Year 3			
DT: Electric poster circuit?	Big question: **How can we design and make an electric poster that lights up using a simple**		
Prior learning: • N/A **Future learning:** • Year 4 – Torches • Year 5 – Doodlers • Year 6 – Steady hand game	**Knowledge:** • To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. • To understand common features of an electric product (switch, battery or plug, dials, buttons, etc.) • To list examples of common electric products (kettle, remote control, etc.) • To understand that an electric product uses an electrical system to work (function). • To know the name and appearance of a bulb, battery,	**Skills:** • Carrying out research based on a given topic (for example, The Romans) to develop a range of initial ideas. • Generating a final design for the electric poster with consideration for the client's needs and design criteria. • Planning the positioning of the bulb (circuit component) and its purpose. • Mounting the poster onto corrugated card to improve its strength and withstand the weight of the circuit on the rear.	**Vocabulary:** battery bulb circuit circuit component crocodile wire design design criteria develop electric product electrical system feedback

	battery holder and crocodile wire to build simple circuits.	• Measuring and marking materials out using a template or ruler. • Fitting an electrical component (bulb). • Learning ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge). • Learning to give and accept constructive criticism on their work and the work of others. • Testing the success of initial ideas against the design criteria and justifying opinions. • Revisiting the requirements of the client to review developing design ideas and check they fulfil their needs.	final design information design initial ideas peer-assessment public research self-assessment sketch
Critical Content Statements:		**Common Misconceptions Pupils May Have:**	

• An electrical system consists of components that work together to transport electricity. • Electric products use circuits to function. • A simple circuit includes a bulb, battery, battery holder, and wires. • Positioning components correctly ensures the circuit works. • Mounting the poster on corrugated card adds strength and supports the circuit. • Design criteria guide decisions to meet client needs. • Testing the circuit by adding a battery confirms functionality. • Evaluating the final product helps improve future designs.	• Thinking an electrical system is just one part (e.g., a battery). • Believing the bulb will light without a complete circuit. • Assuming wires can touch anywhere without affecting the circuit. • Thinking the poster doesn't need a strong backing for the circuit. • Believing decoration affects how the circuit works. • Assuming testing is unnecessary once the circuit is assembled.

Year 3			
DT: Mechanical Systems – Pneumatic toys Big question: How can we use air to power a moving part in a toy design?			
Prior learning: • Year 2 – Mechanisms – Moving monsters	**Knowledge:** • How mechanisms work. • A mechanical system can allow us to move something more easily.	**Skills:** **Design** • Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences.	**Vocabulary:** diagram evaluate feedback

• Year 2 – Mechanisms – Fairground wheel **Future learning:** • Year 4 – Slingshot car • Year 5 – Pop up book • Year 6 – Automata toys	• Mechanical systems can have more than one mechanism that moves to make them work. • Mechanical systems are often hidden in products to make them look more appealing. • Pneumatic systems can be found in everyday objects. • Pushing air can be used to move a mechanism. • Pivots can be used to create more movement in a mechanical system. • A combination of mechanisms can improve a product.	• Taking part in structured idea-generation sessions. • 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. • Developing designs by adding details and justifications about materials, tools and methods. • Beginning to recognise the benefit of a range of diagram types of prototypes to communicate ideas. • Adding extra information on drawings or diagrams to help the user understand a design or idea.	housing linkage mechanical system mechanism pivot pneumatic system thumbnail sketch

		• Using thumbnail sketches that are less detailed, quick sketches. • Identifying cross-sectional diagrams that show the inside of a product and exploded diagrams that show how the parts of a product fit together. **Make** • Selecting equipment required for a series of tasks based on the plan. Explain why each piece is suitable for each stage. • Suggesting simple safety rules based on their understanding of tool dangers. • Participating in discussions about classroom safety procedures. • Cutting out more complex shapes accurately.	

		• Choosing shapes to suit the function of a product. • Painting or colouring precisely to improve the finish. • Making facades from a range of materials. • Creating different textural effects with a variety of materials. **Evaluate** • Analysing why specific products, designers or inventors are successful. • Evaluating their designs by comparing them against design criteria and considering feedback from peers to suggest improvements.	

		• Evaluating how effective their chosen materials and tools were in fulfilling the design brief. • Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements.	
Critical Content Statements: • A mechanism is a system of parts working together to create movement. • Pneumatic systems use air pressure to move parts. • Everyday objects often use pneumatic systems (e.g., pumps, inflatables). • Combining mechanisms can improve functionality. • Diagrams (cross-sectional, exploded) help explain design ideas clearly. • Design criteria guide decisions about function and appearance.		**Common Misconceptions Pupils May Have:** • Thinking a toy can only have one mechanism. • Believing air pressure alone will work without a sealed system. • Assuming pivots are unnecessary for movement. • Thinking decoration improves functionality. • Believing testing is not needed once the toy is built. • Assuming any material will work for pneumatic housing.	

• Secure housing is essential for pneumatic systems to work effectively. • Evaluating designs ensures they meet the design brief and user needs.	

