



# DT Progression Map



## Early Years Foundation stage

### Physical Development – Fine motor skills

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, paint brushes and cutlery;  
Begin to show accuracy and care when drawing.

### 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.

## National Curriculum KS1

Pupils should be taught about:

Design:

- Design purposeful, functional, appealing products for themselves and other users 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 e.g. cutting, shaping, joining and finishing.
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, 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, stiffer and more stable.
- Explore and use mechanisms e.g. 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.

## National Curriculum KS2

Pupils should be taught about:

Design:

- 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, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Make:

- Select from and use a wider range of tools and equipment to perform practical tasks e.g. 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 e.g. gears, pulleys, cams, levers and linkages.
- Understand and use electrical systems in their products e.g. series circuits incorporating switches, 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.

KS1 – Year1/Year 2

LKS2 - Year 3/Year 4

UKS2 - Year 5/Year 6

## Designing

### Understanding contexts, users and purposes

Across KS1 pupils should:

- work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment
- state what products they are designing and making
- say whether their products are for themselves or other users
- describe what their products are for
- say how their products will work
- say how they will make their products suitable for their intended users
- use simple design criteria to help develop their ideas

- Across all KS2 pupils should:

- work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment
- describe the purpose of their products
- indicate the design features of their products that will appeal to intended users
- explain how particular parts of their products work

In LKS2 pupils should also:

- gather information about the needs and wants of particular individuals and groups
- develop their own design criteria and use these to inform their ideas

Across KS2 pupils should:

- work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment
- describe the purpose of their products
- indicate the design features of their products that will appeal to intended users
- explain how particular parts of their products work

In UKS2 pupils should also:

- carry out research, using surveys, interviews, questionnaires and web-based resources
- identify the needs, wants, preferences and values of particular individuals and groups
- develop a simple design specification to guide their thinking

### Generating, developing, modelling and communicating ideas

Across KS1 pupils should:

- generate ideas by drawing on their own experiences
- use knowledge of existing products to help come up with ideas
- develop and communicate ideas by talking and drawing
- model ideas by exploring materials, components and construction kits and by making templates and mock-ups
- use information and communication technology, where appropriate, to develop and communicate their ideas

Across KS2 pupils should:

- share and clarify ideas through discussion
- model their ideas using prototypes and pattern pieces
- use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas
- use computer-aided design to develop and communicate their ideas

Across KS2 pupils should:

- share and clarify ideas through discussion
- model their ideas using prototypes and pattern pieces
- use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas
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	<p><i>In LKS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• generate realistic ideas, focusing on the needs of the user</li> <li>• make design decisions that take account of the availability of resources</li> </ul>	<p><i>In UKS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• generate innovative ideas, drawing on research</li> <li>• make design decisions, taking account of constraints such as time, resources and cost</li> </ul>
<b>Making</b>		
<b>Planning</b>		
<p><i>Across KS1 pupils should:</i></p> <ul style="list-style-type: none"> <li>• plan by suggesting what to do next</li> <li>• select from a range of tools and equipment, explaining their choices</li> <li>• select from a range of materials and components according to their characteristics</li> </ul>	<p><i>Across KS2 pupils should:</i></p> <ul style="list-style-type: none"> <li>• select tools and equipment suitable for the task</li> <li>• explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>• select materials and components suitable for the task</li> <li>• explain their choice of materials and components according to functional properties and aesthetic qualities</li> </ul> <p><i>In LKS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• order the main stages of making</li> </ul>	<p><i>Across KS2 pupils should:</i></p> <ul style="list-style-type: none"> <li>• select tools and equipment suitable for the task</li> <li>• explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>• select materials and components suitable for the task</li> <li>• explain their choice of materials and components according to functional properties and aesthetic qualities</li> </ul> <p><i>In UKS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• produce appropriate lists of tools, equipment and materials that they need</li> <li>• formulate step-by-step plans as a guide to making</li> </ul>
<b>Practical skills and techniques</b>		
<p><i>Across KS1 pupils should:</i></p> <ul style="list-style-type: none"> <li>• follow procedures for safety and hygiene</li> <li>• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components</li> <li>• measure, mark out, cut and shape materials and components</li> <li>• assemble, join and combine materials and components</li> <li>• use finishing techniques, including those from art and design</li> </ul>	<p><i>Across KS2 pupils should:</i></p> <ul style="list-style-type: none"> <li>• follow procedures for safety and hygiene</li> <li>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> </ul> <p><i>In LKS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• measure, mark out, cut and shape materials and components with some accuracy</li> <li>• assemble, join and combine materials and components with some accuracy</li> <li>• apply a range of finishing techniques, including those from art and design, with some accuracy</li> </ul>	<p><i>Across KS2 pupils should:</i></p> <ul style="list-style-type: none"> <li>• follow procedures for safety and hygiene</li> <li>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> </ul> <p><i>In UKS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• accurately measure, mark out, cut and shape materials and components</li> <li>• accurately assemble, join and combine materials and components</li> <li>• accurately apply a range of finishing techniques, including those from art and design</li> <li>• use techniques that involve a number of steps</li> <li>• demonstrate resourcefulness when tackling practical problems</li> </ul>
<b>Evaluating</b>		
<b>Own ideas and products</b>		
<p><i>Across KS1 pupils should:</i></p> <ul style="list-style-type: none"> <li>• talk about their design ideas and what they are making</li> <li>• make simple judgements about their products and ideas against design criteria</li> <li>• suggest how their products could be improved</li> </ul>	<p><i>Across KS2 pupils should:</i></p> <ul style="list-style-type: none"> <li>• identify the strengths and areas for development in their ideas and products</li> <li>• consider the views of others, including intended users, to improve their work</li> </ul> <p><i>In early KS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• refer to their design criteria as they design and make</li> <li>• use their design criteria to evaluate their completed products</li> </ul>	<p><i>Across KS2 pupils should:</i></p> <ul style="list-style-type: none"> <li>• identify the strengths and areas for development in their ideas and products</li> <li>• consider the views of others, including intended users, to improve their work</li> </ul> <p><i>In late KS2 pupils should also:</i></p> <ul style="list-style-type: none"> <li>• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</li> <li>• evaluate their ideas and products against their original design specification</li> </ul>
<b>Existing products</b>		
<p><i>Across KS1 pupils should explore:</i></p> <ul style="list-style-type: none"> <li>• what products are</li> <li>• who products are for</li> <li>• what products are for</li> <li>• how products work</li> <li>• how products are used</li> <li>• where products might be used</li> <li>• what materials products are made from</li> <li>• what they like and dislike about products</li> </ul>	<p><i>Across KS2 pupils should investigate and analyse:</i></p> <ul style="list-style-type: none"> <li>• how well products have been designed</li> <li>• how well products have been made</li> <li>• why materials have been chosen</li> <li>• what methods of construction have been used</li> <li>• how well products work</li> <li>• how well products achieve their purposes</li> <li>• how well products meet user needs and wants</li> </ul> <p><i>In LKS2 pupils should also investigate and analyse:</i></p> <ul style="list-style-type: none"> <li>• who designed and made the products</li> <li>• where products were designed and made</li> <li>• when products were designed and made</li> <li>• whether products can be recycled or reused</li> </ul>	<p><i>Across KS2 pupils should investigate and analyse:</i></p> <ul style="list-style-type: none"> <li>• how well products have been designed</li> <li>• how well products have been made</li> <li>• why materials have been chosen</li> <li>• what methods of construction have been used</li> <li>• how well products work</li> <li>• how well products achieve their purposes</li> <li>• how well products meet user needs and wants</li> </ul> <p><i>In UKS2 pupils should also investigate and analyse:</i></p> <ul style="list-style-type: none"> <li>• how much products cost to make</li> <li>• how innovative products are</li> <li>• how sustainable the materials in products are</li> <li>• what impact products have beyond their intended purpose</li> </ul>
<b>Key events and individuals</b>		
<p>Not a requirement in KS1</p>	<p><i>Across KS2 pupils should know:</i></p> <ul style="list-style-type: none"> <li>• about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products</li> </ul>	<p><i>Across KS2 pupils should know:</i></p> <ul style="list-style-type: none"> <li>• about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking product</li> </ul>



