## DT progression of knowledge, skills and vocabulary

<table>
<thead>
<tr>
<th>EYFS</th>
<th>Characteristics of effective learning</th>
<th>Early Learning Goals</th>
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|      | Show curiosity about objects, events and people  
     | Questions why things happen  
     | Engage in open-ended activity  
     | Thinking of ideas  
     | Find ways to solve problems / find new ways to do things / test their ideas  
     | Use senses to explore the world around them  
     | Create simple representations of events, people and objects  
     | Planning, making decisions about how to approach a task, solve a problem and reach a goal  
     | Checking how well their activities are going  
     | Changing strategy as needed  
     | Reviewing how well the approach worked | Choose the resources they need for their chosen activities  
     | Handle equipment and tools effectively  
     | Children know the importance for good health of a healthy diet  
     | They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  
     | Children use what they have learnt about media and materials in original ways, thinking about uses and purposes.  
     | They represent their own ideas, thoughts and feelings through design and technology |

### Skills

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<th>Year 1</th>
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<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
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| **Generating ideas - designing** | **Design appealing products for a particular user based on simple design criteria.**  
   | **Generate ideas based on simple design criteria and their own experiences, explaining 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 that are fit for purpose and specific user/s.**  
   | **Use annotated sketches, prototypes, final product sketches and pattern pieces; 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 and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.**  
   | **Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.**  
   | **Develop, 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.**  
   | **Develop 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 drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided 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.** |
| **Making** | **Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out.**  
   | **Plan by suggesting what to do next.**  
   | **Select from and use a range of appropriate utensils, tools and equipment with some**  
   | **Order the main stages of making.**  
   | **Select and use appropriate tools to measure, mark out, cut, score, shape and**  
   | **Produce detailed lists of equipment and fabrics relevant to their tasks**  
   | **Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.** |

**Children know the importance for good health of a healthy diet.**  
**Handle equipment and tools effectively.**  
**They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.**  
**They represent their own ideas, thoughts and feelings through design and technology;**
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<tr>
<td><strong>Food</strong></td>
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<td>• Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</td>
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<td>• Know how to use appropriate equipment and utensils to prepare and combine food.</td>
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<td>• Know how to use utensils and equipment including heat sources to prepare and cook food.</td>
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| Vocabulary | planning, investigating design, evaluate, make, user, purpose, ideas, product, | investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function | user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing | evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations | design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype | function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype |

| Evaluating | • Taste, explore and evaluate a range of products to determine the intended user’s preferences for the product | • Explore a range of existing products related to their design criteria. | • Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project. | • Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. | • Investigate and analyse products linked to their final product. | • Continually evaluate and modify the working features of the product to match the initial design specification. |
| • Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose. | • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. | • Test their product against the original design criteria and with the intended user. | • Test and evaluate their own products against design criteria and the intended user and purpose. | • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. | • Compare the final product to the original design specification and record the evaluations. | • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. |
| • Investigate the ongoing work and the final product with reference to the design criteria and the views of others. | • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. | • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. | • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. | • Consider the views of others to improve their work. | • Test the system to demonstrate its effectiveness for the intended user and purpose. |
### Structures
- 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.
- Understand how to strengthen, stiffen and reinforce 3D frameworks.
- Know and use technical vocabulary relevant to the project.

### Vocabulary
- 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
- 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
- frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent

### Textiles
- 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.
- Know and use technical vocabulary relevant to the project.
- 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.
- Produce a 3-D 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.
- Know and use technical vocabulary relevant to the project.

### Vocabulary
- 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
- 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/variety diet
- 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
- gluten, dairy, allergy, intolerance, seasonality, sensory vocabulary relevant to the project.

### Vocabulary
- relevant to the project.
- Know and use technical vocabulary relevant to the project.
- Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate.
- 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.
- Understand about seasonality in relation to food products and the source of different food products.
- Know and use relevant technical and sensory vocabulary.
### Vocabulary
- Joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish
- Fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance
- 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,

### Mechanisms/mechanical systems
- **Vocabulary**
  - Slider, lever, pivot, slot, bridge-guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards
  - Vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used
- **Mechanisms/mechanical systems**
  - Explore and use sliders and levers.
  - Understand that different mechanisms produce different types of movement.
  - Know and use technical vocabulary relevant to the project.
  - Explore and use wheels, axles and axle holders.
  - Distinguish between fixed and freely moving axles.
  - Know and use technical vocabulary relevant to the project.
  - Understand and use lever and linkage mechanisms.
  - Distinguish between fixed and loose pivots.
  - Know and use technical vocabulary relevant to the project.
- **Electrical systems**
  - 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
  - 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

### Electrical systems
- Understand and use electrical systems in their products linked to science coverage.
- Apply their understanding of computing to program and control their products.
- Know and use technical vocabulary relevant to the project.
- Understand and use electrical systems in their products linked to science coverage.
- Apply their understanding of computing to program, monitor and control their products.
- Know and use technical vocabulary relevant to the project.