Scholar Green Primary School
DT Progression Model
KS2

Design

- 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

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, 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

Evaluate

- 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

Technical Knowledge

- 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 [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

- 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.

	Knowledge	Skills	Vocabulary
3	**<u>Designing</u>** • To know the purpose of their products • To know design features of their products that will appeal to intended users • To know how particular parts of their products work • To know the purpose and benefits of using a prototype or pattern piece • To know how to annotate a sketch effectively **<u>Making</u>** • To know that products are made of different components • To know procedures for safety and hygiene • To know how mechanical systems such as linkages and pneumatic systems create movement **<u>Evaluating</u>** • To know: How well products have been designed How well products have been made Why materials have been chosen	**<u>Designing</u>** • 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 • Use given information to develop their own design criteria and use these to inform their ideas (at least once per year) • Share and clarify ideas through discussion • Model their ideas using prototypes and pattern pieces (at least once per year) • Use annotated sketches, to develop and communicate their ideas **<u>Making</u>** • Select tools and equipment suitable for the task • Select materials and components suitable for the task • Follow procedures for safety and hygiene • Use a wider range of materials and components than KS1,	As in previous years plus Purpose Design features Intended users Prototype Pattern piece Annotated sketches Design criteria Components Levers and linkages Pneumatic systems Movement Healthy diet Eatwell Plate Savoury

	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 • To know about inventors, designers, engineers, chefs, manufacturers and key events who have developed groundbreaking products and helped shaped the world. Spring 1 - Jamie Oliver Summer 1 Egyptian Shaduf **<u>Cooking and Nutrition</u>** • To know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate	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 • To use mechanical systems such as linkages and pneumatic systems create movement • To make strong, stiff shell structures **<u>Evaluating</u>** • Identify the strengths and areas for development in their ideas and products • To investigate and analyse: who designed and made the products where products were designed and made **<u>Cooking and Nutrition</u>** • To prepare and cook a variety of predominantly savoury dishes safely and hygienically	

		• To use a range of techniques such as chopping, mixing, spreading.	
4	**<u>Designing</u>** • To know the purpose of their products • To know design features of their products that will appeal to intended users • To know how particular parts of their products work • To know what information is needed to create their own design criteria • To know how to complete a cross-sectional drawing effectively **<u>Making</u>** • To know that products are made of different components • To know procedures for safety and hygiene • To know how cams, pulleys and gears work **<u>Evaluating</u>** • To know: How well products have been designed	**<u>Designing</u>** • 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 the needs and wants of particular individuals and groups to create their own design criteria (at least once per year) • Share and clarify ideas through discussion • Model their ideas using prototypes and pattern pieces (at least once per year) • Use annotated sketches or cross sectional drawings, to develop and communicate their ideas **<u>Making</u>** • Select tools and equipment suitable for the task • Select materials and components suitable for the task	As above plus Cross-sectional drawing Cams, pulleys, gears Recycled Reused

	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 • To know about inventors, designers, engineers, chefs, manufacturers and key events who have developed groundbreaking products and helped shaped the world. Spring 1 - Henry Ford Summer 1 - Joe Wicks **<u>Cooking and Nutrition</u>** • To know that food is grown and reared in the UK, Europe and wider world • To know that to be active and healthy, food and drink are needed to provide energy for the body	• 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 increasing accuracy • Assemble, join and combine materials and components with increasing accuracy • Apply a range of finishing techniques, including those from art and design, with increasing accuracy • To use mechanical systems such as cams, pulleys and gears create movement **<u>Evaluating</u>** • Use their design criteria to evaluate their completed products • To investigate and analyse: When products were designed and made	

		Whether products can be recycled or reused **Cooking and Nutrition** • To prepare and cook a variety of predominantly savoury dishes safely and hygienically • To use a range of techniques as previously taught and to develop new skills of slicing and grating	
5	**Designing** • To know the purpose of their products • To know design features of their products that will appeal to intended users • To know how particular parts of their products work • To know how to design an appropriate questionnaire • To know how to complete an exploded diagram **Making** • To know that products are made of specific components • To know procedures for safety and hygiene • To know how electrical circuits work **Evaluating** • To know:	**Designing** • 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 questionnaires to identify the needs, wants, preferences or values of a particular individual/group (at least once per year) • Share and clarify ideas through discussion • Model their ideas using prototypes and pattern pieces (at least once per year)	As above plus Questionnaire Exploded diagram Electrical circuits Reinforce and strengthen Food availability

	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 • To know about inventors, designers, engineers, chefs, manufacturers and key events who have developed groundbreaking products and helped shaped the world. Spring 1 - Isambard Kingdom Brunel Summer 1 Gino D'Acampo **<u>Cooking and Nutrition</u>** • To know that seasons affect food availability • To know that recipes can be adapted to change the appearance, taste, texture and aroma	• Use annotated sketches or exploded diagrams to develop and communicate their ideas **<u>Making</u>** • Select tools and equipment suitable for the task and 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 and explain their choice of materials and components according to functional properties and aesthetic qualities • Follow procedures for safety and hygiene • Use a wider range of materials and components than LKS2, 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 • To use techniques that involve a number of steps • To reinforce and strengthen a 3D framework • To use simple electrical circuits and components can be used to create functional products **Evaluating** • Consider the views of others, including intended users, to improve their work • To investigate and analyse: how much products cost to make how innovative products are **Cooking and Nutrition** • To prepare and cook a variety of predominantly savoury dishes safely and hygienically using the use of a heat source • To use a range of techniques as previously taught and to develop new skill of peeling	
6	**Designing** • To know the purpose of their products	**Designing** • Describe the purpose of their products	As above plus Interview Computer aided programmes Programming Food processing

	• To know design features of their products that will appeal to intended users • To know how particular parts of their products work • To know how to design appropriate interview questions • To know how to use computer aided programmes in the design process **Making** • To know that products are made of specific components • To know procedures for safety and hygiene • To know how to programme to monitor and control their products **Evaluating** • To know: 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	• 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 interviews to identify the needs, wants, preferences or values of a particular individual/group (at least once per year) • Share and clarify ideas through discussion • Model their ideas using prototypes and pattern pieces (at least once per year) • Use annotated sketches or computer-aided design to develop and communicate their ideas **Making** • Select tools and equipment suitable for the task and 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 and explain their choice of materials and components according to	

	How well products achieve their purposes How well products meet user needs and wants • To know about inventors, designers, engineers, chefs, manufacturers and key events who have developed groundbreaking products and helped shaped the world. Spring 1: Fair Ground Rides and Ferris Wheel Summer 1: Warburtons **<u>Cooking and Nutrition</u>** • To know how food is processed into ingredients that can be eaten or used in cooking • To know that different food and drink contain different substances: nutrients, water and fibre, that are needed for health	functional properties and aesthetic qualities • Follow procedures for safety and hygiene • Use a wider range of materials and components than LKS2, 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 • Demonstrate resourcefulness when tackling practical problems • How to program a computer to monitor and control their products **<u>Evaluating</u>** • Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make	

		• To investigate and analyse: how sustainable the materials in products are what impact products have beyond their intended purpose **<u>Cooking and Nutrition</u>** • To prepare and cook a variety of predominantly savoury dishes safely and hygienically using the use of a heat source • To use a range of techniques as previously taught and to develop new skills of kneading and baking	