



## What does it mean to be a designer? What does it mean to behave and think like a designer?

- Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes
- An excellent attitude to learning and independent working
- The ability to use time effectively and work constructively and productively with others
- The ability to carry out through research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely
- A thorough knowledge of which tools, equipment and materials to use to make their products
- The ability to apply mathematical knowledge
- The ability to manage risks exceptionally well to manufacture products safely and hygienically
- A passion for the subject and knowledge of up to date technological innovations in materials, products and systems

## Design & Technology - Progression of Skills and Knowledge

|                   | EYFS                                                                     | 1                                                                                                                                                                               | 2                                                                                                                                                                                      | 3                                                                                                                                            | 4                                                                                                                                | 5                                                                                                                                                | 6                                                                                                                                                                               |
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|                   | Bridge building (structures)                                             | Textiles (simple sewing and gluing decoration to fabric)<br><br>Mechanisms (wheels and axles)<br><br>Structures – free standing                                                 | Food<br><br>Mechanisms (levers and sliders)<br><br>Structures                                                                                                                          | Textiles – Orla Kiely<br><br>Mechanisms (levers and linkages)<br><br>Structures – Shell structures                                           | Food<br><br>Electrical systems (series, circuits and bulbs) and link to British inventor<br><br>Structures (frame)               | Textiles<br><br>Structures – Moving Toys with Cam mechanism<br><br>Gears and Pulleys                                                             | Food<br><br>Electrical systems (including switches, buzzers and motors)<br><br>Structures                                                                                       |
| <b>Design</b>     | Design a product through drawings and discussion using a design criteria | Design purposeful, appealing products for themselves through drawing, pictures and words following a design criteria.                                                           | Design purposeful, functional, appealing products for themselves and other users based on a design criteria.                                                                           | Use research to inform the design of functional, appealing products that are fit for purpose.                                                | Use research to inform the design of innovative, functional, appealing products that are fit for purpose.                        | Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.            | Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups |
|                   |                                                                          | Generate ideas and communicate their ideas through talking and simple drawings.<br><br>Work in a range of contexts (imaginary, home, school, wider community, and story based). | Develop, model and communicate their ideas through templates and mock-ups.<br><br>Work confidently in a range of contexts (imaginary, home, school, wider community, and story based). | Generate their ideas through discussion and an accurately labelled design and in words.                                                      | Generate more than one idea and develop their ideas through discussion, annotated sketches, designs, in words and prototypes.    | Generate and model their ideas through discussion, annotated sketches, cross-sectional diagrams, and pattern pieces (Textiles Only).             | Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, and prototypes.                             |
| <b>Vocabulary</b> | Learning before create work                                              | Design ideas plan product materials equipment                                                                                                                                   | Design criteria draw label investigate materials equipment product                                                                                                                     | Design criteria investigate research draw label annotate user purpose                                                                        | Design purpose annotated sketches prototypes user product investigate research                                                   | Design criteria decisions annotated sketches cross sectional pattern pieces mock up                                                              | Design criteria decisions annotated sketches cross sectional design exploded diagrams prototypes mock ups innovation                                                            |
| <b>Make</b>       | Make a product and share their ideas, resources and skills.              | Select from and use a range of given tools and equipment found in the classroom to perform practical tasks [for example, cutting, shaping, joining and finishing].              | Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].                                                  | Use a wider range of tools and equipment to perform practical tasks; making cuts (scissors, snips, saw) and holes (punch, drill) accurately. | Use a wider range of tools and equipment to perform practical tasks eg using scales to weigh food, or making a product that uses | Select from and use a wider range of tools and equipment to perform practical tasks accurately (for example stitching, plaiting, weaving, making | Select from and use a wider range of tools and equipment to perform practical tasks [measuring ingredients in ml and g, measuring in mm, cutting and making holes,              |

