Wilkinson Primary School – Progression in Design Technology Skills

Designing		
Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Understanding contexts, users and purposes • D1 work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment • D2 state what products they are making • D3 say whether their products are for themselves or other users • D4 describe what their products are for • D5 say how their products will work • D6 say how they will make their products suitable for their intended users • D7 use simple design criteria to help develop their ideas Generating, developing, modelling and communicating ideas • D8 generate ideas by drawing on their own experiences • D9 use knowledge of existing products to help come up with ideas • D10 develop and communicate ideas by talking and drawing • D11 model ideas by exploring materials, components and construction kits and by making templates and mockups • D12 use ICT, where appropriate, to develop and communicate their ideas	Understanding contexts, users and purposes • D1work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • D2 describe the purpose of their products • D3 indicate the design features of their products that will appeal to intended users • D4 explain how particular parts of their products work • D5 gather information about needs and wants of particular individuals and groups • D6 develop their own design criteria and use these to inform their ideas Generating, developing, modelling and communicating ideas • D7 share and clarify ideas through discussion • D8 model their ideas using prototypes and pattern pieces • D9 use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • D10 use computer-aided design to develop and communicate their ideas • D11 generate realistic ideas, focusing on the needs of the user • D12 make design decisions that take account of the availability of resources	Understanding contexts, users and purposes • D1 work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • D2 describe the purpose of their products including what needed to have been invented before that product could be made. • D3 indicate the design features of their products that will appeal to intended users and explain why these may appeal. What might make it more appealing? • D4 explain how particular parts of their products work • D5 carry out research, using surveys, interviews, questionnaires and web-based resources • D6 identify the needs, wants, preferences and values of particular individuals and groups • D7 develop a simple design specification to guide their thinking Generating, developing, modelling and communicating ideas • D8 share and clarify ideas through discussion • D9 model their ideas using prototypes and pattern pieces, making changes to their design if necessary. • D10 use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • D11 use computer-aided design to develop and communicate their ideas • D12generate realistic ideas, focusing on the needs of the user • D13 make design decisions that take account of the availability of resources

Making	

Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Planning • M1 plan by suggesting what to do next • M2 select from a range of tools and equipment, explaining their choices • M3 select from a range of materials and components according to their characteristics Practical skills and techniques • M4 follow procedures for safety and hygiene • M5 use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • M6 measure, mark out, cut and shape materials and components • M7 assemble, join and combine materials and components • M8 use finishing techniques, including those from art and design	Planning • M1 select tools and equipment suitable for the task • M2 explain their choice of tools and equipment in relation to the skills and techniques they will be using • M3 select materials and components suitable for the task • M4 explain their choice of materials and components according to functional properties and aesthetic qualities • M5 order the main stages of making Practical skills and techniques • M6 follow procedures for safety and hygiene • M7 use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components • M8 measure, mark out, cut and shape materials and components with some accuracy • M9 assemble, join and combine materials and components with some accuracy • M10 apply a range of finishing techniques, including those from art and design, with some accuracy	Planning • M1 select tools and equipment suitable for the task justifying choices. • M2 explain their choice of tools and equipment in relation to the skills and techniques they will be using correct terminology. • M3 select materials and components suitable for the task justifying their choices and explaining why a particular material /component would not be suitable. • M4 explain their choice of materials and components according to functional properties and aesthetic qualities • M5 produce appropriate lists of tools, equipment and materials that they need • M6 formulate step-by-step plans as a guide to making. Practical skills and techniques • M7 follow procedures for safety and hygiene explaining the necessity for these. • M8 use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Use correct terminology for these. • M9 accurately measure, mark out, cut and shape materials and components • M10 accurately assemble, join and combine materials and components • M11 accurately apply a range of finishing techniques, including those from art and design • M12 use techniques that involve a number of steps • M13 demonstrate resourcefulness when tackling practical problems

