Design and Technology Progression Map

NB: School Curriculum – statements which are additional to the programmes of study for D&T are shown in italic font

<table>
<tr><th>Year 1</th><th>Year 2</th><th>Year 3</th><th>Year 4</th><th>Year 5</th><th>Year 6</th></tr>
<tr><td colspan="6">Designing</td></tr>
<tr><td colspan="2">Understanding Contexts, Users and Purposes
• 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</td><td colspan="2">Understanding Contexts, Users and Purposes
• 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 early KS2 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</td><td colspan="2">Understanding Contexts, Users and Purposes
• 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 late KS2 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</td></tr>
<tr><td colspan="2">Generating, developing, modelling and communicating ideas
• 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 mockups
• use information and communication technology, where appropriate, to develop and communicate their ideas</td><td colspan="2">Generating, developing, modelling and communicating ideas
• 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
In early KS2 pupils should also:
• generate realistic ideas, focusing on the needs of the user
• make design decisions that take account of the availability of resources</td><td colspan="2">Generating, developing, modelling and communicating ideas
• 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
In late KS2 pupils should also:
• generate innovative ideas, drawing on research
• make design decisions, taking account of constraints such as time, resources and cost</td></tr>
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Making		
Planning • *plan by suggesting what to do next* • select from a range of tools and equipment, *explaining their choices* • select from a range of materials and components according to their characteristics	***Planning*** • select tools and equipment suitable for the task • *explain their choice of tools and equipment in relation to the skills and techniques they will be using* • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities In early KS2 pupils should also: • *order the main stages of making*	**Planning** • select tools and equipment suitable for the task • *explain their choice of tools and equipment in relation to the skills and techniques they will be using* • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities In late KS2 pupils should also: • *produce appropriate lists of tools, equipment and materials that they need* • *formulate step-by-step plans as a guide to making*
Practical skills and techniques • follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design	**Practical skills and techniques** • follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components In early KS2 pupils should also: • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy	**Practical skills and techniques** • follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components In late KS2 pupils should also: • accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • *use techniques that involve a number of steps* • demonstrate resourcefulness when tackling practical problems
Evaluating		
Own ideas and Products • talk about their design ideas and what they are making • make simple judgements about their products and ideas against design criteria • *suggest how their products could be improved*	**Own ideas and Products** Across KS2 pupils should: • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work In early KS2 pupils should also: • refer to their design criteria as they design and make • use their design criteria to evaluate their completed product	**Own ideas and Products** Across KS2 pupils should: • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work In late KS2 pupils should also: • critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • *evaluate their ideas and products against their original design specification*

Existing Products • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products	**Existing Products** • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants In early KS2 pupils should also investigate and analyse: • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused	**Existing Products** • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants In late KS2 pupils should also investigate and analyse: • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose
Key Events and Individuals Not a requirement of KS1	Key Events and Individuals • about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	Key Events and Individuals • about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products
Technical Knowledge		
Making Products Work • about the simple working characteristics of materials and components • about the movement of simple mechanisms such as levers, sliders, wheels and axles • how freestanding structures can be made stronger, stiffer and more stable *• that a 3-D textiles product can be assembled from two identical fabric shapes* *• that food ingredients should be combined according to their sensory characteristics* *• the correct technical vocabulary for the projects they are undertaking*	Making Products Work • how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • *that materials can be combined and mixed to create more useful characteristics* • that mechanical and electrical systems have an input, process and output • *the correct technical vocabulary for the projects they are undertaking* In early KS2 pupils should also know: • how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits and components can be used to create functional products • how to program a computer to control their products • how to make strong, stiff shell structures • *that a single fabric shape can be used to make a 3D textiles product* • *that food ingredients can be fresh, pre-cooked and processed*	Making Products Work • how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • *that materials can be combined and mixed to create more useful characteristics* • that mechanical and electrical systems have an input, process and output • *the correct technical vocabulary for the projects they are undertaking* In late KS2 pupils should also know: • how mechanical systems such as cams or pulleys or gears create movement • how more complex electrical circuits and components can be used to create functional products • how to program a computer to monitor changes in the environment and control their products • how to reinforce and strengthen a 3D framework • *that a 3D textiles product can be made from a combination of fabric shapes* • *that a recipe can be adapted by adding or substituting one or more ingredients*

