

**Skills Progression**

**Design Technology**

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|  | **Designing and Developing** | **Making and technical skills** | **Evaluating (own products and existing products)** | **Cooking and Nutrition** |
| EYFS | * Think about and discuss what they want to make.
* Discuss problems and how they might be solved as they arise.
* Children should learn and use appropriate technical vocabulary linked to all their design and technology activity.
 | * Construct with a range of materials and tools.
* Use glue and tape to join materials.
* Children explore and use a range of construction kits.
* Children should be taught procedures for safety and hygiene.
* Children develop practical skills and techniques using a range of materials (food, textiles and construction materials)
* Children develop their knowledge and understanding in relation to mechanisms, structures, working with food and textiles.
 | * Be excited and able to share what I have made
* Reflect with children on how they have achieved their aims.
* Children ask questions about existing products.
* Children explore the designed and made world through the indoor and outdoor environment, and role-play.
 | * Prepare a range of simple dishes
* Safely use simple utensils to prepare food.
 |
| Vocab | Build, construct, design, glue, stick, attach, turn, spin, strong, stiff |

Development Matters - Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.

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|  | **Designing and Developing** | **Making and technical skills** | **Evaluating (own products and existing products)** | **Cooking and Nutrition** |
| Year 1 | * Generate ideas from my own experiences
* Talk about my ideas and say what will be done
* Describe what I want to do using pictures and words
* Choose and make lists of materials and tools I will need
 | * Join two materials together, often with glue
* Use scissors or a knife to cut, sometimes with help
* Make simple models, not necessarily with a purpose
* Use simple construction kits – e.g. Lego
* Use wheels and axels in my construction.
* Use templates to measure and then cut textiles;
* Select appropriate fabrics.
* Sew and join fabrics with a running stitch.
 | * Talk about my work and what went well;
* Talk about existing products and how they work, and their materials;
* Say what is good, and what isn’t, about existing products.
* Explore a range of freestanding structures in the school and local environment.
 | * Wash hands and clean surfaces when cooking;
* Cut, peel and grate safely and with confidence.
 |
|  | * Distinguish between fixed and freely moving axles
 |  | * Know where different types of food come from (e.g. plant, animals)
* Know the link between foods and the seasons.
 |
| Vocab | * 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
* template, pattern pieces,
* flesh, skin, slicing, peeling, core, pip
* structure, names of shapes, cut, fold, join, fix
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|  | **Designing and Developing** | **Making and technical skills** | **Evaluating (own products and existing products)** | **Cooking and Nutrition** |
| Year 2 | * Generate ideas, and plan what to do next, using my experience of materials and components
* Use my knowledge of some working characteristics of materials when designing
* Use slides and levers in plans
* Use plans to show how to put my ideas into practice
* Explain how the product will be useful
* Draw pictures with labels and some description
 | * Begin to select tools for folding, joining, rolling
* Measure out and cut materials
* Select new and reclaimed materials and construction kits to build their structures.
* Use simple finishing techniques suitable for the structure they are creating.
* Select tools and techniques appropriate to the job
* Use levers or slides in my design;
* Measure and accurately cut textiles;
* Cut textiles from a template;
* Use more than 1 type of stitch.
 | * Recognise what I have done well and talk about what could be improved, thinking about the intended purpose.
* Respond to the feedback of others
* Predict how changes will improve the finished product.
* Evaluate different existing products that contain levers and sliders.
 | * Prepare a range of more complex dishes (Cook School)
* Use simple scales or balances
* Safely and hygienically prepare fruit and/ or vegetables using appropriate tools
 |
|  | * Follow basic safety rules
* Understand and use the terms related to structures, textiles, levers and slides;
* Know that different mechanisms result in different movements.
 | * Talk about how moving objects work
* Describe how a commercial product works
* Use like and dislike when evaluating or describing
 | * Understand and use the terms ingredient
* Understand main rules of food hygiene
* Understand about a healthy, varied and balanced diet;
* Understand about the “eat well plate” and “5-a-day”.
 |
| Vocab | * 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
* cut, fold, join, fix
