Year 1/2 Design and Technology

Design	Make	Evaluate
National Curriculum Progression in Design and Technology Pupils should be taught to: • 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	**National Curriculum Progression in Design and Technology** Pupils should be taught to: • 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 characteristic	**National Curriculum Progression in Design and Technology** Pupils should be taught to: • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria
Contexts, Uses and Purposes For instance: State the purpose of the design and the intended user Explore materials, make templates and mock ups e.g. moving picture / lighthouse	**Planning** For instance: Select from a range of tools and equipment explaining their choices Select from a range of materials and components according to their characteristics	**Own Ideas and Products** For instance: 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 Evaluating products and components used
Ideas For instance: Generate own ideas for design by drawing on own experiences or from reading	**Practical Skills and Techniques** For instance: Follow procedures for safety Use and make own templates Measure, mark out, cut out and shape materials and components Assemble, join and combine materials and components Use simple fixing materials e.g. temporary – paper clips tape and permanent – glue, staples Use finishing techniques, including those from art and design	**Existing Products** For instance: Investigate - what products are, who they are for, how they are made and what materials are used

Technical Knowledge
National Curriculum Progression in Design and Technology Pupils should be taught to: • 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
Making Products Work For instance: Understand about the simple working characteristics of materials and components Understand about the movement of simple mechanisms including levers, sliders (Year 1) wheels and axles (Year 2) Understand that food ingredients should be combined according to their sensory characteristics Know the correct technical vocabulary for the projects they are undertaking Understand how freestanding structures can be made stronger, stiffer and more stable

Cooking and Nutrition
National Curriculum Progression in Design and Technology Pupils should be taught to: • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from
Where Food Comes From For instance: Know where food comes from
Food Preparation, Cooking and Nutrition For instance: Use appropriate equipment to weigh and measure ingredients Prepare simple dishes safely and hygienically, without using a heat sources Use techniques such as cutting Name and sort foods into the five groups of the 'eat well' plate Know that everyone should eat at least five portions of fruit and vegetables every day

Year 3/4 Design and Technology

Design	Make	Evaluate
National Curriculum Progression in Design and Technology Pupils should be taught to: • 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	**National Curriculum Progression in Design and Technology** Pupils should be taught to: • 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	**National Curriculum Progression in Design and Technology** Pupils should be taught to: • 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
Contexts, Uses and Purposes For instance: Gather information about the needs and wants of particular individuals and groups Develop their own design criteria and use these to inform their ideas Research designs	**Planning** For instance: 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 Produce detailed lists of tools, equipment and materials that they need	**Own Ideas and Products** For instance: Identify the strengths and weaknesses of their ideas and products Consider the views of others, including intended users, to improve their work Refer back to their design criteria as they design and make Use their design criteria to evaluate their completed products Identify the strengths and weaknesses of their ideas and products Consider the views of others, including intended users, to improve their work
Ideas For instance: Share and clarify ideas through discussion Model their ideas using prototypes and pattern pieces Use annotated sketches, cross-sectional drawings and diagrams Use computer-aided design	**Practical Skills and Techniques** For instance: Follow procedures for safety Use a wider range of materials and components, 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, include those from art and design, with some accuracy	**Existing Products** For instance: Investigate - 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 and how well products meet user needs and wants Investigate - who designed and made the products, where products were designed and made, when products were designed and made and whether products can be recycled or reused **Key Events/Individuals** For instance Identify great designers and their work and use research of designers to influence work

Year 3/4 Design and Technology

Technical Knowledge

National Curriculum Progression in Design and Technology

Pupils should be taught to:

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, 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

Making Products Work

For instance:

Understand how to use learning from science and maths to help design and make products that work

Know that materials have both functional properties and aesthetic qualities

Know that materials can be combined and mixed to create more useful characteristics

Know that mechanical and electrical systems have an input, process and output

Use the correct technical vocabulary for the projects they are undertaking

Understand how levers and linkages or pneumatic systems create movement

Understand how simple electrical circuits and components can be used to create functional products

Understand how to program a computer to control their products

Know how to make strong, stiff shell structures

Know that a single fabric shape can be used to make a 3D textiles product

Know that food ingredients can be fresh, pre-cooked and processed

Cooking and Nutrition

National Curriculum Progression in Design and Technology

Pupils should be taught to

- 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

Where Food Comes From

For instance:

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

Know that seasons may affect the food available Understand how food is processed into ingredients that can be eaten or used in cooking

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

Know that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in the 'eat well' plate

Know that to be active and healthy, food is needed to provide energy for the body

Measure using grams

Follow a recipe

Year 5/6 Design and Technology

Design	Make	Evaluate
National Curriculum Progression in Design and Technology Pupils should be taught to: • 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	**National Curriculum Progression in Design and Technology** Pupils should be taught to: • 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	**National Curriculum Progression in Design and Technology** Pupils should be taught to: • 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
Contexts, Uses and Purposes For instance: 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 Recognise when their products have to fulfil conflicting requirements	**Planning** For instance: 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 Produce detailed lists of tools, equipment and materials that they need	**Own Ideas and Products** For instance: Identify the strengths and weaknesses of their ideas and products Consider the views of others, including intended users, to improve their work Refer back to their design criteria as they design and make Use their design criteria to evaluate their completed products Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Compare their ideas and products to their original design specification
Ideas For instance: Generate innovative ideas, drawing on research Make design decisions, taking account of constraints such as time, resources and cost Develop prototypes	**Practical Skills and Techniques** For instance: Follow procedures for safety Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components Accurately measure to nearest mm, mark out, cut and shape materials and components Accurately assemble, join and combine materials/ components Accurately apply a range of finishing techniques, including those from art and design Use techniques that involve a number of steps Demonstrate resourcefulness, e.g. make refinements	**Existing Products** For instance: Investigate - 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 and how well products meet user needs and wants Investigate - how much products cost to make, how innovative products are and how sustainable the materials in products are Key events/Individuals For instance Identify great designers and their work and use research of designers to influence work

Year 5/6 Design and Technology

Technical Knowledge

National Curriculum Progression in Design and Technology

Pupils should be taught to:

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, 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

Making Products Work

For instance:

Understand how to use learning from science and maths to help design and make products that work

Know that materials have both functional properties and aesthetic qualities

Know that materials can be combined and mixed to create more useful characteristics Know that mechanical and electrical systems have an input, process and output

Use the correct technical vocabulary for the projects they are undertaking

Understand how cams, pulleys and gears create movement

Understand how more complex electrical circuits and components can be used to create functional products

Understand how to program a computer to monitor changes in the environment / control their products

Know how to reinforce/strengthen a 3D framework

Know that a 3D textiles product can be made from a combination of fabric shapes

Know hat a recipe can be adapted a by adding or substituting one or more ingredients

Cooking and Nutrition

National Curriculum Progression in Design and Technology

Pupils should be taught to:

• 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

Where Food Comes From

For instance:

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

Know that seasons may affect the food available Understand how food is processed into ingredients that can be eaten or used in cooking

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

Know that recipes can be adapted to change the appearance, taste, texture and aroma

Know that different foods contain different substances - nutrients, water and fibre - that are needed for health

Understand the need for correct storage

Measure accurately

Work out ratios in recipes