ar circuit. To know some commo an electric product (e.g. switch, b dials, buttons, etc). Key knowledge by unit To know that a battery contains st electricity that can be used to pov To know that an electrical circuit r complete for electricity to flow. To know that a switch can be use and break an electrical circuit.	To know how a range of structures are built. To know a shell structure is a hollow shape with a thin outer layer. To know that 3D shapes can form structures. To know that structures can be strengthened by manipulating materials and shapes. Key knowledge by unit To stiffen structures by layering. To strengthen structures by layering materials (lamination). To strengthen structures by ribbing. Generating ideas To know that thinking together can help generate ideas. To know that not everything can be made in the classroom. Communicating ideas To know that CAD is computer-aided design. To know that CAD can be used to better communicate ideas. o know that ordering the steps of a build can make it easier. Selecting materials To know that form is the look and shape of something. To know that function is what something does and how it works. Selecting equipment To know that different pieces of equipment will be used at different stages in a plan. Tool safety To know that different tools and equipment have different dangers. Tool use	Evaluating existing products To know that some products are r successful than other because of function. To know that designers and inven products. Evaluating own ideas and product To know that choices of materials equipment can affect the final pro To know that feedback is ideas ar suggestions from other people tha improve their work. Giving and receiving feedback To know that the better the sugge better the feedback. To know that they can choose to or not. To know that not all fru vegetables can be grown in the U To know that climate a growth. To know that vegetabl grow in certain seasons. To know that cooking are known as a 'recipe'. To know that importec which has been brought into the c To know that similar c and vegetables often have similar benefits. Key knowledge by unit To know that the appearance of fo important as taste. To know which foods are grown ir specified season. To know which foods can be cut a using equipment. To know that the amount of an ing recipe is known as the 'quantity.' To know that safety and hygiene a when cooking. To know the following cooking tec sieving, measuring, stirring, cuttin shaping.	To understand that a mechanical system can allow us to move something more easily. To know that mechanical systems have more than one mechanism that moves to make them work. To know that mechanical systems are often hidden in products to make them look more appealing. Key knowledge by unit To know that pushing air can be used to move a mechanism. To know that linkages can be used to create more movement in a mechanical system. To know that a combination of mechanisms can improve a product. To know that by using a mechanical system, they can make the car go further. To know that either the wheels move around the axle or with the axle and the advantages and disadvantages of each.	

DT Firecrest YEAR4 & 5UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 Key Knowledge	Design: To know: Different materials have different costs. Original and innovative ideas are different from what has been made before. Drawings and diagrams can be communicated in 3D. Improving on prototypes can help to improve the final design. Make To know: Materials and equipment lists help to plan better. Aesthetics are the way something looks. Research can help decide which materials are best for both aesthetics and functional properties. Risks are things that might go wrong. Different measuring tools can be useful depending on what is being measured. The shape of an object can affect both its aesthetics and function. Aesthetics is how something looks. Nets can be folded to create 3D shapes. Texture can provide functional properties as well as aesthetic. Evaluate To know: Sustainability means thinking about the materials that were used to make a product and how the product was made. Looking at other designers' work can help inform designs. Their final product can still be improved by using different materials or techniques. Evaluating their designs in detail will help them understand its successful and less successful parts. Explaining how they used feedback	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'.	Design To know: Constraints are limits or conditions when making a product. Environmental impact is how the product and making the product might affect the environment. Original and innovative ideas are different from what has been made before. Drawings and diagrams can be communicated in 3D. Annotations are detailed labels and comments on diagrams. Improving on prototypes can help to improve the final design. Make To know: Materials and equipment lists help with planning. Risks are things that might go wrong. The shape of an object can affect both its aesthetics and function. Aesthetics is how something looks. The finish can make a product suitable to be used outside. Evaluate To know: Sustainability means thinking about the materials that were used to make a product and how the product was made. Their final product can still be improved by using different materials or techniques. Evaluating their designs in detail will help them understand its successful and less successful	To know: That 'flavour' is how a food or drink tastes. That many countries have 'national dishes' which are recipes associated with that country. That 'processed food' means food that has been put through multiple changes in a factory. That it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. What happens to a certain food before it appears on the supermarket shelf (farm to fork).	Which mechanisms ar together to make a mechanical sy That there are differen movement. That mechanisms can type of movement to another.	

