

Structures Progression

In EYFS children explore how structures can be made using a range of materials such as boxes, tubes, and natural or recycled objects. They begin to make simple plans by verbally describing what they want to build. They develop early joining skills using tape, glue and other simple connectors, and experiment with how materials behave — noticing which bend, break, stack, float or soak up water. They build junk-model boats and test whether they float and stay waterproof. Children verbally evaluate their creations, saying what they like and how they might change them next time.



Vocabulary: material, join, stick, waterproof, float, sink, plan, model, predict

Possible projects: junk modelling, boats

In Key Stage 1 children design purposeful structures with a clear user and purpose in mind. They learn that existing products can inspire new ideas and begin using simple drawings or templates to communicate designs. When making, pupils choose from a small set of materials and tools, explaining their choices based on properties such as stiffness, strength or flexibility. They develop accuracy when cutting, folding, and joining, and begin to make structures more stable using wide bases, cylinders, folding, and strengthening techniques. Children learn that shape affects stability, and they explore how to reinforce weak areas. They evaluate their own products and those of their peers using simple design criteria, suggesting improvements based on stability, appearance and function.



Vocabulary: user, purpose, design criteria, stable, strong, stiff, fold, strengthen, cylinder, structure, improve

Possible projects: stable pencil pot, windmills, fairground wheels

In Lower Key Stage 2 children develop a deeper understanding of how structures are built and learn the differences between shell and frame structures. They create accurate nets to form three-dimensional shapes, use CAD to support design thinking, and add façades or cladding to improve aesthetics. Pupils select materials more deliberately for strength, function, and appearance, using techniques like lamination, ribbing and reinforcement.

In Year 4, pupils design free-standing frame structures such as pavilions, learning how materials, shape and joins affect form and stability. They measure, cut and assemble components with increasing accuracy and purpose. Evaluations become more reflective, with children testing structures against design criteria and considering both effectiveness and aesthetics.



Vocabulary: shell structure, net, façade, frame structure, cladding, lamination, ribbing, aesthetics, function, reinforce

Possible projects: product packaging, making a castle/building, helmets, pavilions

In Upper Key Stage 2 children apply more advanced understanding of structural engineering. In Year 5, they investigate how bridges are designed, using triangulation to strengthen structures and building truss, beam or arch bridges. They work confidently with wood, measuring, marking, cutting and reinforcing joints safely and accurately. Pupils justify material choices based on functional and aesthetic properties.

By Year 6, pupils design complex structures such as playground equipment, considering user experience, safety, function and appearance. They develop prototypes, refine designs through testing, and explain how changes improve performance. Children demonstrate secure knowledge of how and why structures are strengthened, stiffened and stabilised.



Vocabulary: triangulation, truss, beam bridge, arch bridge, prototype, footprint plan, reinforce, load, stability, user needs

Possible projects: bridges, playgrounds

Mechanisms and Mechanical Systems Progression

Although Mechanisms are not formally taught at EYFS, children naturally explore movement through play. They push, pull, slide and roll objects, observe simple cause-and-effect, and begin understanding that some objects have parts that move. They experiment with construction toys, noticing wheels turning or pieces sliding. This prepares them for early mechanical systems in KS1.

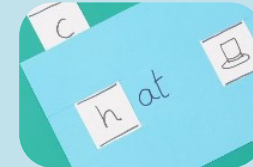


Vocabulary: push, pull, move, slide, roll, turn

In Key stage 1 children are introduced to basic mechanisms and learn that mechanisms help objects move in controlled ways. They explore sliders, levers, wheels and axles, understanding that mechanisms involve connected parts that produce movement from an input to an output.

They design simple moving products such as sliding storybooks, lever mechanisms or vehicles with wheels and axles. They use mock-ups, templates and labelled drawings to communicate their ideas.

Children develop accuracy when cutting, puncturing holes, spacing cuts evenly, and assembling moving components such as axles in axle holders or sliders guided by bridges. Evaluation focuses on how well the mechanism works and how it might be improved.