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<b>Technical Knowledge</b>		
<b>Key events and individuals</b>		
<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> <li>about the simple working characteristics of materials and components</li> <li>about the movement of simple mechanisms such as levers, sliders, wheels and axles</li> <li>how freestanding structures can be made stronger, stiffer and more stable</li> <li>that a 3-D textiles product can be assembled from two identical fabric shapes</li> <li>that food ingredients should be combined according to their sensory characteristics</li> <li>the correct technical vocabulary for the projects they are undertaking</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>how to use learning from science to help design and make products that work</li> <li>how to use learning from mathematics to help design and make products that work</li> <li>that materials have both functional properties and aesthetic qualities</li> <li>that materials can be combined and mixed to create more useful characteristics</li> <li>that mechanical and electrical systems have an input, process and output</li> <li>the correct technical vocabulary for the projects they are undertaking</li> </ul> <p>In LKS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>how mechanical systems such as levers and linkages or pneumatic systems create movement</li> <li>how simple electrical circuits and components can be used to create functional products</li> <li>how to program a computer to control their products</li> <li>how to make strong, stiff shell structures</li> <li>that a single fabric shape can be used to make a 3D textiles product</li> <li>that food ingredients can be fresh, pre-cooked and processed</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>how to use learning from science to help design and make products that work</li> <li>how to use learning from mathematics to help design and make products that work</li> <li>that materials have both functional properties and aesthetic qualities</li> <li>that materials can be combined and mixed to create more useful characteristics</li> <li>that mechanical and electrical systems have an input, process and output</li> <li>the correct technical vocabulary for the projects they are undertaking</li> </ul> <p>In UKS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>how mechanical systems such as cams or pulleys or gears create movement</li> <li>how more complex electrical circuits and components can be used to create functional products</li> <li>how to program a computer to monitor changes in the environment and control their products</li> <li>how to reinforce and strengthen a 3D framework</li> <li>that a 3D textiles product can be made from a combination of fabric shapes</li> <li>that a recipe can be adapted by adding or substituting one or more ingredients</li> </ul>
<b>Cooking and Nutrition</b>		
<b>Where food comes from</b>		
<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> <li>that all food comes from plants or animals</li> <li>that food has to be farmed, grown elsewhere (e.g. home) or caught</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>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</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>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</li> </ul> <p>In UKS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>that seasons may affect the food available</li> <li>how food is processed into ingredients that can be eaten or used in cooking</li> </ul>
<b>Food preparation, cooking and nutrition</b>		
<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> <li>how to name and sort foods into the five groups in The Eatwell Guide</li> <li>that everyone should eat at least five portions of fruit and vegetables every day</li> <li>how to prepare simple dishes safely and hygienically, without using a heat source</li> <li>how to use techniques such as cutting, peeling and grating</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> </ul> <p>In LKS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Guide</li> <li>that to be active and healthy, food and drink are needed to provide energy for the body</li> </ul>	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> </ul> <p>In UKS2 pupils should also know:</p> <ul style="list-style-type: none"> <li>that recipes can be adapted to change the appearance, taste, texture and aroma</li> <li>that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</li> </ul>