DT Firecrest YEAR4 & 5UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Key Vocabulary	innovative pattern piece seam allowance	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	aesthetic alternative constraint innovate reinforce triangulation	balance bitter bridge method complement cookbook cross-contamination enhance equipment farm to fork flavours ingredients method pairing preparation recipe research salty sour storyboard sweet umami	accurate automata axle bench hook cam cam profile component cross-sectional diagra diagram dowel evaluate exploded diagram follower form frame function housing mechanism storefront visual	

Owls

DT Owls YEAR 5 & 6 UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Area of Learning	**Textiles: Bags**	**Electrical systems: Steady hand game**	**Structures: Playground pioneers**	**Cooking and Nutrition: Come Dine with Me**	**Mechanical Systems: Automata toys**	**★ As overflow time to complete units where school events takeove provide more time for to complete projects**

DT Owls YEAR 5 & 6 UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Unit Outcomes	Pupils who are secure will be able to: Explore and compare real textile products, thinking about how they look, how they are used and how they affect the environment. Develop and test design ideas by creating pattern pieces and making prototypes to explore how well they work. Use labelled drawings and diagrams to show clear design ideas, including how pattern pieces will fit together. Use fabrics and materials suitable for the product, thinking about how they look and how well they work. Make 3D textile shapes by carefully cutting, folding and joining materials to match the design. Join fabrics accurately using	Pupils who are secure will be able to: Explain simply what is meant by 'form' (the shape of a product) and 'function' (how a product works). State what they like or dislike about an existing children's toy and why. Learn about skills developed through play and apply this knowledge in a survey of one or more children's toys. Identify the components of a steady hand game. Design a steady hand game of their own according to their design criteria, using four different perspective drawings. Create a secure base for their game, with neat edges, that relates to their design. Make and test a functioning circuit and assemble it within a case.	Pupils who are secure will be able to: Explain the term constraints and why some are more important than others. Use sketches with labels to communicate ideas. Use 3D CAD software to communicate ideas. Modify a design to make it stronger and more stable using knowledge of triangulation and reinforcing. Select appropriate materials and tools for cutting and joining. Make a plan and equipment list for a project. Reinforce and stabilise a prototype of a structure. Apply a quality finish in a neat way and explain why the finish is important. Critically evaluate the success of a structure within constraints and suggest alternative, more sustainable, materials. Explain design decisions.	Pupils who are secure will be able to: Find a suitable recipe for their course. Record the relevant ingredients and equipment needed. Follow a recipe, including using the correct quantities of each ingredient. Write a recipe, explaining the process taken. Explain where certain key foods come from before they appear on the supermarket shelf.	Mark, saw and cut out components and supports of their varying degrees of accuracy to th measurements. Follow health and safe taking care with the equipment. Attempt a partial asse toys using an exploded diagram f teacher's demonstration. Develop a design idea descriptive notes. Explore different cam choose three for their follower top explanation of their choices. Create neat, decorate toppers with some accuracy. Measure and cut pane some inaccuracies to conceal the workings of the automata. Decorate and finish th meet the design criteria and brief. Evaluate their finished making descriptive and reflective function and form.	

