



DESIGN & TECHNOLOGY CURRICULUM

Key Stage 2 Progression

Knowledge | Skills | Vocabulary | Years 3 to 6

Purpose of this document

This document sets out how Design and Technology knowledge, practical skills, technical vocabulary and independent design behaviours develop from Year 3 to Year 6. It follows Park Road Academy's selected units and supports secure transition into Key Stage 3.

Key Stage 2 National Curriculum position

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Pupils use research and develop design criteria for innovative, functional and appealing products; generate, model and communicate ideas; select and use a wider range of tools, materials and components accurately; investigate and analyse products; evaluate against their own criteria; apply technical knowledge to structures, mechanical and electrical systems; and understand seasonality, food preparation and healthy nutrition.

Progression principles

BUILD FROM KS1	RESEARCH & SPECIFY	ACCURATE MANUFACTURE	ITERATE & JUSTIFY
Earlier knowledge becomes more precise, technical, evidence-based and independent.	Pupils identify users, analyse products and develop increasingly measurable criteria.	Pupils select tools, materials, ingredients and components for properties and function.	Testing, feedback, fault diagnosis and improvement are embedded throughout each project.

Curriculum strands

Designing	Making	Evaluating	Structures, Mechanical & Electrical Systems	Textiles	Cooking & Nutrition
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Vocabulary is indicative rather than exhaustive. Teachers should revisit prior terms and expect pupils to explain increasingly complex design, technical and evaluative decisions.



Year 3 Design & Technology Curriculum Map

Park Road units, core learning and progression emphasis

Year 3

Year 3 progression

Year 3 begins KS2 by applying more accurate measuring, templates, sewing, food preparation and net construction.

Year 3

Term	Curriculum unit	Core knowledge and practical learning	Progression emphasis	Curriculum strands
Autumn	Cooking and nutrition: Eating seasonally	Understand seasonality, climate and food origin; research seasonal produce; follow a recipe; measure and prepare safely; make and evaluate a seasonal dish.	Extends KS1 food groups into seasonality, sustainability, accurate measuring and a more complex preparation sequence.	Food; Nutrition; Sustainability; Evaluate
Spring	Textiles: Cushions	Investigate cushions and fabrics; create a template; cut accurately; sew seams and decoration; add stuffing and fastening; evaluate function and finish.	Develops templates and running stitch into seam allowance, secure seams, decorative techniques and a functional soft product.	Textiles; Design; Make; Evaluate
Summer	Structures: Constructing a castle	Investigate castle features; understand shell structures and nets; design for a purpose; score, cut and join accurately; strengthen and evaluate a model castle.	Moves from simple frames to nets, shell structures, reinforcement and historically informed function.	Structures; Technical knowledge; Design; Evaluate



Year 4 Design & Technology Curriculum Map

Park Road units, core learning and progression emphasis

Year 4

Year 4 progression

Year 4 deepens structural, mechanical and food-development knowledge and expects more systematic comparison and justification.

Year 4

Term	Curriculum unit	Core knowledge and practical learning	Progression emphasis	Curriculum strands
Autumn	Structure: Pavilions	Explore framed structures; develop criteria; build and reinforce a frame using triangulation and bracing; apply cladding; test stability and appearance.	Develops shell structures into framed construction, reinforced joints, cladding and spatial design for a user.	Structures; Design; Make; Evaluate
Spring	Cooking and nutrition: Adapting a recipe	Analyse a recipe; identify a user need; change ingredient quantities or flavours; weigh accurately; carry out sensory evaluation; compare and justify an adaptation.	Introduces controlled variables, repeatable testing and evidence-based recipe modification.	Food; Nutrition; Iteration; Evaluate
Summer	Mechanical systems: Gears and pulleys	Investigate machines; understand gear and pulley function; create working systems; compare gear sizes and pulley arrangements; apply learning to a purposeful product.	Extends wheel-and-axle knowledge into force, movement, direction, speed and mechanical advantage.	Mechanisms; Technical knowledge; Test; Design



Year 5 Design & Technology Curriculum Map

Park Road units, core learning and progression emphasis

Year 5

Year 5 progression

Year 5 combines complex technical systems, market research and recipe development with sustained testing and fault diagnosis.

