

DT Progression of skills KS1

KS1 National Curriculum objectives: In this unit, children will be taught to:

Design – Understand contexts, users and purposes

- work confidently within a range of contexts, such as imaginary, storybased, home, school, gardens, playgrounds, local community, industry and the wider environment
- state what products they are 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

Design - Generate, develop, model and communicate 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 ICT, where appropriate, to develop and communicate their ideas

Evaluate – 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

Evaluate – Existing products

- explore what products are and who or what they are for.
- explore how products work and how or where they might be used.
- explore what materials products are made from
- explore what they like and dislike about products

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

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

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 shape
- that food ingredients should be combined according to their sensory characteristics
- to use correct technical vocabulary

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

Cooking and nutrition – 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

Lower KS2 National Curriculum objectives: In this unit, children will be taught to:	
<u>Design – Understand contexts, users and purposes</u> - 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 - gather information about needs and wants of particular individuals and groups - develop their own design criteria and use these to inform their ideas	<u>Making - Planning</u> - 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 - order the main stages of making
<u>Design - Generate, develop, model and communicate ideas</u> - 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 - generate realistic ideas, focusing on the needs of the user - make design decisions that take account of the availability of resources	<u>Making – Practical skills and techniques</u> - 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 - 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
<u>Evaluate – Own ideas and products</u> - identify the strengths and areas for development in their ideas and products - consider the views of others, including intended users, to improve their work - refer to their design criteria as they design and make - use their design criteria to evaluate their completed products	<u>Technical knowledge – Making products work</u> - how to use learning from science and maths 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 - use the correct technical vocabulary for the projects they are undertaking - 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
<u>Evaluate – Existing products</u> Pupils will be taught to investigate and analyse: - how well products have been designed and made - why materials have been chosen - what methods of construction have been used - developed ground-breaking products - how well products work to achieve their purposes - how well products meet user needs and wants - who designed and made the products - where and when products were designed and made - whether products can be recycled or reused	<u>Cooking and nutrition – Where food comes from</u> - that food ingredients can be fresh, pre-cooked and processed - 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
<u>Evaluate – Key events and individuals</u> about inventors, designers, engineers, chefs and manufacturers who have	<u>Cooking and nutrition – Food preparation, cooking and nutrition</u> - 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 - that a healthy diet is made up from a variety and balance of different food and drink - that to be active and healthy, food and drink are needed to provide energy for the body

Upper KS2 National Curriculum objectives: In this unit, children will be taught to:	
<u>Design – Understand contexts, users and purposes</u> - 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 - 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 <u>Design - Generate, develop, model and communicate ideas</u> - 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 - generate realistic ideas, focusing on the needs of the user - make design decisions that take account of the availability of resources	<u>Making - Planning</u> - 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 - produce appropriate lists of tools, equipment and materials that they need - formulate step-by-step plans as a guide to making <u>Making – Practical skills and techniques</u> - 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 - 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
<u>Evaluate – Own ideas and products</u> - identify the strengths and areas for development in their ideas and products - consider the views of others, including intended users, to improve their work - 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 <u>Evaluate – Existing products</u> Pupils will be taught to investigate and analyse: - how well products have been designed and made - why materials have been chosen - what methods of construction have been used - how well products work to achieve their purposes - how well products meet user needs and wants - 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 <u>Evaluate – Key events and individuals</u> - about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	<u>Technical knowledge – Making products work</u> - how to use learning from science and maths 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 - 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 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
- that seasons may affect the food available
- how food is processed into ingredients that can be eaten or used in cooking

Cooking and nutrition – 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
- 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