DT Owls YEAR 5 & 6 UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 & 6 Key Skills	Design Creating more complex design criteria that require considering detailed user needs, environmental impact, materials and cost. Developing more independence in generating ideas. Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. Beginning to select methods to communicate their ideas, justifying their choices. (eg. prototypes, cross-sectional, exploded diagrams, CAD etc). Make Assessing risks associated with different tools and equipment. Understanding and explaining the importance of each safety rule. Consistently apply safety instructions. Using a ruler to accurately measure and draw lines and marks. Select appropriate scissors to handle delicate cutting tasks and challenging materials. Cutting patterns and drawings accurately. Choosing PVA glue over hot glue for safety when joining materials in less intensive projects. Balancing aesthetics and functionality when creating parts of a design. Using nets to create 3D objects. Considering when best to apply finishing effects. Evaluate Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design	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.	Design Identifying more complex problem statements that consider multiple factors and constraints with guidance. Developing more independence in generating ideas. Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. Using 3D CAD software to communicate their ideas. Using a series of prototypes to refine and improve their designs. Make Producing lists of equipment, materials and tools that they need for a task. Selecting materials, components or ingredients based on research or user needs. Assessing risks associated with different tools and equipment. Understanding and explaining the importance of each safety rule. Consistently apply safety instructions. Using a ruler to accurately measure and draw lines and marks. In small groups, cutting harder wood with a saw. Cutting in a back-and-forth sawing motion where appropriate. Balancing aesthetics and functionality when creating parts of a design. Considering when best to apply finishing effects. Evaluate Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices	Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken. Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working to a given timescale. Working safely and hygienically with independence. Evaluating a recipe, considering: taste, smell, texture and origin of the food group. Taste testing and scoring final products. Suggesting and writing up points of improvements in productions. Evaluating health and safety in production to minimise cross contamination.	Design Noticing wider-reaching problems or needs in the community. Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. Make Producing lists of equipment, materials and tools that they need for a task. Selecting materials, components or ingredients based on research or user needs. Explaining their choices, referring to their research. Considering which equipment will work well together. Choosing from the known range of equipment available to them with little guidance. Assessing risks associated with different tools and equipment. Understanding and explaining the importance of each safety rule. Consistently apply safety instructions. Cutting jelutong or other harder wood with a coping saw or a tenon saw in small groups. Cutting in a back-and-forth sawing motion where appropriate. In supervised groups, using hot glue guns safely. Recognising that hot glue is useful for joining materials that need a strong	

DT Owls YEAR 5 & 6 UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 & 6 Key Knowledge	Design: To know: Different materials have different costs. Original and innovative ideas are different from what has been made before. Drawings and diagrams can be communicated in 3D. Improving on prototypes can help to improve the final design. Make To know: Materials and equipment lists help to plan better. Aesthetics are the way something looks. Research can help decide which materials are best for both aesthetics and functional properties. Risks are things that might go wrong. Different measuring tools can be useful depending on what is being measured. The shape of an object can affect both its aesthetics and function. Aesthetics is how something looks. Nets can be folded to create 3D shapes. Texture can provide functional properties as well as aesthetic. Evaluate To know: Sustainability means thinking about the materials that were used to make a product and how the product was made. Looking at other designers' work can help inform designs. Their final product can still be improved by using different materials or techniques. Evaluating their designs in detail will help them understand its successful and less successful parts. Explaining how they used feedback	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'.	Design To know: Constraints are limits or conditions when making a product. Environmental impact is how the product and making the product might affect the environment. Original and innovative ideas are different from what has been made before. Drawings and diagrams can be communicated in 3D. Annotations are detailed labels and comments on diagrams. Improving on prototypes can help to improve the final design. Make To know: Materials and equipment lists help with planning. Risks are things that might go wrong. The shape of an object can affect both its aesthetics and function. Aesthetics is how something looks. The finish can make a product suitable to be used outside. Evaluate To know: Sustainability means thinking about the materials that were used to make a product and how the product was made. Their final product can still be improved by using different materials or techniques. Evaluating their designs in detail will help them understand its successful and less successful	To know: That 'flavour' is how a food or drink tastes. That many countries have 'national dishes' which are recipes associated with that country. That 'processed food' means food that has been put through multiple changes in a factory. That it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. What happens to a certain food before it appears on the supermarket shelf (farm to fork).	Which mechanisms ar together to make a mechanical sy That there are differen movement. That mechanisms can type of movement to another.	

DT Owls YEAR 5 & 6 UNIITS	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 & 6 Key Vocabulary	innovative pattern piece seam allowance	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	aesthetic alternative constraint innovate reinforce triangulation	balance bitter bridge method complement cookbook cross-contamination enhance equipment farm to fork flavours ingredients method pairing preparation recipe research salty sour storyboard sweet umami	accurate automata axle bench hook cam cam profile component cross-sectional diagra diagram dowel evaluate exploded diagram follower form frame function housing mechanism storefront visual	