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|                            |                                                                                                                                 | cutting, shaping, joining and finishing].                                                                                                             |                                                                                                                                                                                  |                                                                                                               | both electrical and mechanical components.                                                                                                                 | holes and combining mechanical components).                                                                                                                                   | shaping, joining and finishing], accurately.                                                                                                                                                              |
|                            | Safely use and explore a variety of materials, tools techniques, experimenting with colour, design, texture, form and function. | Select from and use a wide range of given materials and components, including construction materials and textiles according to their characteristics. | Select from and use a range of materials and components given to meet the design criteria, including construction materials and ingredients, according to their characteristics. | Select from and use a wider range of materials and components, including construction materials and textiles. | Select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties. | Select from and use a wider range of materials and components, including textiles and mechanical components according to their functional properties and aesthetic qualities. | Select from and use a wider range of materials and components, including construction materials, electrical components and ingredients, according to their functional properties and aesthetic qualities. |
|                            | Use a range of small tools, including scissors and paint brushes.                                                               | Explain what is being made and why.                                                                                                                   | Explain what is being made and why the audience will like it.                                                                                                                    |                                                                                                               |                                                                                                                                                            | Investigate and analyse a range of existing products including carrying out surveys and questionnaires                                                                        | Use a range of information to inform a design (i.e. market research using surveys, interviews, questionnaires or web-based resources).                                                                    |
| <b>Vocabulary</b>          | Materials scissors equipment task cards                                                                                         | Materials scissors join stick glue strong equipment needles                                                                                           |                                                                                                                                                                                  |                                                                                                               |                                                                                                                                                            |                                                                                                                                                                               |                                                                                                                                                                                                           |
| <b>Evaluate</b>            | Return to and build on previous learning, refining ideas and developing their ability to represent them.                        | Explore a range of existing products saying what they like or do not like about them.                                                                 | Evaluate a range of existing products.                                                                                                                                           | Investigate a range of existing products.                                                                     | Investigate and compare 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.                                                   | Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work and make said changes.                                                         |
|                            |                                                                                                                                 | Evaluate their own ideas and products to suit a purpose.                                                                                              | Evaluate their ideas and products against design criteria.                                                                                                                       | Evaluate their ideas and products against their own criteria.                                                 | Evaluate their ideas and products against their own design criteria and consider improvements.                                                             | Understand how key events and individuals in design and technology have an impact in the UK.                                                                                  | Understand how key events and individuals in design and technology have helped shape the world.                                                                                                           |
|                            |                                                                                                                                 |                                                                                                                                                       |                                                                                                                                                                                  | Know a British inventor and the invention they produced.                                                      | Know a British inventor, the invention they produced and the impact it had.                                                                                | Know a range of inventors, the invention they produced and the impact it had.                                                                                                 | Know a range of inventors, the invention they produced and the impact it had.                                                                                                                             |
| <b>Vocabulary</b>          | Share follow explain make better                                                                                                | Evaluate make better                                                                                                                                  | Evaluate review change                                                                                                                                                           | Evaluate review improve                                                                                       | Evaluate review improve                                                                                                                                    | Evaluate review                                                                                                                                                               |                                                                                                                                                                                                           |
| <b>Technical Knowledge</b> |                                                                                                                                 | Build structures, exploring how they can be made stronger, stiffer and more stable.                                                                   | Build structures, exploring how they can be made stronger, stiffer and more stable.                                                                                              |                                                                                                               | Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.                                                             |                                                                                                                                                                               | Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.                                                                                                            |
|                            |                                                                                                                                 | Explore and use mechanisms [for example wheels and axles] in their products.                                                                          | Explore and use mechanisms [for example levers and sliders] in their products.                                                                                                   | Understand and use mechanical systems in their products [for example levers and linkages].                    |                                                                                                                                                            | Understand and use mechanical systems in their products [gears and cams].                                                                                                     |                                                                                                                                                                                                           |
|                            |                                                                                                                                 |                                                                                                                                                       |                                                                                                                                                                                  |                                                                                                               | Use electrical systems in their products [series circuits incorporating switches, bulbs, buzzers and motors].                                              |                                                                                                                                                                               | Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].                                                                 |
|                            |                                                                                                                                 |                                                                                                                                                       |                                                                                                                                                                                  | In textiles, combine materials to strengthen or add visual appeal.                                            |                                                                                                                                                            | In textiles understands how to make structural changes including weaving or plaiting to make new products.                                                                    |                                                                                                                                                                                                           |
|                            |                                                                                                                                 |                                                                                                                                                       |                                                                                                                                                                                  |                                                                                                               |                                                                                                                                                            | Pin and tack fabrics, use patterns and join fabrics to make quality products.                                                                                                 |                                                                                                                                                                                                           |

