



## Knowledge, Skills and Vocabulary Progression (KSV) DESIGN TECHNOLOGY

**Teaching and Learning area**

**DESIGN TECHNOLOGY**

**What should an age-related pupil know and be able to do in each year group?**

**Bold-Fundamental Knowledge**  
**Highlight - Cross curricular link**

**EYFS**

**Year 1**

**Year 2**

**Year 3**

**Year 4**

**Year 5**

**Year 6**

**Design**

**Articulate their thoughts and ideas in well-formed sentences (design decisions, purpose, user)**

Manage their own ideas (design decisions)

**Be able to state what products they are designing and making (functionality)**

**Say who their products are to be used by (user)**

Describe what their products are for (purpose)

Develop and communicate ideas by talking and drawing (design decisions)

Begin to model ideas using pictures and words to plan (design decisions)

Use broad design criteria to help

**Be able to state what products they are designing and making (functionality)**

**Say how they will make their products suitable for their intended users (user, authenticity)**

Describe what their products are for and how they will work (purpose, functionality)

Generate ideas by drawing on their own experiences and using knowledge of existing and similar products (design decisions)

Use simple design criteria to help develop their ideas (innovation)

**Begin to gather information about the needs and wants of particular individuals and groups (user)**

**Describe the purpose of their products (purpose)**

Identify how particular parts of their products work (functionality)

Use design criteria to help develop their ideas (innovation)

Share and clarify ideas through discussion (design decisions)

Begin to model their ideas using prototypes (innovation)

**Use gathered information and research to begin developing their own design criteria (user, innovation)**

**To inform realistic design ideas that show how design meets a range of requirements and is fit for purpose (user, purpose, functionality, authenticity)**

Make design decisions that take account of the availability of resources (design decisions)

Explain how particular parts of their products work (functionality)

**Begin to carry out research, using surveys, interviews, questionnaires and web-based resources for research and design ideas (user, purpose, innovation)**

**Identify the needs, wants, preferences and values of particular individuals and groups (user)**

Develop their own design criteria and use these to inform their ideas (user, innovation, design decisions)

**Use market research to inform realistic design ideas (user, purpose, design decisions)**

**Use user research to ensure product is user specific and fit for purpose (user)**

Generate innovative ideas, drawing on research (6 principles)

Develop their own design criteria and a simple design specification to guide their thinking (design decisions)

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|                   |                                                                                                                                  | develop their ideas (innovation)                                                                                                                             | Model ideas by exploring materials, components and construction kits and by making templates and/or mockups (design decisions, authenticity)<br><br>Begin to use information and communication technology, where appropriate, to develop and communicate their ideas | Begin to use annotated sketches to develop and communicate their ideas (design decisions)                                                                                                            | Share and clarify ideas through discussion suggesting improvements for design (design decisions)<br><br>Model their ideas using prototypes (innovation)<br><br>Use annotated sketches to develop and communicate their ideas (design decisions)<br><br>Begin to use computer-aided design to develop and communicate their ideas | Begin to make design decisions, taking account of constraints such as time, resources and cost (design decisions)<br><br>Use detailed annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas (design decisions)<br><br>Model their ideas using prototypes and pattern pieces (innovations) | Make design decisions, taking account of constraints such as time, resources and cost (design decisions)<br><br>Use detailed annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas (design decisions)<br><br>Independently model and refine their ideas using prototypes and pattern pieces (innovations)<br><br>Use computer-aided design |
| <b>Vocabulary</b> | 6 Design Principles, Make                                                                                                        | Design criteria +EYFS                                                                                                                                        | Template +Y1                                                                                                                                                                                                                                                         | Annotation +Y2                                                                                                                                                                                       | Fit for purpose +Y3                                                                                                                                                                                                                                                                                                              | Prototype +Y4                                                                                                                                                                                                                                                                                                                                 | Adapt +Y6                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Make</b>       | <b>Select and use resources with help to complete activities</b><br><br><b>Begin to build independently with given resources</b> | Consider and suggest what they need to do next<br><br><b>Select from a range of tools and equipment to cut, shape, join and finish products with support</b> | Plan by suggesting what to do next<br><br><b>Select tools and equipment to measure, mark out, cut and shape materials and components</b>                                                                                                                             | <b>Select tools and equipment suitable for the task; begin to use them accurately</b><br><br>Explain their choice of tools and equipment in relation to the skills and techniques they will be using | <b>Select suitable tools and equipment and use accurately</b><br><br>Order the main stages of making<br><br>Explain their choice of materials and components                                                                                                                                                                     | <b>Use selected tools and equipment with a good level of precision</b><br><br>Produce appropriate lists of tools, equipment and materials that they need                                                                                                                                                                                      | <b>Use selected tools and equipment with precision</b><br><br>Produce appropriate lists of tools, equipment and materials that they need                                                                                                                                                                                                                                                       |

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|  | <p><b>Explore different materials and tools</b></p> <p><b>Use one-handed tools and equipment e.g. scissors</b></p> <p><b>Combine different shapes to make new ones</b></p> | <p>Explain their choices of equipment</p> <p><b>Measure, mark out, cut and shape materials and components with support</b></p> <p>Follow procedures for safety and hygiene</p> | <p>Explain their choices of equipment and give reasons why</p> <p><b>Assemble, join and combine materials and components in different ways with support</b></p> <p>Use finishing techniques to finish a product off</p> <p>Follow procedures for safety and hygiene</p> | <p><b>Select materials and components suitable for the task from a wider range of resources than in KS1</b></p> <p><b>Begin to measure, mark out, cut and shape materials and components with accuracy</b></p> <p><b>Begin to assemble, join and combine materials and components in different ways with accuracy</b></p> <p>Begin to use finishing techniques to finish a product off with some accuracy</p> <p>Follow procedures for safety and hygiene</p> | <p>according to functional properties</p> <p><b>Measure, mark out, cut and shape materials and components with some accuracy</b></p> <p><b>Assemble, join and combine materials and components with some accuracy</b></p> <p>Apply a range of finishing techniques, including those from art and design, with some accuracy</p> <p>Begin to formulate procedures for safety and hygiene</p> | <p>Explain their choice of materials and components according to functional properties and aesthetic qualities</p> <p><b>With greater accuracy measure, mark out, cut and shape materials and components</b></p> <p><b>With greater accuracy accurately assemble, join and combine materials and components</b></p> <p>With greater accuracy apply a range of finishing techniques, including those from art and design</p> <p>Begin to demonstrate resourcefulness when tackling practical problems</p> <p>Formulate procedures for safety and hygiene</p> | <p>Explain their choice of materials and components according to functional properties and aesthetic qualities</p> <p>Formulate step-by-step plans as a guide to making</p> <p><b>Accurately measure, mark out, cut and shape materials and components</b></p> <p><b>Accurately assemble, join and combine materials and components</b></p> <p>Accurately apply a range of finishing techniques, including those from art and design</p> <p>Demonstrate resourcefulness when tackling practical problems</p> <p>Explain in detail how their product will be fit for purpose; make changes to improve</p> |
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| <b>Vocabulary</b> | Names of tools e.g. scissors, holepunch. names of materials e.g. string, sellotape, glue, masking tape                                                                                                                                          | Cutting, joining, finishing, moving, chopping, slicing, constructing +EYS                                                                                                                                                                                                                                                                                                | Measuring, marking out, shaping +Y1                                                                                                                                                                                                                                                                                                     | Combinations, variety, assembling, reinforcing +Y2                                                                                                                                                                                                                                                                                                                                                                                                                              | Testing +Y3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Seasonal, reinforcing +Y4                                                                                                                                                                                                                                                                                                                                                                                                                        | Techniques +Y5                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Evaluate</b>   | <p>Ask questions to find out more and understand what has been said by them</p> <p><b>Talk about how things work</b></p> <p><b>Say what they like and do not like</b></p> <p>Explain the process used and discuss how to make improvements.</p> | <p>Talk about their design ideas and products making links to what has been asked</p> <p><b>Talk about existing products and say what is and isn't good</b></p> <p><b>Begin to talk about other people's work and make simple judgements about their products and ideas against design criteria</b></p> <p>Begin to make simple suggestions on areas for improvement</p> | <p><b>Begin to acknowledge what went well and what could have been better in relation to the design criteria</b></p> <p><b>Talk about existing products and consider their functionality and fit for purpose</b></p> <p>Make simple suggestions on areas for improvement and give reasons why for their work and the work of others</p> | <p>Begin to look at design criteria whilst designing and making</p> <p><b>Begin to use design criteria to evaluate finished product</b></p> <p><b>Begin to evaluate existing products considering: materials, finishing and fit for purpose</b></p> <p>Begin to identify the strengths and areas for development in their ideas and products</p> <p><b>Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</b></p> | <p>Refer to design criteria whilst designing and making</p> <p><b>Use design criteria to evaluate finished product</b></p> <p><b>Evaluate existing products considering: materials, finishing and fit for purpose</b></p> <p>Identify the strengths and areas for development in their ideas and products</p> <p><b>Consider the views of others, including intended users, to improve their work</b></p> <p><b>Know about inventors, designers, engineers, chefs and manufacturers</b></p> | <p>Begin to evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</p> <p><b>Use design criteria to evaluate finished product and begin to use when testing the product</b></p> <p><b>Evaluate and discuss existing products considering: materials, finishing and fit for purpose</b></p> <p><b>Begin to evaluate how much products cost to make and how innovative they are</b></p> | <p>Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</p> <p><b>Use design criteria to evaluate finished product as well as when testing the product</b></p> <p>Test products to evaluate their fitness for purpose; explain what would improve it and the effect different resources may have had on the outcome</p> <p><b>Thoroughly evaluate and discuss existing</b></p> |

