|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DT Progression of skills/concepts | | | | | | | | | | |
| EYFS | F1 (3 and 4 year olds) Progression of skills | | | | Reception Progression of Skills | | | ELG | | | |
|  | **Personal, Social and Emotional Development**   * Select and use activities and resources, with help when needed.   **Physical Development**   * Use gross motor skills to wave flags they have created. * Use fine motor skills to paint and make marks. * Choose the right resources to carry out a plan of their own. * Use one – handed tools and equipment, for example making snips in paper with scissors.   **Understanding the world**   * Explore how things work.   **Expressive Arts and Design**   * Make imaginative and complex ‘small worlds’ with blocks and constructions kits. * Explore different materials freely, in order to develop their ideas about how to use them and what to make. * Develop their own ideas and then decided which materials to use to express them. * Create closed shapes with continuous lines, and begin to use these shapes to represent objects. | | | | **PD –Fine Motor Skills**   * Use a more fluent style of moving, with developing control and grace. * Uses a wider range of tools competently, safely and confidently.   **Expressive Arts and Design (EAD)**   * Use and refine a variety of artistic effects to express their ideas and feelings. * Pupils’ creations are more clearly representational and outcomes have a more easily identifiable purpose. * Pupils’ return to previous learning, ideas and designs to build on them and show their ability to represent them. * Explore how to create collaboratively, share ideas, resources and skills. | | | **Physical Development: Fine motor**   * Hold a pencil effectively in preparation for fluent writing (using the tripod grip in almost all cases). * Use a range of small tools, including scissors, paintbrushes and cutlery.   **Expressive Arts and Design: Creating with Materials**   * Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. * Share their creations, explaining the process they have used. * Make use of props and materials when role playing characters in narratives and stories. | | | |
|  | KS1 | | | | LKS2 | | | UKS2 | | | |
| National Curriculum | Pupils should be taught:  **Design**   * Design purposeful, functional, appealing products for themselves and others based on design criteria. * Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology.   **Make**   * Select from and use a range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing) * Select from and use a wide range of materials and components, including construction materials, textiles and ingredient according to their characteristics.   **Evaluate**   * Explore and evaluate a range of existing products. * Evaluate their ideas and products against design criteria.   **Technical knowledge**   * Build structures, exploring how they can be made stronger, stiff and more stable. * Explore and use mechanisms (for example levers, sliders, wheels and axles) in their products.   **Cooking and nutrition**   * Use the basic principles of a healthy and varied diet to prepare dishes. * Understand where food comes from. | | | Pupils should be taught:  **Design**   * Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fir for purpose, aimed at particular individuals or groups. * Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagram, prototypes, pattern pieces and computer aided design.   **Make**   * Select from and use a wide range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing) accurately. * Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.   **Evaluate**   * Investigate and analyse a range of existing products. * Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. * Understand how key events and individuals in design and technology have helped shape the world.   **Technical knowledge**   * Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. * Understand and use mechanical systems in their products (for example gears, pulleys, cams, levers and linkages). * Understand and use electrical systems in their products (for example series circuits incorporating switch, bulbs, buzzers and motors). * Apply their understanding of computing to program, monitor and control their products.   **Cooking and nutrition**   * Understand and apply the principles of a healthy and varied diet. * Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. * Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. | | | | | | | |
|  | **Year 1** | **Year 2** | **Year 3** | | | **Year 4** | **Year 5** | | **Year 6** |
| Mechanisms | * Explore and use sliders and levers. * Understand that different mechanisms produce different types of movement. * To know and use a range of technical vocabulary relevant to the project. | * Explore and use wheels, axles and axle holders. * To know the difference between fixed and freely moving axles. * To know and use a range of technical vocabulary relevant to the project. |  | | | * To know the difference between fixed and loose pivots. * To understand and use lever and linkage mechanisms. * To know and use a range of technical vocabulary relevant to the project. | * To understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. * To know and use a range of technical vocabulary relevant to the project. | |  |
| **Outcome:** Moving picture | **Outcome:** Cart |  | | | **Outcome:** Catapults | **Outcome:** | |  |
| **Materials:**  Card, paper, sellotape, colouring crayons and/or felt tips. | **Materials:**  Wood dowels, cardboard, masking tape/sellotape, wheels, glue, elastic bands. |  | | | **Materials:**  Cardboard, lolly pop sticks, elastic bands, glue, wood | **Materials:**  Charcoal, pencils, oil pastels, chalk, coloured pencils, felt tips | |  |
| **Tools:**  Scissors, pencil, ruler. | **Tools:**  Scissors, pencil, ruler, glue gun. |  | | | **Tools:**  Hand saw, glue gun, safety knife, ruler, pencils. | **Tools:** | |  |