Vocabulary: mechanism, mechanical, movement, slider, model, mock-up, wheel, axle, chassis, rotate, turn, design brief, design criteria, criteria, evaluate, flexible, strong, weak, pivot

Possible projects: matching slider game, levers, moving monster, making a pop up book

In lower key Stage 2 children explore more complex mechanical systems and learn that mechanisms can use air pressure, levers, linkages and pneumatic systems to create movement. They recognise pneumatic systems in real-life contexts and understand how air can push or lift components.

They develop more technical drawing and modelling skills, using thumbnail sketches, exploded diagrams, and cross-sectional representations to explain ideas. They construct housings for mechanisms, seal joints, and combine multiple moving parts to create purposeful products such as pneumatic toys.

Children analyse existing products, give meaningful peer feedback, and refine designs to improve movement, accuracy or visual appeal.



Vocabulary: pneumatic system, air pressure, mechanism, mechanical system, lever, linkage, pivot, input, output, motion, function, exploded-diagram, thumbnail sketch, net, diagram, housing, structure, feedback, evaluate, annotate, criteria, prototype

Possible projects: mechanical cars, pneumatic toys

In Upper Key Stage 2 children develop understanding of cams, followers, gears and pulleys. They create automata and mechanical products that convert and change movement types.

They measure and cut materials accurately using specialist tools, assemble structures to support moving parts, and evaluate designs for efficiency and user needs.



Vocabulary: cam, cam profile, follower, automata, axle, frame, housing, dowel, gear, gear system, pulley, pulley system, teeth, input, output, mechanical advantage, cross-sectional diagram, exploded-diagram, problem statement, product analysis, modify, refine, accurate, evaluate, mark out, assemble

Possible projects: Automata toys, gears and pulleys

Electrical Systems Progression

Although electrical systems are not introduced at EYFS in the DT curriculum. Children instead encounter early ideas related to light, sound and simple cause-and-effect through play (e.g., pressing buttons on toys that light up). These experiences lay the foundation for understanding circuits and components later in KS2.



Vocabulary: button, light, sound, on

In Key stage 1 Electrical systems do not appear as a formal strand in KS1 within Kapow DT. However, children meet early foundations through exploring battery-powered toys, discussing what makes them work, and recognising that some objects need power. These early experiences build the understanding required for introducing circuits in LKS2.



Vocabulary: battery, light, switch, power

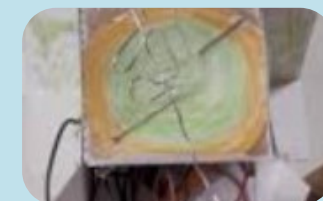
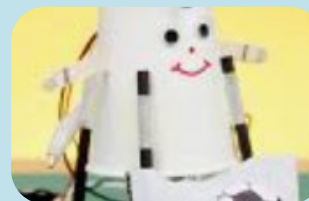
In lower key Stage 2 Children are formally introduced to electrical systems. They learn that an electrical system is made from components such as bulbs, wires, batteries, switches and that these must be connected in a complete circuit to function. They create simple electrical products such as posters with lights or torches. They plan where components will go, assemble circuits safely, and mount or house components so the product works reliably. Evaluation focuses on whether the circuit functions and how well the electrical system is integrated into the product.



Vocabulary: battery, bulb, buzzer, cell, component, conductor, copper, electrical item, electricity, electronic item, function, insulator, series circuit, switch, test, torch, wire, circuit, crocodile wires, electrical product, electrical system, battery holder, final design, information design, initial ideas, peer assessment, research, sketch

Possible projects: Electric poster, torches

In Upper Key Stage 2 Children deepen their understanding of electrical systems by creating more sophisticated products such as motorised models, steady-hand games or monitoring devices. They explore motors, buzzers, LEDs, and series circuits in more depth, and learn how configurations affect performance. Pupils design step-by-step plans, produce clear annotated diagrams, and test circuits systematically. They consider usability, sustainability, and product purpose when selecting components.