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|                            |                                                                                                                        |                                                                                                                                      |                                                                                                                                               |                                                                                                                                                               | who have developed ground-breaking products                                                                                                                | Compare inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products                              | products considering: materials, finishing and fit for purpose<br><br>Evaluate how much products cost to make and how innovative they are<br><br>Consider the impact of products beyond their intended purpose<br><br>Discuss inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products |
| <b>Vocabulary</b>          | Like, dislike, better.                                                                                                 | Good, not good, change, because +EYFS                                                                                                | Improve +Y1                                                                                                                                   | Strengths, weaknesses +Y2                                                                                                                                     | Needs of the user +Y3                                                                                                                                      | Justify decisions +Y4                                                                                                                     | Inventors, designers, engineers, chefs, manufacturers +Y5                                                                                                                                                                                                                                                                          |
| <b>Technical Knowledge</b> | <b>Learn new vocabulary</b><br><br>Talk about and explore 2-D and 3-D shapes<br><br>Beginning to explore the different | Begin to understand the simple working characteristics of materials and components<br><br><b>Begin to understand the movement of</b> | Understand the simple working characteristics of materials and components<br><br><b>Begin to understand the movement of simple mechanisms</b> | Understand the working characteristics of materials and components as well as their uniqueness<br><br>Begin to understand that materials have both functional | Begin to understand that materials can be combined and mixed to create more useful characteristics<br><br><b>Begin to understand how simple electrical</b> | Understand that materials can be combined and mixed to create more useful characteristics<br><br><b>Understand that as well as levers</b> | Understand that materials can be combined and mixed to create more useful characteristics with differing outcomes                                                                                                                                                                                                                  |

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|  | <p>characteristics of materials.</p> | <p><b>simple mechanisms such as sliders</b></p> <p><b>Begin to understand how freestanding structures can be made stronger, stiffer and more stable</b></p> <p><b>Describe differences between food ingredients</b></p> <p>Use the correct technical vocabulary for the projects they are undertaking</p> | <p><b>such as wheels and axles</b></p> <p><b>Begin to understand that a 3-D textiles product can be assembled from two identical fabric shapes</b></p> <p><b>Acknowledge that food ingredients should be combined according to their sensory characteristics</b></p> <p>Use the correct technical vocabulary for the projects they are undertaking</p> | <p>properties and aesthetic qualities</p> <p><b>Begin to understand how mechanical systems such as levers create movement</b></p> <p><b>Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</b></p> <p>Use the correct technical vocabulary for the projects they are undertaking</p> <p><b>Begin to understand how to use learning from other curriculum subjects e.g. maths and science, to help design and make products that work</b></p> | <p><b>circuits and components can be used to create functional products</b></p> <p><b>Begin to understand that a single fabric shape can be used to make a 3D textiles product</b></p> <p><b>Acknowledge that food ingredients can be fresh, pre-cooked and processed</b></p> <p>Use the correct technical vocabulary for the projects they are undertaking</p> <p><b>Continue to build on understanding how to use learning from other curriculum subjects e.g. maths and science, to help design and make products that work</b></p> | <p><b>and linkages mechanical systems such as pulleys or gears also create movement</b></p> <p><b>Acknowledge that food is seasonal</b></p> <p><b>Explain the importance of food and drink as part of a healthy lifestyle</b></p> <p>With a degree of accuracy use the correct technical vocabulary for the projects they are undertaking</p> <p><b>To begin to independently use learning from other curriculum subjects e.g. maths and science, to help design and make products that work</b></p> | <p><b>Understand how more complex electrical circuits and components can be used to create functional products</b></p> <p><b>Understand how to reinforce and strengthen a 3D framework</b></p> <p><b>Understand that a 3D textiles product can be made from a combination of fabric shapes and types</b></p> <p><b>Acknowledge that a recipe can be adapted by adding or substituting one or more ingredients</b></p> <p>Accurately use the correct technical vocabulary for the projects they are undertaking</p> <p><b>To independently use learning from other curriculum subjects e.g. maths and science, to</b></p> |
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|                   |                                              |                              |                |                                       |                                 |              | help design and<br>make products<br>that work |
| <b>Vocabulary</b> | Project specific<br>vocabulary, 2-D, 3-<br>D | Movement, structure<br>+EYFS | Mechanisms +Y1 | Measure, Grown,<br>Reared, Caught +Y2 | Fresh, Cooked,<br>Processed +Y3 | Seasonal +Y4 | Substitute +Y5                                |