Year 5

Term	Curriculum unit	Core knowledge and practical learning	Progression emphasis	Curriculum strands
Autumn	Electrical systems: Doodlers	Investigate motorised products; build series circuits; explore motors and off-centre weights; write criteria; construct and troubleshoot a functional Doodler.	Introduces motors, vibration, circuit layout, systematic fault diagnosis and iterative product development.	Electrical systems; Make; Troubleshoot; Evaluate
Spring	Mechanical systems: Gears and pulleys	Investigate gear trains and pulley systems; research users and competitors; write a design brief; design and model a functional system; test effects of component changes.	Deepens mechanical understanding through market research, problem statements, precise systems and evidence-led iteration.	Mechanisms; Research; Technical knowledge; Evaluate
Summer	Cooking and nutrition: Developing a recipe	Explore farm-to-fork and nutritional value; adapt a traditional dish; prepare ingredients safely; record a method; test, refine and present a developed recipe.	Moves from single-variable adaptation to purposeful nutritional development and an iterative recipe process.	Food; Nutrition; Development; Evaluate



Year 6 Design & Technology Curriculum Map

Park Road units, core learning and progression emphasis

Year 6

Year 6 progression

Year 6 expects increasingly independent specifications, accurate manufacture, quality control and presentation for real users.

Year 6

Term	Curriculum unit	Core knowledge and practical learning	Progression emphasis	Curriculum strands
Autumn	Textiles: Waistcoats	Research garments and users; adapt pattern pieces; account for seam allowance; cut, pin, tack and sew accurately; add fastening and decoration; test fit and finish.	Extends cushions into garment construction, fit, pattern adaptation and sustained textile accuracy.	Textiles; Pattern; Make; Quality control
Spring	Electrical systems: Steady hand game	Analyse interactive games; develop a specification; draw a circuit; construct a conductive course and loop; test continuity and sensitivity; improve reliability and user experience.	Applies complete-circuit knowledge to an interactive product with precise manufacture and quality testing.	Electrical systems; Design; Test; Evaluate
Summer	Cooking and nutrition: Come dine with me	Research guest needs; plan a menu, quantities and workflow; prepare and present a meal safely; coordinate roles; gather feedback and evaluate the dining experience.	Integrates nutrition, preparation, timing, presentation, hospitality and project management in a complex real-world outcome.	Food; Hospitality; Project management; Evaluate



KS2 Design & Technology Progression at a Glance

Concise progression from Year 3 to Year 6 and readiness for Key Stage 3

Progression focus

A concise overview of the key progression across designing, making, evaluating, technical systems, textiles, food and independent project work.

Area & vocabulary thread	Year 3	Year 4	Year 5	Year 6 / end of KS2
Designing / user, research, brief, criteria, specification, diagram	Researches user and context; creates annotated sketches, nets and templates; uses criteria.	Gathers user views; prototypes structures and mechanisms; plans adaptations and sequences.	Writes problem statements and design briefs; researches competitors; uses technical diagrams.	Writes measurable specifications; communicates with pattern pieces, circuit diagrams, menus and production plans.
Making / select, measure, cut, join, assemble, prepare, finish	Measures and cuts accurately; sews seams; constructs nets; prepares food safely.	Builds reinforced frames and mechanisms; weighs ingredients accurately; follows controlled processes.	Combines electrical, mechanical and food techniques; troubleshoots during manufacture.	Uses accurate garment, circuit and food processes; manages resources, timing and quality control.
Evaluating / test, evidence, feedback, refine, justify	Tests seams, structures and food; evaluates against brief and criteria; suggests improvements.	Uses prototypes, sensory trials and comparable results; explains trade-offs and modifications.	Diagnoses faults; measures performance; uses market and user feedback; records iteration.	Evaluates specification, safety, sustainability, user experience and presentation; justifies compromises.
Structures & mechanical systems / frame, net, brace, gear, pulley	Uses nets, tabs and reinforcement to construct a stable shell structure.	Uses triangulation, bracing, cladding, gears and pulleys to control strength and movement.	Builds and refines gear trains, pulley systems and motorised products using evidence.	Applies structural and system knowledge independently within complex product planning.
Electrical systems / circuit, motor, switch, conductor, buzzer	Revisits simple electrical products through wider science and making contexts.	Explains how components may support functional products and prepares for motorised systems.	Constructs and troubleshoots a motorised series circuit and tests effects of changes.	Designs and manufactures a reliable interactive circuit using