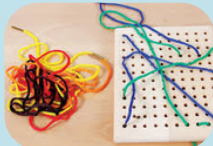


Vocabulary: electric motor, motor, motorised, circuit, circuit component, configuration, current, DIY, investigate, problem solve, product analysis, series circuit, stable, target user, battery pack, benefit, LED, conductor, insulator, component, bulb holder, evaluate, fit for purpose, gross motor skills, fine motor skills, form, function

Possible projects: wobble bots, doodlers, steady hand game

Textiles Progression

In EYFS children explore textiles through sensory play and simple construction activities. They cut paper and fabric, experiment with gluing and sticking, and begin threading using large needles or laces. They learn that materials can be joined, decorated and shaped. Children design simple textile-based items, such as patterns or bookmarks, and talk about what they have made.



Vocabulary: fabric, cut, glue, paper, on top, thread, needle, stitch, weave, tools, straight line, space, even, safety

Possible projects: book marks

In Key stage 1 children learn basic textile skills such as cutting fabric accurately, using templates, and joining materials with simple stitches. They begin with running stitch using large needles and binka/hessian or large-weave fabric. They design and create simple textile products such as puppets, adding decoration using glue, fabric pieces or simple stitching. Pupils start to understand safety rules and purposefully choose materials for appearance or function.



Vocabulary: decorate, design, fabric, glue, model, hand puppet, safety pin, staple, stencil, template, thread, needle, stitch, weave, running stitch, space, even, straight line, tools, cut, shape, thimble, knot, pouch, fabric glue, select

Possible projects: puppets, pouches, Christmas decoration

In lower key Stage 2 children advance their textile skills by using more precise stitches such as cross stitch and appliqué. They learn how to cut fabric accurately using templates and how to embellish items for function or decoration. They design textile items (e.g., cushions, Egyptian collars), learning about seams, stuffing, pattern, and decorative techniques. They think critically about how textiles are joined, turned inside out, and finished neatly.



Vocabulary: accurate, applique, cross-stitch, cushion, decorate, detail, fabric, patch, running stitch, seam, stencil, stuffing, template, shape, knot, sew, thread, thimble

Possible projects: Egyptian collars, cushions, book cover with fastening

In Upper Key Stage 2 children design and make more complex textile products such as book sleeves, stuffed toys, or waistcoats. They refine accuracy in measuring, marking and cutting fabric, and use a wider range of stitches including blanket stitch for strong joins and decorative effect. They incorporate fastenings such as buttons, toggles or Velcro, and work with pattern pieces. Pupils produce detailed annotated designs, consider client needs, and evaluate durability, usability and appearance.



Vocabulary: book sleeve, design criteria, fabric, fastening, mock-up, net, running stitch, stencil, target audience, template, accurate, annotate, appendage, blanket stitch, detail, evaluation, shape, stuffed toy, stuffing, waistcoat, unique, knot, sew, seam, thread, waterproof, pattern piece, seam allowance, target customer

Possible projects: stuffed toys, blood bags, bags, waistcoat/clothing

Cooking and Nutrition Progression

In EYFS children explore food through sensory experiences, tasting, smelling, touching and looking closely at fruits and vegetables. They learn to chop soft materials safely (beginning with plasticine) and take part in preparing simple foods such as soup. They learn that foods look, smell and taste different, begin identifying vegetables, and discuss healthy eating at a basic level.



Vocabulary: blender, fruit, healthy, ingredients, recipe, smoothie, vegetable, seed, root, leaf, stem, flavour, design, cut, juice, table knife, juicer, plant, bush, tree, vine, chopping board, fork, taste, select, blend, evaluate, compare

Possible dishes: EYFS no-cook/very soft prep soup, smoothies, fruit salad, fruit jelly, toast toppings

In Key stage 1 children learn to prepare simple dishes such as smoothies and wraps. They identify whether foods are fruits or vegetables, understand where they grow, and begin to recognise the basic food groups. Skills include chopping, grating, snipping, spreading, and juicing safely. Children create simple recipes with support and evaluate taste, appearance and smell. They learn that some foods are healthier than others and understand that packaging provides important information.