* flesh, skin, slicing, peeling, core, pip
* structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved
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|  | **Designing and Developing** | **Making and technical skills** | **Evaluating (own products and existing products)** | **Cooking and Nutrition** |
| Year 3 | * Build upon the ideas to develop my own ideas
* Ensure that plans are realistic and appropriate for the aim
* Show the order of working in plans
* Use models, pictures and words in designs
* Apply what they know about mechanisms to create movement when planning and designing (gears and pulleys)
* Investigate a range of products that use levers and linkages
 | * Measure and cut out using standard measurements
* Choose tools and equipment which are appropriate for the job
* Prepare for work by assembling components together before joining
* Use scoring and folding for precision
* Work out how to make shell structures stronger
* Alter and adapt materials to make them stronger
* To use levers and linkages to create a product
* Use multiple fabric shapes to make a 3D textiles product.
* Know how to strengthen and reinforce 3D fabrics
 | * Be clear about my ideas when asked
* Can alter and adapt original plans following discussion and evaluation
* Recognise what has gone well, but suggest further improvements for the finished article
* Suggest which elements I would do better in the future
* Evaluate existing products based on materials, how well they’ve been made, and fitness for purpose.
 | * Prepare a range of more complex dishes using a range of cooking techniques
* Begin to select my own ingredients when cooking or baking
* Make good presentation of food
 |
| * Recognise that designs must meet a range of needs
* Say why something will be useful
 | * Understand the effect of levers and linkages in a mechanical system.
* Distinguish between fixed and loose/ moving pivots
* Use technical vocabulary related to their product.
 | * Learn about the role of inventors, engineers and designers.
 | * Understand safe food storage
* Understand the principles of a healthy and balanced diet.
 |
| Vocab | * mechanism, lever, linkage, pivot, slot, bridge, guide
* system, input, process, output
* linear, rotary, oscillating, reciprocating
* user, purpose, function
* prototype, design criteria, innovative, appealing, design brief
* 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
* fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance
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|  | **Designing and Developing** | **Making and technical skills** | **Evaluating (own products and existing products)** | **Cooking and Nutrition** |
| Year 4 | * Collect and use information to generate ideas
* Consider the way the product will be used
* Take users’ views into account
* Think ahead about the order of their work
* Add electricity to create motion or make light
* Produce step by step plans
* Make ongoing sketches and annotations
 | * Increasingly model my ideas before making
* Measure accurately using standard measures
* Combine materials for strength, durability or flexibility and to improve how the product looks
* Use permanent and temporary fastenings to join using a range of techniques (including those other than glue or tape e.g. split pins, dowel and washers etc)
* Strengthen joins and corners in a shell structure, using a variety of ways
* Use pneumatics in a design
* Use a simple circuit in a product, with a switch.
* Combine 2D textile shapes to make a 3D textile product.
 | * Analyse how existing products have been designed and made;
* Evaluate how well products work and achieve their purpose.
* Evaluate what went well with my product design giving reasons
* Develop my designs through my own reflection and the evaluation of others
* Make improvements based on testing
 | * Prepare a range of more complex dishes (Cook School) using a range of cooking techniques
* Select my own ingredients when cooking or baking
* Evaluate food by taste, texture, flavour etc.
 |
| * Understand how the properties of materials may be used for particular products
* Understand designs must meet a range of criteria and constraints
 | * Understand how pneumatics can be used to power a system.
* Use technical vocabulary related to their product.
 |  | * Understand about the seasonality of food;
* Understand about how land use and land type effects the food that is produced;
* Understand how seasonality effects diet.
 |
| Vocab | * components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener
* pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight
* linear, rotary, oscillating, reciprocating
* user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate
* 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
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|  | **Designing and Developing** | **Making and technical skills** | **Evaluating (own products and existing products)** | **Cooking and Nutrition** |
| Year 5 | * Make more complex designs to include cams
* Plan my work considering potential problems
* Explore alternative ways of doing things
* Meet an identified need – e.g. a meal for an older person – by selecting ingredients or materials
* Use various sources of information and draw on them in design.
 | * Carry out tests to see if my design works
* Make improvements from design suggestions
* Measure and cut precisely to millimetres
* Make stable and strong joins to stand the test of time (including using joins other than glue or tape)
* Build a 3D product using a strong framework
* Use a series circuit with more than one component and a switch.
* Use cams in my design and create a system that uses cams to function
* Combine fabric templates to make a 3D product, using different stitches.
* Understand how 3D fabric can be strengthened or stiffened.
 | * Identify what is working well and what might be improved – and make choices from several alternatives
* Refine the quality of the finished product, including making annotations on the design
* Clarify ideas through drawing and modelling
* Increasingly use testing to improve models and finished products
* Evaluate existing products that contain linkages and levers, and identify how they work.
* Identify the user, use and design of an existing product;
* Evaluate the innovation and sustainability of an existing product
 | * Prepare a range of more complex dishes using a range of cooking techniques and recognising the seasonality of produce used.
* Use proportions when cooking, by doubling and halving recipes
* 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 the key components in a more complex circuit and understand how a circuit and switch works;
* Understand the purpose of a cam in a mechanical system
 |  | * Work in a safe and hygienic way
* Understand how different types of food are grown/ reared/ caught/ processed;
* Understand the advantages and disadvantages of different types of food production (e.g. cost/ health benefits etc).
* Know and use relevant technical and sensory vocabulary.
 |
| Vocab | * cam, snail cam, off-centre cam, peg cam, pear shaped cam
* follower, axle, shaft, crank, handle, housing, framework
* rotation, rotary motion, oscillating motion, reciprocating motion
* annotated sketches, exploded diagrams
* mechanical system, input movement, process, output movement
* frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent
* seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces
* name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper
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|  | **Designing and Developing** | **Making and technical skills** | **Evaluating (own products and existing products)** | **Cooking and Nutrition** |
| Year 6 | * Keep cost constraints in mind when selecting materials in design
* Be aware of commercial aspects and incorporate these into their designs
* Design including pulleys and/ or gears
* Draw diagrams using scales where appropriate
 | * Measure and cut out in precise detail, and make sure that finished products are carefully finished for strength and aesthetics
* Make separate elements of a model before combining into the finished article;
* Know how to stiffen/ strengthen/ reinforce a 3D frame.
* Use pulleys and / or gears to create a system.
* Use computer control within a system;
* 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.
* Pin and tack fabric pieces;
* Select the most appropriate stitch for a given purpose;
* Make a textile product that is attractive and strong.
 | * Research products using the internet
* Test and evaluate commercial products, understanding how this information supports my own designs
* Evaluate a range of different sources of information such as advertising and handbooks
* Evaluate different products that use different mechanical systems and explain how they work.
* Evaluate own product based on a success criteria and suggest improvements moving forwards.
* Evaluate what impact certain products have had beyond their intended purpose.
 | * Prepare a range of more complex dishes (Cook School) using a range of cooking techniques and recognising the seasonality of produce used.
* Plan and select ingredients for a savoury meal based on a given brief and audience.
 |
|  | * Knowledge of more complex circuits;
* Knowledge of how to use a computer control system

Understand the role of a pulley and/ or gear in a system * Know and use technical vocabulary relevant to the project.
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| Vocab | Switch, transistor, potentiometer, LED, control, algorithm, input device, output device, commercial, drive, savoury, reinforce, structure, pin, tack. reed switch, toggle, push to make switch, push to break switch, light dependentresist or ( LDR), tilt switch light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clipcontrol, program, system, input device, output device , series circuit, parallel circuit, function, innovative, design specification, design brief, frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent |