



Design Technology Curriculum - Coverage and Outcomes - Knowledge and Skills

Key Stage 2

Term	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Class						
POD	Unit: Workshop Safety, Flat-Pack Bird Box and Dice	Unit: Papier Mache Modelling Design and Make	Unit: Papier Mache Modelling, Fidget Squares and Cardboard Boomerangs	Unit: Spinners, Yo-Yo's and Sky Balls (Parachute Design)	Unit: Candle Holder / Pencil Block	Unit: Bug Hotel, Design Challenges and End-of-Year Review
	Focus: Wood / Making / Evaluating	Focus: Paper / Design / Making	Focus: Paper - Card - Pattern Design / Design / Making / Evaluating	Focus: Wood / Design / Making / Technical Knowledge	Focus: Material Properties / Design / Making / Evaluating	Focus: Wood, Bamboo / Design / Making / Evaluating
	Knowledge Outcomes: • I know that workshop rules help everyone work safely. • I know that wood can be measured, cut, joined and finished. • I know that products can be checked against their purpose and quality.	Knowledge Outcomes: • I know that models can be developed from a design idea. • I know that layers of paper and adhesive create a rigid form. • I know that shape, colour and finish affect appearance.	Knowledge Outcomes: • I know that paper and card have different working properties. • I know that pattern, shape and symmetry influence design. • I know that testing helps designers improve a product.	Knowledge Outcomes: • I know that movement is affected by size, balance, shape and force. • I know that mechanisms rely on accurately positioned components. • I know that air resistance affects how a parachute falls.	Knowledge Outcomes: • I know that material properties affect fitness for purpose. • I know that a freestanding product needs stability. • I know that finish affects appearance and safe use.	Knowledge Outcomes: • I know that a product should meet the needs of its intended user. • I know that wood and bamboo have useful properties for outdoor products. • I know that criteria and feedback support evaluation.

	Skills Outcomes: • I can follow workshop safety routines. • I can measure and mark out wood with support. • I can use appropriate tools to cut, join and finish components. • I can evaluate a finished product and identify an improvement.	Skills Outcomes: • I can generate and communicate a modelling idea. • I can build a form using suitable construction materials. • I can apply papier mache safely and evenly. • I can finish the model to reflect my design.	Skills Outcomes: • I can develop ideas using pattern and shape. • I can select paper or card for a particular purpose. • I can cut, fold, shape and join materials accurately. • I can test and refine a product.	Skills Outcomes: • I can design a product that moves. • I can measure, mark and assemble components with increasing accuracy. • I can test movement and record what happens. • I can modify a design to improve performance.	Skills Outcomes: • I can identify simple product requirements. • I can select and use suitable tools and materials. • I can make a stable product with an appropriate finish. • I can evaluate function, safety and appearance.	Skills Outcomes: • I can research the needs of insects and their habitat. • I can design and make a purposeful structure. • I can select and combine natural and manufactured materials. • I can review my progress and explain improvements.
Class 1	Unit: Workshop Safety and Structured Practical Tasks	Unit: Christmas Decoration	Unit: Pencil Holder / Mazes	Unit: Yo-Yo's and Book Ends	Unit: Hooks and Hangers	Unit: Jumping Jack and End-of-Year Review
	Focus: Design / Making / Evaluating	Focus: Resistant Materials / Design / Making / Evaluating	Focus: Resistant Materials / Design / Making / Technical Knowledge / Evaluating	Focus: Wood / Design / Making / Technical Knowledge / Evaluating	Focus: Resistant Materials / Design / Making / Evaluating	Focus: Design / Making / Technical Knowledge / Evaluating
	Knowledge Outcomes: • I know why workshop procedures and safe behaviour are important. • I know that a practical task has a purpose and a sequence. • I know that accuracy and finish affect quality.	Knowledge Outcomes: • I know that decorative products are designed for users and occasions. • I know that resistant materials can be shaped, joined and finished. • I know that colour, form and finish affect appearance.	Knowledge Outcomes: • I know that a pencil holder must be stable and suitable for its contents. • I know that maze layout affects usability and challenge. • I know that structures can be strengthened by shape and joining.	Knowledge Outcomes: • I know that balance and accurate alignment affect movement. • I know that book ends need strength, stability and an appropriate size. • I know that wood grain and joining methods affect manufacture.	Knowledge Outcomes: • I know that hooks and hangers must support a load safely. • I know that material and fixing choices affect strength. • I know that product dimensions should suit the user and location.	Knowledge Outcomes: • I know that levers, pivots and linkages create movement. • I know that accurate component placement affects performance. • I know that evaluation should refer to purpose and quality.

