



## Design and Technology



### EYFS Framework 2021

#### ELG: Creating with Materials

- Children at the expected level of development will:
- 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.~~

#### ELG: Fine Motor Skills

- Children at the expected level of development will: -
- ~~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.~~

### EYFS Progression of Knowledge and Skills

- I can demonstrate how to hold and use scissors safely.
- I can experiment with **materials** to find the most appropriate.
- I can select from a range of natural materials and explain my choice.
- I can experiment with **tools** until I achieve the desired outcome.
- I can test **materials** to suit a specific project.
- I can experiment with materials and explain the outcome.

**Vocabulary: (in addition to, and building on previous year- see also BOLD items above)**  
Safety, natural

### KS 1 National Curriculum

#### DT1/1.2 Make

DT1/1.2a select from and use a range of tools and equipment to perform practical tasks

DT1/1.2b select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

#### DT1/1.3 Evaluate

DT1/1.3a explore and evaluate a range of existing products

DT1/1.3b evaluate their ideas and products against design criteria

#### DT1/1.4 Technical Knowledge

DT1/1.4a build structures, exploring how they can be made stronger, stiffer and more stable

DT1/1.4b explore and use mechanisms, in their products.

#### DT1/2.1 Cooking & Nutrition

DT1/2.1a use the basic principles of a healthy and varied diet to prepare dishes

DT1/2.1b understand where food comes from.

### KS 1 Ready to Progress Criteria

(‘Teaching a Broad and Balanced Curriculum for Educational Recovery’, June 2021)

#### At key stages 1 and 2, teachers should prioritise:

- Developing pupils’ ability to **design** by, first, providing them with **knowledge of materials, equipment and tools** to support their application of concepts such as ‘**functionality**’ and ‘**aesthetics**’. Activities to consolidate and embed this knowledge can be low cost, for example, asking pupils to **evaluate a range of similar products** (such as toothbrushes, toys, cutlery, t-shirts, or school bags).
- Encouraging pupils to work with a range of simple **materials**, including **textiles** and **ingredients**, emphasising the



design process rather than simply the end product. Where practicable, pupils should be introduced to **simple tools** and their **safe use** to meet an identified need.

### Year 1 Progression of Knowledge and Skills

<p>Developing planning and communicating ideas</p>	<ul style="list-style-type: none"> <li>• Begin to draw on their own experience to help generate ideas and research conducted on criteria.</li> <li>• <b>Begin to understand the development of existing products: What they are for, how they work, materials used.</b></li> <li>• Start to suggest ideas and explain what they are going to do.</li> <li>• Understand how to identify a target group for what they intend to <b>design</b> and make based on a design <b>criteria</b>.</li> <li>• <b>Begin to develop their ideas through talk and drawings.</b> Make <b>templates</b> and mock ups of their ideas in card and paper or using ICT.</li> <li>• Make links to properties of <b>materials</b> in science to consider if certain materials are appropriate</li> </ul>
<p>Working with tools, equipment, materials and components to make quality products</p>	<ul style="list-style-type: none"> <li>• Begin to build structures, exploring how they can be made stronger, stiffer and more stable.</li> <li>• <b>With help measure, mark out, cut and shape a range of materials.</b></li> <li>• <b>Explore using tools e.g. scissors and a hole punch safely.</b></li> <li>• Begin to assemble, <b>join</b> and combine materials and components together using a variety of temporary methods e.g. glues or masking tape.</li> <li>• Begin to use simple finishing techniques to improve the <b>appearance</b> of their product.</li> </ul>
<p>Evaluating processes and products</p>	<ul style="list-style-type: none"> <li>• <b>Start to evaluate their product by discussing how well it works in relation to the purpose.</b></li> <li>• When looking at existing products explain what they like and dislike about products and why.</li> <li>• <b>Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.</b></li> </ul>
<p>Food and Nutrition</p>	<ul style="list-style-type: none"> <li>• Begin to understand that all food comes from plants or animals.</li> <li>• Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught.</li> <li>• Start to understand how to sort foods and make healthy choices in 'The Eat well plate'</li> <li>• Begin to understand that everyone should eat at least five portions of <b>fruit</b> and <b>vegetables</b> every day.</li> <li>• <b>Know how to prepare simple dishes safely and hygienically, without using a heat source.</b></li> <li>• Know how to use techniques such as assembling.</li> </ul>