Year 3 DT: Eating Seasonally			
Topic title: Food Glorious Food			
Enquiry question: Where does our food come from?			
Prior learning: • Year 2 – Cooking and nutrition – Balanced diet **Future learning:** • Year 4 – Cooking and nutrition – Adapt a recipe • Year 5 – Develop a recipe • Year 6 – Come dine with me	**Knowledge:** • 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'.	**Skills:** • Design a recipe for a savoury tart • Following the instructions within a recipe. • Tasting seasonal ingredients. • Selecting seasonal ingredients. • Peeling ingredients safely. • Cutting safely with a vegetable knife. • Establishing and using design criteria to help test and review dishes.	**Vocabulary:** appearance arid climate complementary country cut design evaluate

	• To know that imported food is food which has been brought into the country. • To know that exported food is food which has been sent to another country.. • To know that eating seasonal foods can have a positive impact on the environment. • To know that similar coloured fruits and vegetables often have similar nutritional benefits. • To know that the appearance of food is as important as taste.	• Describing the benefits of seasonal fruits and vegetables and the impact on the environment. • Suggesting points for improvement when making a seasonal tart	export fruit grate import ingredients Mediterranean mock-up mountain peel polar seasonal seasons snip taste temperate texture tropical vegetable

			weather
Critical Content Statements: • Explain that fruits and vegetables grow in different countries based on their climates. • Understand that seasonal fruits and vegetables grow in a given season. • Understand that eating seasonal fruit and vegetables positively affects the environment. • Design a tart recipe using seasonal ingredients.		**Common Misconceptions Pupils May Have:** • Each fruit provides the same nutritional benefits • Judging appearance over taste	

Year 3			
DT: Cushions	Big question: Where does our food come from, and why should we eat seasonal produce?		
Prior learning:	**Knowledge:** • Appliqué is a way of mending or decorating a textile by	**Skills:**	**Vocabulary:**

• Year 1 – Textiles – Puppets • Year 2 – Textiles – Pouches **Future learning:** • Year 4 – Textiles – Fastenings • Year 5 – Textiles – Stuffed toys • Year 6 – Textiles – Waistcoats	applying smaller pieces of fabric. • When two edges of fabric have been joined together, it is called a seam. • It is important to leave space on the fabric for the seam. • Some products are turned inside out after sewing so the stitching is hidden.	• Designing and making a template from an existing cushion and applying individual design criteria. • Following design criteria to create a cushion. • 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.	accurate appliqué cross-stitch cushion design embellish fabric patch running stitch seam stuffing template thread

		• Completing design ideas with stuffing and sewing the edges. • Evaluating an end product and thinking of other ways to create similar items.	
Critical Content Statements: • Fruits and vegetables grow in different countries depending on climate. • Seasonal fruits and vegetables grow at specific times of the year. • Eating seasonal produce reduces environmental impact. • Imported and exported foods travel long distances, affecting sustainability. • Recipes provide clear instructions for cooking. • Seasonal ingredients can influence taste, appearance, and nutrition. • Design criteria help evaluate the success of a dish. • Appearance and taste are both important in food presentation.		**Common Misconceptions Pupils May Have:** • Thinking all fruits provide the same nutritional benefits. • Believing appearance is more important than taste. • Assuming all fruits and vegetables can grow in the UK. • Thinking imported food is always better than local produce. • Believing seasonal eating has no environmental benefits. • Assuming recipes are optional for cooking successfully.	

Year 3			
DT – Digital Worlds – Wearable Technology Big question: How can we design wearable technology that uses coding to make it interactive?			
Prior learning: • N/A **Future learning:** • Digital Worlds – Mindful moments timer – Year 4	**Knowledge:** • To understand that, in programming, a 'loop' is code that repeats something again and again until stopped. • To know that a micro:bit is a pocket-sized, codeable computer. • To know that a simulator is able to replicate the functions of an existing piece of technology.	**Skills:** • Problem solving by suggesting potential features on a micro:bit and justifying my ideas. • Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge. • Developing design ideas through annotated sketches to create a product concept. • Developing design criteria to respond to a design brief. • Following a list of design requirements.	**Vocabulary:** electronic electronic products fastening feature feedback form function initiate layers monitor

	• To know what the ‘Digital revolution’ is and features of some of the products that have evolved as a result. • To understand what is meant by ‘point of sale display.’ • To know that CAD stands for ‘Computer-aided design’. • To know what a focus group is by taking part in one. •	• Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm. • Analysing and evaluating an existing product. • Using feedback from peers to improve a design.	net opinion point of sale product product design program sense simulator smart technology test user
Critical Content Statements: • A loop in programming repeats actions until stopped. • A micro:bit is a programmable device used in wearable technology. • Simulators allow testing of code without physical hardware.		**Common Misconceptions Pupils May Have:** • Thinking a loop means something other than repeated code. • Believing CAD stands for something unrelated to design. • Assuming wearable technology is only about appearance, not function.	

• CAD software helps create precise designs for products and displays. • Point of sale displays attract attention and promote products. • Writing simple programs can control LEDs and sensors on a micro:bit. • Design criteria ensure the product meets user needs and functions correctly. • Evaluating designs through focus groups improves the final product.	• Thinking programming is optional for interactive products. • Believing simulators are the same as real devices in all aspects. • Assuming feedback is not important for improving designs.