| **Vocabulary:**  Slider, lever, slot, card, masking tape/sellotape, pull, push up, down, straight, forwards and backwards. | **Vocabulary:**  Vehicle, wheel, axle, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, moving. |  | | | **Vocabulary:**  Mechanism, lever, linkage, pivot, slot, bridge, guide system, linear, cutting, joining, finishing, oscillating, reciprocating. | **Vocabulary**  Pulley, drive belt. gear, spindle, driver, axle, annotated drawings, mechanical system, input, output, process. | |  |
| Structures | * To know how to make freestanding structures stronger, stiffer and more stable. * To know and use the correct technical vocabulary relevant to the project. |  | * To develop and use knowledge of how to construct strong, stiff shell structures. * To know and use technical vocabulary relevant to the project. | | |  |  | | * To understand how to strengthen, stiffen and reinforce 3D frameworks. * To know and use technical vocabulary relevant to the project. |
| **Outcome:** Build a den |  | **Outcome:** Build an earthquake proof building (carpark) | | |  |  | | **Outcome:** Build a bridge |
| **Materials**  Cardboard, paper, sellotape, fabric, glue. |  | **Materials**  Cardboard, fabric, card, paper, toilet roll/kitchen roll cubes, sellotape, glue, string, | | |  |  | | **Materials**  Cardboard, wood, sellotape, string, glue gun, nails, string, paper, fabric. |
| **Tools:**  Scissors, glue |  | **Tools:**  Scissors, glue gun, ruler. | | |  |  | | **Tools**  Hand saw, glue gun, hammer, safety goggles and clamp. |
| **Vocabulary**  Cut, fold, join, fix, structure, side, edge, surface, thinner, thicker, corner, straight. |  | **Vocabulary**  Shell structure, shape, adhesives, joining, assemble, recycle, reuse, prototype, cylinder, base, triangular, support. | | |  |  | | **Vocabulary**  Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent. |
| Textiles |  | * To understand how simple 3D textile products are made, using a template to create two or more identical shapes. * To understand how to join fabrics using different techniques eg. Running stitch, glue * To explore different finishing techniques. * To know and use technical vocabulary relevant to the project. | * To know how to strengthen, stiffen and reinforce existing fabrics. * To understand how to securely join two pieces of fabric together. * To understand the need for patterns and seam allowances. * To know and use technical vocabulary relevant to the project. | | |  | * To produce a 3D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics. * Understand how fabrics can be strengthened, stiffened and reinforced where appropriate. | |  |
|  | **Outcome:**  Bunting – WW2 | **Outcome:** Hand Puppets | | |  | **Outcome:** Purses (linking to the accidence Maya’s) | |  |
|  | **Materials**  Fabric, thread, template, cardboard, | **Materials**  Names of specific fabrics, thread, template, cardboard, buttons, beads. | | |  | **Materials**  Names of specific fabrics, thread, templates, cardboard, buttons, fastenings, pins | |  |
|  | **Tools:**  Scissors, needle, thimble. | **Tools:**  Fabric scissors, needle, thimble, | | |  | **Tools:**  Fabrics scissors, needle, thimble, pins | |  |
|  | **Vocabulary**  Mono print, layering | **Vocabulary**  Fabric, names of fabrics, fastening, compartment, structure, finishing technique, strength, weakness, templates, stitch, seam, seam allowance, blanket stitch. | | |  | **Vocabulary**  Fabric, names of fabrics, seam, seam allowance, reinforce, hem, template, pattern pieces, names of fastenings used, pins, needle, thread, fastenings, blanket stitch, running stitch, applique. | |  |
| Electric |  |  |  | | | * To understand and use electrical systems in their products linked to science coverage. * Apply their understanding of computing to programme and control their products. |  | | * To understand and use electrical systems in their products linked to science coverage. * Apply their understanding and knowledge of computing to program, monitor and control their products. |
|  |  |  | | | **Outcome:** Torches |  | | **Outcome:** |
|  |  |  | | | **Materials**  Cardboard, motor, bulb, switch |  | | **Materials** |
|  |  |  | | | **Vocabulary**  Series circuit, fault, connection, toggle switch, battery, battery holder, bulb, wire, conductor, crocodile clip, control programme, system. |  | | **Vocabulary**  Switch, toggle switch, push to make switch, push to break switch, light, dependent resistor, tilt switch, light, battery, battery holder, USB cable, wire, conductor crocodile clip, control, programme, system, parallel circuit, series circuit. |
| Cooking and nutrition | * To understand and use basic principle of a healthy and varied diet to prepare a fruit/vegetable based dish. * To know about the food plate. | * To understand where a range of fruit and vegetables come from eg. Farmed or grown. * To understand and use the basic principles of a healthy and varied diet to prepare a dish. * To know what the food plate is and what it represents. |  | | | * To know how to use appropriate equipment and utensils to prepare and combine food. * To know about a range of fresh and processed ingredients appropriate for their product * To know whether their ingredients are grown, reared or caught. |  | | * To understand about seasonality in relation to food products and the source of different food products. * To know how to use utensils and equipment. * To understand what the eatwell plate is and what each section represents. * Be able to explain how the eat well plate is represented within their meal. * To be able to use select and use the appropriate tools for their dish. |
|  | **Outcome:** Fruit kebabs | **Outcome:** Sandwich for a superhero |  | | | **Outcome:** Home made pizza (including making the dough) |  | | **Outcome:** To create their own healthy snack. |