**Vocabulary: (in addition to, and building on previous year- see also BOLD items above)**

build, adapt, healthy, plan

### Year 2 Progression of Knowledge and Skills

<p>Developing planning and communicating ideas</p>	<ul style="list-style-type: none"> <li>• Generate ideas by drawing on their own and other people's experiences.</li> <li>• <b>Understand the development of existing products: What they are for, how they work, materials used.</b></li> <li>• Begin to develop their design ideas through <b>discussion, observation</b>, drawing and modelling.</li> <li>• Identify a purpose for what they intend to design and make.</li> <li>• Understand how to identify a target group for what they intend to design and make based on a design criteria.</li> <li>• <b>Develop their ideas through talk and drawings and label parts.</b></li> </ul>
<p>Working with tools, equipment, materials and components to make quality</p>	<ul style="list-style-type: none"> <li>• <b>Begin to select tools and materials; use correct vocabulary to name and describe them.</b></li> <li>• Build <b>structures</b>, exploring and reflecting (in written form) how they can be made stronger, stiffer and more stable.</li> <li>• With help measure, cut and score with some accuracy.</li> <li>• <b>Learn to use hand tools safely and appropriately.</b></li> <li>• <b>Start to assemble, join and combine materials in order to make a product.</b></li> </ul>



DT: National Curriculum and Progression of Knowledge and Skills



products	<ul style="list-style-type: none"> <li>• Demonstrate how to <b>cut, shape</b> and <b>join</b> fabric to make a simple <b>product</b>. Use basic sewing techniques.</li> <li>• Start to choose and use appropriate finishing techniques based on own ideas.</li> </ul>
Evaluating processes and products	<ul style="list-style-type: none"> <li>• Evaluate their work against design criteria.</li> <li>• Look at a range of existing products explain what they like and dislike about products and why.</li> <li>• <b>Start to evaluate their products as they are developed, identifying strengths and possible changes they might make.</b></li> <li>• With confidence talk about their ideas, saying what they like and dislike about them.</li> </ul>
Food and Nutrition	<ul style="list-style-type: none"> <li>• <b>Understand that all food comes from plants or animals.</b></li> <li>• Know that food has to be farmed, <b>grown</b> elsewhere (e.g. home) or caught.</li> <li>• <b>Understand how to name and sort foods into the five groups in 'The Eat well plate'</b></li> <li>• Recall that everyone should eat at least <b>five portions</b> of fruit and vegetables every day.</li> <li>• <b>Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source.</b></li> <li>• <b>Demonstrate how to use techniques such as cutting, peeling and grating.</b></li> </ul>
<p><b>Vocabulary: (in addition to, and building on previous year- see also BOLD items above)</b>  balanced diet, fabric, strength</p>	



### KS2 National Curriculum

#### DT2/1.1 Design

DT2/1.1a 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

DT2/1.1b generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

#### DT2/1.2 Make

DT2/1.2a select from and use a wider range of tools and equipment to perform practical tasks accurately

DT2/1.2b 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

#### DT2/1.3 Evaluate

DT2/1.3a investigate and analyse a range of existing products

DT2/1.3b evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

DT2/1.3c understand how key events and individuals in design and technology have helped shape the world

#### DT2/1.4 Technological Knowledge

DT2/1.4a apply their understanding of how to strengthen, stiffen and reinforce more complex structures

DT2/1.4b understand and use mechanical systems in their products

DT2/1.4c understand and use electrical systems in their products

DT2/1.4d apply their understanding of computing to programme, monitor and control their products.

#### DT2/2.1 Cooking & Nutrition

DT2/2.1a understand and apply the principles of a healthy and varied diet

DT2/2.1b cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet

DT2/2.1c become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]

DT2/2.1c understand the source, seasonality and characteristics of a broad range of ingredients

### KS 2 Ready to Progress Criteria

(‘Teaching a Broad and Balanced Curriculum for Educational Recovery’, June 2021)

#### At key stages 1 and 2, teachers should prioritise:

- Developing pupils’ ability to **design** by, first, providing them with **knowledge of materials, equipment and tools** to support their application of concepts such as **‘functionality’** and **‘aesthetics’**. Activities to consolidate and embed this knowledge can be low cost, for example, asking pupils to **evaluate a range of similar products** (such as toothbrushes, toys, cutlery, t-shirts, or school bags).
- Encouraging pupils to work with a range of simple **materials**, including **textiles** and **ingredients**, emphasising the **design process** rather than simply the end product. Where practicable, pupils should be introduced to **simple tools** and their **safe use** to meet an identified need.