Cooking and Nutrition		
Where food comes from • that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught	Where food comes from 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	Where food comes from 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 In late KS2 pupils should also know: • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking
Food preparation, cooking and nutrition • how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating	Food preparation, cooking and nutrition • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking In early KS2 pupils should also know: • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body	Food preparation, cooking and nutrition • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking In late KS2 pupils should also know: • *that recipes can be adapted to change the appearance, taste, texture and aroma* • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health
Taste Ed (Y1) • Children know the names of different types of peppers and the look and taste different. • Children will be able to explain the different sensations we have when we touch different parts of a tangerine. • Children will know the names of at least 3 salad vegetables e.g. lettuce, red chicory, sugarsnap pea, radish. • Children will be able to describe the different levels of crunchiness between different salad vegetables. • Children will be able to name a range of different fruits e.g. strawberries, raspberries, peach or nectarine, blueberries, apple, grapes, lemon, orange. • Children will be able to describe the small of different fruits and why they like some more than others.	Taste Ed (Y3) • Children will learn about the different varieties of tomatoes e.g. cherry, big round beefsteak, larger or smaller plum or oval, yellow, orange, in some shops you may see tomatoes that are black, brown or stripy even! • Children will learn how to make simple fruit salad using the sounds fruits make to choose the ingredients. • Children will understand the different types of changes. • Children will know how to construct a herb salad using different herbs e.g. mint, basil, parsley, chives. • Children will learn about different types of corn / maize. • Children will know how to make a beetroot hummus containing all five basic tastes (sweet, sour, salty, bitter and umami).	Taste Ed (Y5) • Children will learn basic kitchen skills such as peeling and cutting. • Children will learn about what a healthy diet consists of. • Children will learn about the different varieties of carrot e.g. purple and yellow as well as orange, large ones with green leaves on, small Chantenay ones. • Children will learn about the different varieties of • 3 or more other fruits with contrasting scents e.g. lime, raspberries, plum, blueberries, melon slices, orange, purple grapes • Children will learn about an increasing variety of vegetables e.g. Suggestion: little gem, lettuce, spinach leaves, celery, red chicory, peppers, sugarsnap pea, red cabbage, cucumber, radish, peppers, iceberg lettuce, celery, little gem lettuce, small cucumbers, avocados and tomatoes. • Children will learn about an increasing variety of salad vegetables with a range of crunchiness. Suggestion: little gem lettuce, spinach leaves, celery, red chicory, peppers, sugarsnap pea, red cabbage, cucumber, radish

Taste Ed (Y2) • Children will know the names of different apple varieties e.g. Cox, Granny Smith, Braeburn or Golden Delicious or Jazz • Children will know the names of different cabbage varieties e.g. savoy, red and white or Hispi. • Children will know the names of different types of citrus fruits e.g. blood oranges, Seville oranges, grapefruits, limes, lemons, oranges or clementines • Children will know the names of different types of sald vegetables e.g. radish, cherry tomato, sugarsnap pea, basil or mint, carrots including different colours, peppers, baby sweetcorn, button mushrooms, cucumbers, spinach leaves, herbs, lettuce leaves such as Little Gem etc • Children will be able to identify sweet and sour foods e.g. Sweet version: Many kinds of berries: strawberries (sweet and sour), gooseberries (sour), raspberries (sweet and floral), blueberries (sweet), blackberries (sweet and earthy), fresh cranberries or dried goji berries (sharp and sweet). Or Savoury version with vegetables and olives: cherry tomatoes cut in half (sweet-sour), fresh peas or sugarsnap peas (sweet), cauliflower (pungent), cucumber (watery), peppers (sweet), stoneless olives cut in half (salty), lemon slices (sour), carrot slices (sweet), mushroom slices (savoury and earthy), basil leaves (herbal), rocket or chicory leaves (bitter), small cubes of cheese.	Taste Ed (Y4) • Children will learn about fruits familiar during Tudor times e.g. fresh strawberries, cherries and dried barberries; vegetables such as potatoes, sweet potatoes, corn on the cob (maize), peppers, tomatoes, onions; herbs e.g. mint, parsley, lavender, juniper, rosemary, thyme, bay, sorrel, fennel. • Children will know which utensils were used in a Tudor kitchen and how to use them e.g. pestle and mortar, wooden spoons.	Taste Ed (Y6) • Children learn about how sight can impact our taste. • Children will know what is meant by texture in relation to food. Children learn what texture means and learn how to apply the idea to a series of fruits and vegetables. • Children will know about the relationship between and taste and smell and memory. • Children learn how to identify the five basic tastes both separately and when combined in a soup.