Evaluating		
Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Own ideas and products • E1 talk about their design ideas and what they are making • E2 make simple judgements about their products and ideas against design criteria • E3 suggest how their products could be improved Existing products • E4 explore what products are and who or what they are for. • E5 explore how products work and how or where they might be used. • E6 explore what materials products are made from • E7 explore what they like and dislike about products Key events and individuals • E14 about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	Own ideas and products • E1 identify the strengths and areas for development in their ideas and products • E2 consider the views of others, including intended users, to improve their work • E3 refer to their design criteria as they design and make • E4 use their design criteria to evaluate their completed products Existing products Pupils will be taught to investigate and analyse: • E5 how well products have been designed and made • E6 why materials have been chosen • E7 what methods of construction have been used • E8 developed ground-breaking products • E9 how well products work to achieve their purposes • E10 how well products meet user needs and wants • E11 who designed and made the products • E12 where and when products were designed and made • E13 whether products can be recycled or reused Key events and individuals • E14 about inventors, designers, engineers, chefs and manufacturers who have	Own ideas and products • E1 identify the strengths and areas for development in their ideas and products • E2 consider the views of others, including intended users, to improve their work • E3 critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • E4 evaluate their ideas and products against their original design specification Existing Products Pupils will be taught to investigate and analyse: • E5 how well products have been designed and made • E6 why materials have been chosen • E7 what methods of construction have been used • E8 how well products work to achieve their purposes • E9 how well products meet user needs and wants • E10 how much products cost to make • E11 how innovative products are • E12 how sustainable the materials in products are • E13 what impact products have beyond their intended purpose Key events and individuals • E14 about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products

Cooking and nutrition		
Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Where food comes from • C1 that all food comes from plants or animals • C2 that food has to be farmed, grown elsewhere (e.g. home) or caught Food preparation, cooking and nutrition • C3 how to name and sort foods into the five groups in The Eatwell Plate • C4 that everyone should eat at least five portions of fruit and vegetables every day • C5 how to prepare simple dishes safely and hygienically, without using a heat source • C6 how to use techniques such as cutting, peeling and grating	Where food comes from • C1 that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens • C2 and cattle) and caught (such as fish) in the UK, Europe and the wider world Food preparation, cooking and nutrition • C3 how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • C4 how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • C5 that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate • C6 that to be active and healthy, food and drink are needed to provide energy for the body	Where food comes from • C1 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 • C2 that seasons may affect the food available • C3 how food is processed into ingredients that can be eaten or used in cooking • Food preparation, cooking and nutrition • C4 how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • C5 how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • C6 that recipes can be adapted to change the appearance, taste, texture and aroma • C7 that different food and drink contain different substances – nutrients, water and fibre – that are needed for health

Technical Knowledge		
Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Making products work • T1 about the simple working characteristics of materials and components • T2 about the movement of simple mechanisms such as levers, sliders, wheels and axles • T3 how freestanding structures can be made stronger, stiffer and more stable • T4 that a 3-D textiles product can be assembled from two identical fabric shape • T5 that food ingredients should be combined according to their sensory characteristics • T6 the correct technical vocabulary for the projects they are undertaking	Making products work • T1 how to use learning from science and maths to help design and make products that work • T2 that materials have both functional properties and aesthetic qualities • T3 that materials can be combined and mixed to create more useful characteristics • T4 that mechanical and electrical systems have an input, process and output • T5 use the correct technical vocabulary for the projects they are undertaking • T6 how mechanical systems such as levers and linkages or pneumatic systems create movement • T7 how simple electrical circuits and components can be used to create functional products • T8 how to program a computer to control their products • T9 how to make strong, stiff shell structures • T10 that a single fabric shape can be used to make a 3D textiles product • T11 that food ingredients can be fresh, pre-cooked and processed	Making products work • T1 how to use learning from science and maths to help design and make products that work • T2 that materials have both functional properties and aesthetic qualities • T3 that materials can be combined and mixed to create more useful characteristics • T4 that mechanical and electrical systems have an input, process and output • T5 the correct technical vocabulary for the projects they are undertaking • T6 how mechanical systems such as cams or pulleys or gears create movement • T7 how more complex electrical circuits and components can be used to create functional products • T8 how to program a computer to control their products • T9 how to reinforce and strengthen a 3D framework • T10 that a 3D textiles product can be made from a combination of fabric shapes • T11 that a recipe can be adapted by adding or substituting one or more ingredients