### Year 3 Progression of Knowledge and Skills

Developing planning and communicating ideas

- With growing confidence generate ideas for an item, considering its purpose and the user/s.
- Start to order the main stages of making a product.
- Identify a purpose and establish criteria for a successful product.
- Understand how well products have been **designed, made, what materials have been used and the construction technique.**



	<ul style="list-style-type: none"> <li>Use ideas from existing <b>inventors, designers, engineers, chefs</b> and <b>manufacturers</b> – this may be through computer research</li> <li>Start to understand whether products can be recycled or reused.</li> <li>Know to make drawings with labels when designing.</li> <li><b>When planning explain their choice of materials for aesthetics.</b></li> </ul>
Working with tools, equipment, materials and components to make quality products	<ul style="list-style-type: none"> <li>Select a wider range of tools and techniques for making their product i.e. construction materials and kits, <b>textiles, food ingredients, mechanical components</b></li> <li><b>Understand their choice of tools and equipment in relation to the skills and techniques they will be using.</b></li> <li>Start to understand that mechanical systems such as axils</li> <li><b>Measure, mark out, cut, score</b> and assemble components with more accuracy.</li> <li><b>Start to work safely and accurately with a range of simple tools.</b></li> <li>Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.</li> <li><b>Start to measure, tape or pin, cut and join</b> fabric with some accuracy</li> </ul>
Evaluating processes and products	<ul style="list-style-type: none"> <li><b>Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose.</b></li> <li>Begin to disassemble and evaluate familiar products and consider the views of others to improve them.</li> <li>Evaluate the key designs of individuals in design and technology has helped shape the world.</li> </ul>
Food and Nutrition	<ul style="list-style-type: none"> <li>Start to know that food is <b>grown</b> (such as tomatoes, wheat and potatoes), <b>reared</b> (such as pigs, chickens and cattle) and <b>caught</b> (such as fish) in the UK, Europe and the wider world.</li> <li><b>Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</b></li> <li><b>Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</b></li> <li>Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'</li> <li><b>Begin to know that to be active and healthy, food and drink are needed to provide energy for the body.</b></li> </ul>

**Vocabulary: (in addition to, and building on previous year- see also BOLD items above)**

pizza, toppings, dough, rise

**Year 4 Progression of Knowledge and Skills**

Developing planning and communicating ideas	<ul style="list-style-type: none"> <li><b>Start to generate ideas, considering the purposes for which they are</b> designing – there may be links with Mathematics and Science.</li> <li>Confidently make <b>labelled</b> drawings from different views showing specific features.</li> <li>Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail.</li> <li>Identify the <b>strengths and areas for development</b> in their ideas and products.</li> <li><b>When planning consider the views of others, including intended users, to improve their work.</b></li> <li>Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</li> <li>Understand some materials may be more <b>sustainable</b> or have easier supply than others</li> <li><b>When planning explain their choice of materials and components</b> according to function and aesthetic.</li> </ul>
Working with tools,	<ul style="list-style-type: none"> <li><b>Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components.</b></li> </ul>



<p>equipment, materials and components to make quality products</p>	<ul style="list-style-type: none"> <li>• Understand their choice of tools and equipment in relation to the skills and techniques they will be using.</li> <li>• Start to understand that mechanical systems such as <b>axils</b></li> <li>• <b>Measure, mark out, cut, score</b> and <b>assemble components</b> with more accuracy.</li> <li>• <b>Start to work safely and accurately with a range of simple tools.</b></li> <li>• <b>Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.</b></li> <li>• Start to measure, tape or pin, cut and join fabric with some accuracy.</li> </ul>
<p>Evaluating processes and products</p>	<ul style="list-style-type: none"> <li>• <b>Evaluate their products carrying out appropriate tests.</b></li> <li>• <b>Start to evaluate their work during and at the end of the assignment.</b></li> <li>• Be able to <b>disassemble</b> and evaluate familiar products and consider the views of others to improve them.</li> <li>• Evaluate the key designsofindividualsin design and technology has helped shape the world.</li> </ul>
<p>Food and Nutrition</p>	<ul style="list-style-type: none"> <li>• Understand that food is <b>grown</b> (such as tomatoes, wheat and potatoes), <b>reared</b> (such as pigs, chickens and cattle) and <b>caught</b> (such as fish) in the UK, Europe and the wider world.</li> <li>• <b>Understand how to prepare and cook predominantly savory dishes safely and hygienically including, where appropriate, the use of a heat source.</b></li> <li>• <b>Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</b></li> <li>• <b>Know that a healthy diet is made up from a variety and balance of different food and understand the content of sugars.</b></li> <li>• Know that to be active and healthy, food and drink are needed to <b>provide energy</b> for the body.</li> </ul>
<p><b>Vocabulary: (in addition to, and building on previous year- see also BOLD items above)</b>                  Axil                  Trade, fair trade, import, export, store, industry, Europe, Continent, plant, shipping                  Broach, fasten, clip                  Wire, circuit, bulb, torch, shine, produce, light</p>	
<p style="text-align: center;"><b>Year 5 Progression of Knowledge and Skills</b></p>	
<p>Developing planning and communicating ideas</p>	<ul style="list-style-type: none"> <li>• <b>Start to generate, develop, model and communicate</b> their ideas through discussion, <b>annotated sketches</b>, such as: <b>cross- sectional and diagrams, pattern pieces.</b></li> <li>• <b>Begin to use research design</b> (This could be album covers, food packaging) using these products to inform the design of <b>innovative, functional, appealing products</b> that are fit for purpose.</li> <li>• With growing confidence apply a range of finishing techniques, including those from art and design</li> <li>• Draw up a specification for their design- link with Mathematics and Science.</li> <li>• Use results of <b>investigations, information sources</b>, including ICT when developing design ideas.</li> <li>• <b>With growing confidence, select appropriate materials, tools and techniques.</b></li> <li>• Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose</li> </ul>
<p>Working with tools, equipment, materials and components to make quality products</p>	<ul style="list-style-type: none"> <li>• <b>Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately.</b></li> <li>• Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and <b>aesthetic</b> qualities.</li> <li>• Understand how mechanical systems such as cams or <b>pulleys or gears</b> create movement- links to science</li> <li>• Begin to measure and mark out accurately.</li> <li>• Understand that a models shape and material changes its structural integrity and reliability</li> <li>• <b>With growing confidence cut and join with accuracy to ensure a good-quality finish to the</b></li> </ul>