|  | **Materials/Tools:**  Sharp knife (bridge and claw cut), wood skewer, chopping board, range of fruits. | **Materials/Tools:**  Sharp knife (cut ingredients into smaller pieces using the claw and bridge), chopping board, grater, butter, bread, range of fillings. |  | | | **Materials/Tools:**  Sharp knife (cut ingredients into small pieces using the claw and bridge), chopping board, grater, spatula, ingredients of their choice for the dough and topping. |  | | **Materials/Tools:**  Sharp knife (cut ingredients into small pieces using the claw and bridge), chopping board, grater, spatula, ingredients of their choice. |
|  | **Vocabulary**  Names of fruit used, knife, wooden skewer, soft, crunchy, sweet, smooth, cutting, bridge, claw | **Vocabulary**  Names of food used, knife, wooden skewer, soft, crunchy, sweet, smooth, cutting, bridge, claw, slicing, peeled, cutting, healthy diet, eat well plate, skin, core, sticky, sour, crisp, sharp, hard |  | | | **Vocabulary**  Names of food used, sharp knife, chopping board, grater, spatula, bridge and claw cut, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, frozen, tinned, reared, grown, caught, knead, combine, fold. |  | | **Vocabulary**  Names of food used, sharp knife, chopping board, grater, spatula, bridge and claw cut, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, fat, sugar, carbohydrates, nutrition, source, seasonality, combine, stir, whisk. |
| Design | * Design appealing products for a particular user, based on a simple design criteria. * Generate initial ideas and design criteria through own experiences. * Develop and communicate these ideas through talk and drawings and mock ups where relevant. | * Generate ideas based on simple design criteria and their own experiences, explain what they could make. * Develop, model and communicate their ideas through talking, mock-ups and drawings. | * Generate realistic ideas through   discussion and design criteria for an  appealing, functional product fir for purpose and specific a user.   * Develop and communicate their ideas by using annotated sketches, prototypes, final product sketches and pattern pieces; communication technology. | | | * Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose. * Use annotated sketches and appropriate information and communication technology, such as web-based recipes to develop and communicate ideas. * Generate, develop, model and communicate realistic ideas through discussion and as appropriate, annotated sketches, cross-sectional and exploded diagrams. | * Generate innovative ideas through research including surveys, interviews and questionnaires and discussion with peers to develop a design brief and criteria for a design specification. * Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. * Develop and communicate ideas through discussion, annotated drawing, explored drawings and drawing from different views and where appropriate computer aid design. | | * Use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products. * Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. * Generate and develop innovative ideas and share and clarify these through discussion. * Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. |
| Make | * Select and use simple utensils, tools and equipment to perform a job eg. cut safety, mark out. * Select from a range of ingredients and materials according to their characteristics to create a chosen product. | * Plan by suggesting what to do next. * Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices. * Select new and reclaimed materials, components to construct and build their products with. * Use simple finishing techniques suitable for the products they are creating. | * Plan the main stages of making. * Select from and use a range of appropriate utensils, tools and equipment with some accurately related to their product. * Select from and use finishing techniques suitable for the product they are creating. | | | * Order the main stages of making. * Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products. * Explain their choice of materials according to functional properties and aesthetic qualities. * Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties. | * Produce detailed lists of equipment and fabrics relevant to their tasks. * Write a step-by-step plan, including a list of resources required. * Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources. | | * Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. * Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. * Use finishing and decorative techniques suitable for the product they are designing and making. |
| Evaluate | * Explore a range of existing products related to their design criteria. * Evaluate their ideas throughout their project as well as evaluate their finish product against their design criteria, including its intended user and purpose. | * Taste, explore and evaluate a range of products to determine preferences for the product. * Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. | * Investigate, explore and evaluate a range of 3D textile products, ingredients and lever and linkage products relevant to their project. * Test their product against the original design criteria and with the intended user in mind. * Evaluate throughout the project as well as the final project with reference being made constantly to the design criteria and the views of others. | | | * Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. * Test and evaluate their own products against design criteria and the intended user and purpose. * Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. | * Investigate and analyse products linked to their final product. * Compare the final product to the original design specification and record the evaluations. * Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. * Consider the views of others to improve their work. | | * Continually evaluate and modify the working features of the product to match the initial design specification. * Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. * Test the system to demonstrate its effectiveness for the intended user and purpose. |