

**Skills Progression**

**Design Technology**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **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.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **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 | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **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 | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **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 | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **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 | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **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 | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **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. |  |  |
| 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 dependent  resist or ( 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,  frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent | | | |