Year 5 and Year 6 – 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)		Cams: Automata		CAD Structures: Architecture		Combining Fabrics: Accessible Textiles
Big Question		How can we use cams and suitable materials to design and make an automaton?		How do architects use technology to design sustainable homes?		How do designers create products that are both useful and accessible?
Target Memories		I can identify how cams create movement. I can identify how cams work in an automata. I can explain the difference between soft and hard wood. I can draw cross-section diagrams. I can saw, join and drill wood. I can make an accurate box frame. I can integrate a cam mechanism into an automaton. I can test and adapt mechinisms.		I can use the architectural work of Dr Ken Yeang to create my own designs. I can navigate and use menus on the Tinkercad user interface. I can translate, rotate and scale 3D shapes in Tinkercad. I can create hollow compound 3D shapes in Tinkercad. I can make and manipulate objects to create a complex 3D design in Tinkercad. I can manipulate shapes in Tinkercad to meet a design specification. I can provide and respond to design critique. I can use Tinkercad to draw exploded diagrams.		I can define the needs of the user within a design specification. I can choose fabrics for function and aesthetics. I can create a design action plan. I can sew seams and a curved edge. I can shape and join fabric shapes accurately. I can fasten fabrics effectively. I can personalise a fabric product using stitching techniques and applique. I can write and impact statement.

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Unit Title (Oak National Academy)		Pulleys and Gears: Electric Vehicles		Systems and Control: Sensor Alarms		Products and People: Inspirational Design
Big Question		How can we use gears, pulleys and electrical systems to create a successful electric vehicle?		How can we use programming, sensors and a Micro:bit to improve a product?		How have designers and their products shaped the world around us?
Target Memories		I can describe Dorothee Pullinger's contributions to car engineering and discuss sustainable transport. I can create and understand movement with pulleys. I can make a switch for an electrical circuit. I can relate Harry Beck's work to circuit diagrams and draw my own. I can build an accurate vehicle chassis. I can add mechanical and electrical components to a vehicle. I can adapt a design to make it more effective. I can add a switch to a vehicle body.		I can create a model museum gallery. I can create model artefacts for a museum gallery prototype. I can make a push-to-make switch. I can name offboard components that can be added to a micro:bit. I can choose inputs and outputs for my micro:bit alarm system. I can programme a micro:bit alarm system and test faults in a circuit. I can safely secure electrical components into designs. I can prepare and host an exhibition of work.		I can innovate a product to make it more accessible. I can create a prototype accessible product. I can use inspiration to design a new product. I can adapt existing textile designs to create a new product. I can understand the work of designers, architects and engineers, and sketch 2D elevations of 3D objects. I can create an architectural prototype model using computer aided design. I can understand how injection moulding is used to form polymer products. I can choose and use communication techniques that are appropriate to showcase a product.