Area & vocabulary thread	Year 3	Year 4	Year 5	Year 6 / end of KS2
				conductive and insulating materials.
Textiles / template, seam, stitch, pattern piece, fit	Creates a functional cushion using templates, seam allowance, stitches and finishing.	Applies textile properties when choosing cladding or flexible components.	Uses textile prototypes and fastenings where relevant in product development.	Adapts pattern pieces and constructs a fitted waistcoat with accurate seams and finishing.
Cooking & nutrition / seasonal, adapt, nutrition, menu, hygiene	Explains seasonality and food origin; follows and evaluates a seasonal recipe.	Adapts a recipe using controlled variables and sensory evidence.	Develops a recipe to improve nutritional value and records iterative changes.	Plans and presents a coordinated meal, managing nutrition, hygiene, timing and guest experience.

Teaching note: KS2 progression is cumulative. Pupils should revisit prior technical knowledge, vocabulary and safe routines while working with increasingly precise specifications, complex systems, accurate manufacture, systematic testing and greater independence.



Using the KS2 Progression Document

Planning, teaching, assessment and transition

Planning from the progression

1 START WITH PRIOR LEARNING Identify earlier technical concepts, tools, components, ingredients and vocabulary required for the unit.	2 RESEARCH THE USER Use existing products, context and user needs to develop meaningful design criteria or specifications.	3 MODEL ACCURACY Demonstrate technical diagrams, tool use, safe manufacture, food hygiene and quality expectations.
4 BUILD ITERATION Include prototypes, trials, performance tests, feedback, fault diagnosis and purposeful refinement.	5 ASSESS KNOWLEDGE & PROCESS Notice what pupils understand, select, make, test, explain and improve, not only the final appearance.	6 ENABLE INDEPENDENCE Adapt access while preserving user-centred choices, technical problem-solving and justified decision-making.

What progression should look like in pupils' learning

KNOW MORE Recalls and connects more technical knowledge about materials, systems, structures, textiles and food.	DO MORE Uses a wider range of tools, ingredients and components with greater precision and safety.	CHOOSE MORE Selects methods and materials according to properties, function, user and specification.	CONNECT MORE Uses research, science, maths, computing and prior products to develop solutions.	IMPROVE MORE Tests, diagnoses, evaluates and refines using measurable evidence and feedback.
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Suggested evidence for subject leadership

PUPIL VOICE Can pupils explain prior learning, user research, technical choices, tests and refinements?	DESIGNS & PRODUCTS Do briefs, diagrams, prototypes, manufacture, testing and final products show increasing accuracy and independence?	TEACHING & INCLUSION Are technical concepts, vocabulary, safe practice and iterative decisions modelled, adapted and checked?	ASSESSMENT & TRANSITION Do judgements reflect designing, making, evaluating and technical knowledge, with clear readiness for KS3?
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End-of-KS2 readiness for Key Stage 3 Design and Technology

DESIGN Researches a target user and communicates a justified solution through a specification, annotated drawings, models or diagrams.	MAKE Selects and uses suitable tools, materials, ingredients and components accurately, safely and independently.	EVALUATE Tests performance and quality systematically, diagnoses faults and refines using criteria, evidence and feedback.
TECHNICAL SYSTEMS Explains and applies structures, mechanisms and electrical circuits to create reliable functional products.	TEXTILES Uses pattern pieces, seam allowance, accurate cutting, stitching and fastening to manufacture a fitted textile product.	COOKING & NUTRITION Plans, prepares and presents a balanced meal safely, considering ingredients, nutrition, timing and user needs.

This document should be read alongside the Design and Technology Long-Term Overview, Kapow Primary unit planning and knowledge organisers, risk assessments, food-safety guidance, assessment materials and the whole-school progression document.