	Skills Outcomes: • I can follow safety instructions consistently. • I can plan the order of a short practical task. • I can select and use tools with support. • I can evaluate accuracy and identify a next step.	Skills Outcomes: • I can investigate existing decorations. • I can sketch and label a design idea. • I can make and finish a decoration safely. • I can compare the product with my design.	Skills Outcomes: • I can develop criteria for purpose and user. • I can measure, mark out, cut and join accurately. • I can test stability or usability. • I can use feedback to improve the product.	Skills Outcomes: • I can generate and communicate ideas for a user. • I can select suitable tools and processes. • I can manufacture components with increasing accuracy. • I can test function and refine the outcome.	Skills Outcomes: • I can investigate where and how a product will be used. • I can develop criteria for strength, size and safety. • I can make and securely join components. • I can load-test and evaluate the product.	Skills Outcomes: • I can model a simple linkage. • I can make and assemble moving parts safely. • I can test and adjust the movement. • I can explain the skills I have developed across the year.
Class 2	Unit: Model Cars	Unit: Packaging	Unit: Fabric Phone Case	Unit: Pneumatic Animals	Unit: House / Building Design	Unit: Torches
	Focus: Wood - Clay / Key Events and Individuals / Designing / Making / Evaluating	Focus: Existing Products / Paper - Card / Key Events / Designing / Making / Evaluating	Focus: Fabric / Designing / Making / Technical Knowledge / Evaluating	Focus: Card - Mechanisms / Designing / Making / Technical Knowledge	Focus: CAD / Key Events / Designing / Technical Knowledge	Focus: Paper - Card - Electronics / Designing / Making / Evaluating / Technical Knowledge
	Knowledge Outcomes: • I know that designers, engineers and manufacturers develop vehicles. • I know that wheels, axles, chassis and body shape affect function. • I know that materials have functional and aesthetic properties.	Knowledge Outcomes: • I know that packaging protects, contains, informs and promotes. • I know that nets, folds, tabs and joins create 3D packaging. • I know that sustainability affects packaging decisions.	Knowledge Outcomes: • I know that textile products are made from shaped and joined fabric. • I know that fabric properties, seams and fastenings affect quality. • I know that dimensions must allow for the product and seam.	Knowledge Outcomes: • I know that pneumatic systems use compressed air to create movement. • I know that a system has an input, process and output. • I know that pivots and linkages can control movement.	Knowledge Outcomes: • I know that architects respond to user needs, function and context. • I know that frames, shells, triangulation and bracing improve stability. • I know that CAD can develop and communicate ideas.	Knowledge Outcomes: • I know that an electrical system has an input, process and output. • I know the functions of a cell, conductor, switch and lamp or LED. • I know that casing design affects protection and usability.
	Skills Outcomes: • I can investigate existing vehicles. • I can design for a user and purpose. • I can manufacture and assemble a working model. • I can test movement and identify improvements.	Skills Outcomes: • I can analyse existing packaging. • I can develop criteria for a product and user. • I can create and refine a card net. • I can evaluate function, appearance and sustainability.	Skills Outcomes: • I can investigate cases and identify user needs. • I can make or adapt a pattern piece. • I can measure, cut, join and finish fabric. • I can test fit and protection and improve the case.	Skills Outcomes: • I can draw and label a pneumatic mechanism. • I can model and test components. • I can construct a product with controlled movement. • I can diagnose and refine a mechanism.	Skills Outcomes: • I can research a user and develop criteria. • I can communicate ideas using sketches and CAD. • I can create a stable, strengthened model. • I can explain how the design meets its purpose.	Skills Outcomes: • I can investigate existing torches. • I can create and test a simple circuit safely. • I can design and make a suitable housing. • I can evaluate the torch against user needs.

Key Stage 3

Term	Term 1	Term 2	Term 3
Class			
Class 3	Unit: Pop-Up Books	Unit: Desktop Organiser	Unit: Steady Hand Game
	Focus: Paper - Card - Mechanisms / Key Events / Evaluation / Making / Technical Knowledge	Focus: Cardboard - Wood / Designing / Making / Evaluating	Focus: Resistant Materials / Electronics / Designing / Making / Technical Knowledge / Evaluating
	Knowledge Outcomes: • I understand how sliders, levers, linkages and folds create movement. • I know that audience, purpose and sequence influence book design. • I know that prototypes reveal problems before final manufacture.	Knowledge Outcomes: • I understand how dimensions, storage needs and material properties guide design. • I know how structures and joints affect strength and stability. • I know that precision and finish influence quality.	Knowledge Outcomes: • I understand how an electronic system combines inputs, processes and outputs. • I know how conductors, insulation and circuit continuity affect operation. • I know that structure, challenge and safety must be balanced.
	Skills Outcomes: • I can research users and write a focused specification. • I can communicate ideas using annotated sketches and models. • I can manufacture accurate paper mechanisms. • I can test with users and refine movement and presentation.	Skills Outcomes: • I can analyse existing organisers. • I can develop a specification and 3D proposal. • I can select tools and manufacture components accurately. • I can evaluate fitness for purpose and modify the organiser.	Skills Outcomes: • I can model and test an electronic circuit. • I can plan an ordered manufacturing sequence. • I can construct a precise frame and integrate components safely. • I can test with users and refine reliability and challenge.
Class 4	Unit: Workshop Safety, Product Analysis and Structured Tasks	Unit: Noisy Things, Litter Picker and Structured Tasks	Unit: Key Ring Design and Make / Pottery Project
	Focus: Skills Focus / Evaluating / Making / Key Events and Individuals	Focus: Range of Materials / Technical Knowledge / Evaluating	Focus: Metal - Clay / Designing / Making / Evaluating
	Knowledge Outcomes: • I understand how risk assessment supports safe workshop practice. • I know that product analysis considers purpose, user, materials, manufacture and quality. • I know that designers and manufacturers influence product development.	Knowledge Outcomes: • I understand how material properties affect product performance. • I know how mechanisms can change movement and force. • I know that user-centred design considers reach, grip, comfort and accessibility.	Knowledge Outcomes: • I know that metals and clay have different working properties. • I understand how forming, joining and finishing processes affect quality. • I know that small products require accurate dimensions and careful manufacture.

	Skills Outcomes: • I can identify hazards and apply control measures. • I can analyse an existing product using appropriate terminology. • I can select and use tools and equipment accurately. • I can evaluate practical outcomes and identify improvements.	Skills Outcomes: • I can compare materials for a specific purpose. • I can model and test alternative mechanisms. • I can manufacture and assemble a functional product. • I can use testing to refine effectiveness and ergonomics.	Skills Outcomes: • I can develop accurately dimensioned ideas. • I can select processes suited to metal or clay. • I can manufacture and finish products with increasing independence. • I can evaluate technical quality and justify changes.
Class 5	Unit: Workshop Safety, Product Disassembly and Catapult	Unit: Own Design Project	Unit: Plastics / Vacuum Forming / Packaging and Museum of Making
	Focus: Wood / Skills Focus / Designing / Making / Evaluating	Focus: Range of Materials / Design / Making / Evaluating / Technical Knowledge	Focus: Plastics - Wood / Key Events and Individuals / Designing / Making / Evaluating / Technical Knowledge
	Knowledge Outcomes: • I understand how disassembly reveals construction, materials and function. • I know how levers, pivots, forces and structure affect a catapult. • I know that tools and processes must be selected for material and purpose.	Knowledge Outcomes: • I understand that complex design problems require research and prioritised criteria. • I know how cost, quality, safety and environmental requirements shape a specification. • I know that modelling, testing and iteration validate ideas.	Knowledge Outcomes: • I know how thermoplastics and thermosetting plastics differ. • I understand how heat, moulds and vacuum forming shape sheet polymer. • I know that product development should consider life cycle and environmental impact. • I know that designers, engineers and manufacturers influence products.
	Skills Outcomes: • I can carry out and record product analysis. • I can develop criteria for function, safety and quality. • I can manufacture a working mechanism precisely. • I can test performance and modify the product.	Skills Outcomes: • I can identify a problem for a defined user. • I can combine research, sketches, models or CAD. • I can plan and use specialist materials, tools and processes. • I can manufacture, test and refine a product independently. • I can evaluate against the specification.	Skills Outcomes: • I can relate manufacturing processes to material properties. • I can design an accurate former and packaging solution. • I can use vacuum forming equipment safely with supervision. • I can evaluate quality, efficiency and environmental impact. • I can apply learning from a museum or industry context.