	<ul style="list-style-type: none"> <li>product.</li> <li><b>Weigh and measure accurately (e.g. time, dry ingredients, and liquids).</b></li> </ul>
Evaluating processes and products	<ul style="list-style-type: none"> <li>Start to evaluate a product against the original design specification and by carrying out tests.</li> <li><b>Evaluate their work both during and at the end of the assignment.</b></li> <li>Share their products and discuss with others</li> <li><b>After testing products consider their overall effectiveness in the task.</b></li> <li>Evaluate the key designs of individuals in design and technology has helped shape the world.</li> </ul>
Food and Nutrition	<ul style="list-style-type: none"> <li><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></li> <li>Begin to understand that seasons may affect the food available.</li> <li><b>Understand how food is processed into ingredients that can be eaten or used in cooking.</b></li> <li>Know 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><b>Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</b></li> <li><b>Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</b></li> </ul>
<p><b>Vocabulary: (in addition to, and building on previous year- see also BOLD items above)</b>            Design for manufacture, catamaran, hull, sail, saw, wood glue, clamp, vice            Pillar, roof, structure, ancient, reinforce            Fair trade, rainforest, resupply, logging, monoculture</p>	
<p><b>Year 6 Progression of Knowledge and Skills</b></p>	
Developing planning and communicating ideas	<ul style="list-style-type: none"> <li><b>Generate, develop, model and communicate their ideas through discussion, annotated sketches, such as: cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD.</b></li> <li><b>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</b></li> <li>Accurately apply a range of finishing techniques, including those from art and design.</li> <li>Draw up a <b>specification</b> for their design- link with Mathematics and Science.</li> <li><b>Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail.</b></li> <li>Identify the strengths and areas for <b>development in their ideas and products.</b></li> <li><b>Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</b></li> </ul>
Working with tools, equipment, materials and components to make quality products	<ul style="list-style-type: none"> <li><b>Confidently select appropriate tools, materials, components and techniques and use them.</b></li> <li><b>Use tools safely and accurately.</b></li> <li><b>Aim to make and to achieve a quality product</b> – design for manufacture</li> <li>Demonstrate when making <b>modifications</b> as they go along – referring back to plans</li> <li>Construct products using permanent joining techniques.</li> <li>Know how more complex <b>electrical circuits</b> and components can be used to create <b>functional products</b> and how to program a computer to monitor changes in the environment and control their products.</li> <li>Know how <b>to reinforce and strengthen a 3D framework.</b></li> <li>Continue to understand that a models shape and material changes its structural integrity and reliability and how this will change their approach next time</li> <li>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</li> <li>Assemble components to make working models.</li> </ul>



	<ul style="list-style-type: none"> <li>• Use electrical products to produce an item</li> </ul>
Evaluating processes and products	<ul style="list-style-type: none"> <li>• Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests.</li> <li>• Evaluate their work both during and at the end of the assignment.</li> <li>• Record their evaluations using drawings with labels.</li> <li>• Evaluate against their original criteria and suggest ways that their product could be improved.</li> <li>• Evaluate their product as a <b>design for manufacture</b></li> <li>• Evaluate the key designs of individuals in design and technology has helped shape the world.</li> </ul>
Food and Nutrition	<ul style="list-style-type: none"> <li>• Know 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> <li>• Understand that seasons may affect the food available.</li> <li>• Understand how food is processed into <b>ingredients</b> that can be eaten or used in cooking.</li> <li>• Know 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>• Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• Know different food and drink contain different substances – <b>nutrients, water and fibre</b> – that are needed for health.</li> </ul>
<p><b>Vocabulary: (in addition to, and building on previous year- see also BOLD items above)</b>  Herb, spice, pickle, can, canned, dried, preserved  Integral, design for purpose, set, stage, theatre, aesthetic, mood, tone  Canvas, tote, re-use, recycle  Electrical, wires, switches, buzzers, bulbs, motor</p>	