Year 3 and Year 4 – Design & Technology Big Questions and Target Memories

2026 – 2027



National Curriculum Coverage
Pupils should be taught:

Design
- **Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.**
- **Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.**

Make
- **Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.**
- **Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.**

Evaluate
- **Investigate and analyse a range of existing products.**
- **Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.**
- **Understand how key events and individuals in design and technology have helped shape the world.**

Technical knowledge
- **Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.**
- **Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).**
- **Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors).**
- **Apply their understanding of computing to program, monitor and control their products.**

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Title (Oak National Academy)		Pneumatics: Moving Toys		Textile Pattern Pieces: Hats and Caps		Simple Programming and Control: Data Loggers
Big Question		How can pneumatic mechanisms be used to design a moving toy?		How can patterns, fabrics and design help us create successful textile products?		How can we combine circuits, sensors and coding to create an interactive product?
Target Memories		I can analyse familiar objects that use air to make them work. I can use air to create movement in prototypes. I can explain how pneumatic systems work. I can develop a meaningful and authentic design brief. I can create a clear plan to make a moving animal. I can embed a working pneumatic system into a product. I can finish products effectively. I can evaluate my design against the agreed design criteria.		I can identify decisions made by a designer. I can generate ideas by carrying out research through interviews. I can identify pattern pieces in complex nets. I can investigate the properties of materials that would suit the purpose of my design. I can design fabric pattern pieces. I can create a protype from fabric using pattern pieces. I can share my work with my user. I can make changes to my work after user feedback.		I can produce sketches that contain detailed annotations. I can interact with the Tinkercad circuits workspace to create simple programs. I can identify and use inputs and outputs on a Micro:bit. I can create, simulate and download a simple Micro:bit program. I can describe Ada Lovelace's life and her contributions to modern day computing. I can make a data logger case to securely hold a micro:bit and electrical components. I can identify safety measures in electrical circuits and install components safely. I can test my data logger and understand the results.

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Unit Title (Oak National Academy)		Shell Structures: Packaging		Levers and Linkages: Interactive Books		2D Shapes and 3D Products: Stationary Storage
Big Question		How do designers create packaging that is both effective and environmentally responsible?		How can we use levers and linkages to make an interactive book?		How can we use fabrics, templates and decorative techniques to design a functional product?
Target Memories		I can compare a range of packaging designs. I can understand how packaging designs are structured. I can use different techniques to shape card. I can create a number of sketches to show a range of ideas. I can join card with accuracy. I can ensure my packaging is strong. I can ensure branding logos are clear on the final product. I can promote a product that I have branded.		I can make reverse motor linkages. I can make parallel and push-pull linkages. I can make bell crank and lazy-tong linkages. I can identify different linkages within existing products. I can undertake research to influence design specifications. I can plan and make a page for an interactive book. I can assemble components and make my book aesthetically pleasing. I can respond to user feedback and evaluate my design thinking.		I can explain how to thread a needle and sew a run of stitches. I can test and select different fabrics to meet the needs of the user. I can understand how different fasteners work. I can select fabrics for a purpose. I can plan and create fabric patterns. I can make accurate fabric pieces from patterns. I can join fabric templates. I can select finishing techniques to improve my textile product.