

DESIGN TECHNOLOGY

The school follows Projects on a Page: A national scheme of work for Design and Technology at Key Stages 1 and 2

Year A	Term 1 Autumn	Term 2 Spring	Term 3 Summer
KS1	Mechanisms -slides and levers		Food-Preparing fruit and vegetables
LKS2	Food - Healthy and Varied		Mechanisms levers and linkages
UKS2	Structures- Frame structures	Electrical - crumbles	Mechanisms pulleys and gears
Year B	Term 1 Autumn	Term 2 Spring	Term 3 Summer
KS1	Mechanisms Wheels and axels	Free standing structures	Textiles- templates and joining
LKS2	Shell structures	Textiles 2D shapes to 3D products	Electrical Simple circuits and switches
UKS2	Textiles (Using CAD or Different fabrics?)		Food Celebrating culture and seasonality

YEAR A		
KEY STAGE 1		
Autumn Mechanisms -slides and levers	Technical knowledge and understanding <ul style="list-style-type: none"> • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the project 	Key vocabulary <ul style="list-style-type: none"> • slider, lever, pivot, slot, bridge/guide • card, masking tape, paper fastener, join • pull, push, up, down, straight, curve, forwards, backwards • design, make, evaluate, user, purpose, ideas, design criteria, product, function
Spring		
Summer Food- Preparing fruit and vegetables	Technical knowledge and understanding <ul style="list-style-type: none"> • Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Guide. • Know and use technical and sensory vocabulary relevant to the project. 	Key vocabulary <ul style="list-style-type: none"> • fruit and vegetable names, names of equipment and utensils • sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard • flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria
Lower Key Stage 2		
Autumn Food - Healthy and Varied	Technical knowledge and understanding <ul style="list-style-type: none"> • Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately. 	Key vocabulary <ul style="list-style-type: none"> • name of products, names of equipment, utensils, techniques and ingredients • texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury • hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet • planning, design criteria, purpose, user, annotated sketch, sensory evaluations
Spring		

Summer Mechanisms levers and linkages	Technical knowledge and understanding <ul style="list-style-type: none"> • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project. 	Key vocabulary <ul style="list-style-type: none"> • mechanism, lever, linkage, pivot, slot, bridge, guide • system, input, process, output • linear, rotary, oscillating, reciprocating • user, purpose, function • prototype, design criteria, innovative, appealing, design brie
Upper Key Stage 2		
Autumn Structures- Frame structures	Technical knowledge and understanding <ul style="list-style-type: none"> • Understand how to strengthen, stiffen and reinforce 3D frameworks. • Know and use technical vocal 	Key vocabulary <ul style="list-style-type: none"> • frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent • design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional
Spring Electrical - crumbles	Technical knowledge and understanding <ul style="list-style-type: none"> • Understand and use electrical systems in their products. • Understand the use of computer control systems in products. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project. 	Key vocabulary <ul style="list-style-type: none"> • reed switch, toggle switch, push-to make switch, push to-break switch, light dependent resistor (LDR), tilt switch • light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip • control, program, system, input device, output device, series circuit, parallel circuit • function, innovative, design specification, design brief, user, purpose
Summer Mechanisms pulleys and gears	Technical knowledge and understanding <ul style="list-style-type: none"> • Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project. 	Key vocabulary <ul style="list-style-type: none"> • pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor • circuit, switch, circuit diagram • annotated drawings, exploded diagrams • mechanical system, electrical system, input, process, output • design decisions, functionality, innovation, authentic, user, purpose, design specification, design brie

YEAR B

KEY STAGE 1

<p>Autumn Mechanisms Wheels and axels</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. • Know and use technical vocabulary relevant to the project. 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • vehicle, wheel, axle, axle holder, chassis, body, cab • assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism • names of tools, equipment and materials used • design, make, evaluate, purpose, user, criteria, functional
<p>Spring Free standing structures</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • cut, fold, join, fix • structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved • metal, wood, plastic • circle, triangle, square, rectangle, cuboid, cube, cylinder • design, make, evaluate, user, purpose, ideas, design criteria, product, function
<p>Summer Textiles- templates and joining</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project. 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • names of existing products, joining and finishing techniques, tools, fabrics and components • template, pattern pieces, mark out, join, decorate, finish • features, suitable, quality mock up, design brief, design criteria, make, evaluate, user, purpose, function

LOWER KEY STAGE 2

<p>Autumn Shell structures</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Develop and use knowledge of how to construct strong, stiff shell structures. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity • marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating • font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype
<p>Spring Textiles 2D shapes to 3D products</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project. 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance • user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern piece
<p>Summer Electrical Simple circuits and switches</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project. 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • series circuit, fault, connection, toggle switch, push to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip • control, program, system, input device, output device • user, purpose, function, prototype, design criteria, innovative, appealing, design brief

UPPER KEY STAGE 2

<p>Autumn Textiles (Using CAD or Different fabrics?)</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • A 3D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate. 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • computer aided design (CAD), computer aided manufacture (CAM) • font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip • design brief, design criteria, design decisions, innovative, prototype • seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces • names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper • annotate, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype
<p>Spring</p>		
<p>Summer Food Celebrating culture and seasonality</p>	<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary 	<p>Key vocabulary</p> <ul style="list-style-type: none"> • ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs • fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality • utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble • design specification, innovative, research, evaluate, design brief