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| <b>Vocabulary</b> |  | wheel, axle, axle holder, chassis, moving, fixed free, body, cab<br><br>strong, stand up, cut fold join fix | Slider, lever, pivot, slot, guide, join, pull, push<br><br>Stable secure strong stiffen              | mechanism, lever, linkage, pivot, guide system, linear, rotary<br><br>fabric (name fabric used), sew, stitch, running stitch, secure, tighten, seam, decorate, strengthen, visual appeal decorate | Strengthen, stiffen, reinforce, join<br><br>series circuit, fault, connection, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clips                           | 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,<br><br>pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, cam | bulb, bulb holder, wire, insulator, doorbell, buzzer, circuit wires batteries, conductor crocodile clip, motors                                                                                                                                                                                                                                                                                                    |
|                   |  |                                                                                                             |                                                                                                      | Strengthen, stiffen, reinforce, join, secure stiffen, join, accuracy, material, marking out, scoring, assemble, adhesives                                                                         |                                                                                                                                                                                                  | frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Cooking</b>    |  |                                                                                                             | Use the basic principles of a healthy and varied diet to prepare dishes.                             |                                                                                                                                                                                                   | Understand the principles of a healthy and varied diet.                                                                                                                                          |                                                                                                                                                                                                                                                                                            | Understand and apply the principles of a healthy and varied diet.                                                                                                                                                                                                                                                                                                                                                  |
|                   |  |                                                                                                             | Understand where food comes from.                                                                    |                                                                                                                                                                                                   | Prepare and cook some savoury dishes using simple techniques eg boiling (soups) and frying (pancakes/omelettes etc).                                                                             |                                                                                                                                                                                                                                                                                            | Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.                                                                                                                                                                                                                                                                                                                    |
|                   |  |                                                                                                             |                                                                                                      |                                                                                                                                                                                                   | Know how to change the nature of a raw ingredient through cooking or chilling.                                                                                                                   |                                                                                                                                                                                                                                                                                            | Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.                                                                                                                                                                                                                                                                                                   |
|                   |  |                                                                                                             |                                                                                                      |                                                                                                                                                                                                   |                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                            | Understands food preparation and how to use cooking to alter the flavour and texture of foods. Knows raw foods are not always safe.                                                                                                                                                                                                                                                                                |
| <b>Vocabulary</b> |  |                                                                                                             | Peel chop knife skewer<br>Ingredients peel core slice<br><br>Healthy unhealthy<br>Prepare wash clean |                                                                                                                                                                                                   | Cook fry boil assemble<br>Spread fold ingredients<br>chill bake utensils frozen<br>fresh savory, flavour, stir, mix weigh out<br><br>Healthy unhealthy varied<br>balanced clean wash<br>hygienic |                                                                                                                                                                                                                                                                                            | Boil, simmer cook fry bake, peel, chop, slice, fold, pour stir weigh ojut<br>fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, sour, Flavour, herbs, spices, salt, pepper, bland, utensils, Intolerance, raw,<br><br>Hygiene, wash , clean, utensils, ingredients<br><br>Seasons grown reared caught processed tinned fresh frozen |