Vocabulary: appearance, balanced, carbohydrates, combination, dairy, design, design brief, diet, feel, grate, grater, menu, oils, prepare, proteins, review, scissors, smell, snip, spread, spreads, evaluate, chopping board, taste, fruit, vegetable, juice, plant, recipe

Possible dishes: KS1 cold assembly & knife basics wraps, pinwheels, coleslaw, yoghurt parfaits, pittas with salad/falafel

In Lower Key Stage 2 children explore seasonality and learn that some ingredients grow only at certain times of the year. They use this knowledge to prepare seasonal dishes. Skills include peeling, cutting and following recipes with increasing independence. They use vocabulary to describe flavours and textures and learn that eating seasonal, local produce can benefit the environment. They begin considering how presentation affects the appeal of food.



Vocabulary: arid, climate, complementary, country, export, import, Mediterranean, mock-up, mountain, peel, polar, seasonal, seasons, snip, temperate, texture, tropical, weather, accurate, slice, cut, evaluate

Possible dishes: LKS2 add seasonality and controlled heat where appropriate Biscuits, seasonal dish; Spring: pea and mint couscous, summer: tomato-basil bruschetta, summer berry Eton-style pots, autumn, roasted veg salad, apple crumble, Winter: carrot and lentil soup

In Upper Key Stage 2 children deepen their understanding of nutrition, adapting recipes for dietary needs or improved nutrition. They explore the journey of food from farm to fork, analyse food labels, and learn about cross-contamination and kitchen hygiene. They prepare more complex dishes, follow multi-step recipes, and evaluate dishes based on taste, smell, appearance and nutritional content. Pupils also learn about budgeting and sustainability in food production.



Vocabulary: abattoir, adaptation, balanced, beef, brand, cook, cross-contamination, develop, enhance, equipment, farm, label, measure, nutrient, nutrition, nutritional value, preference, press, process, safety, theme, accurate, annotate, detail, evaluate, flavour, recipe, smell, sweet, salty, sour, bitter, umami

Possible dishes: UKS2 full recipes, nutrition and hygiene. pasty, fishcakes, pasta, dal with chapati, tacos

Digital World Progression

In EYFS digital systems are not formally taught at EYFS, but children begin developing early digital awareness. They use simple digital toys (e.g., role-play tills, light-up devices) and begin recognising that technology has functions. They explore cause-and-effect through pressing buttons that initiate sounds, lights or movement. These experiences help prepare children for understanding programmable systems later on



Vocabulary: button, press, light, sound, move, on, off

In Key stage 1 digital systems do not appear formally in KS1 DT within Kapow, but children begin using images, patterns and simple planning steps that support later CAD and programming concepts. They may also encounter programmable toys in computing (e.g., Bee-Bots), building early understanding of algorithms, steps, and instructions.



Vocabulary: pattern, instruction, button, move, control

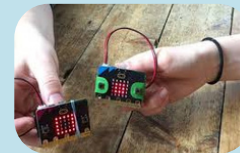
In lower key Stage 2 children are introduced formally to Digital World concepts. They learn what a Micro:bit is and how it can be used in design. They use Computer-Aided Design (CAD) to draw and manipulate 2D shapes for simple products such as badges. They write basic programs to monitor or control something (e.g., light levels triggering LEDs). Children test, debug and refine their programs, collect feedback from users, and understand that digital products are designed for a target audience.



Vocabulary: loop, Micro:bit, simulator, point of sale display, CAD (Computer-Aided Design), focus group, variables, algorithm, code, debug, ergonomic, aesthetic, prototype, logo, user, design criteria, exhibition, feedback, timer, program, initiate, digital, control, display

Possible projects: micro bit fitness tracker, mindfulness timer

In Upper Key Stage 2 children deepen their understanding of digital systems by designing wearable technology, monitoring devices, or navigation tools. They use CAD to create 3D models, combine and modify shapes, and justify design decisions. They explore sensors such as temperature sensors, compasses (magnetometers) and accelerometers, and write programs using conditional statements (e.g., if temperature > X then alert). Children consider sustainability when selecting materials for digital products and evaluate systems for usability, accuracy, and user benefit.



Vocabulary: device, monitor, monitoring device, sensor, conditional statements (and/or), thermometer, digital revolution, programming loop, decompose, model, manipulate, Micro:bit, workplace, sustainable, 3D CAD, GPS tracker, navigation, magnetometer, accelerometer, multifunctional, concept, client, product lifecycle, recyclable, smart, variable, function, form, feature

Possible project: animal monitor, navigation