

Subject: Design Technology

Progression and Coverage Document

National Curriculum

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims: The national curriculum for design and technology aims to ensure that all pupils: develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world, build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users critique, evaluate and test their ideas and products and the work of others and understand and apply the principles of nutrition and learn how to cook.

Attainment targets: By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Schools are not required by law to teach the example content in [square brackets].

Key Stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- 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

Make

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

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their Products.

Cooking and nutrition

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Year 1

<u>NC Objective</u>	<u>Lark Hall Targets</u>	<u>Term and topic</u>	<u>Activity and notes</u>
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	13,15	Spring 2 - Happily ever after	<ul style="list-style-type: none"> • Textiles - Make a story quilt
Use the basic principles of a healthy and varied diet to prepare dishes	19	Summer 2 - Get, Set Grow!	<ul style="list-style-type: none"> • Cooking- linked to healthy eating and foods that they grow, e.g. smoothies, vegetable wraps
Understand where food comes from.	18	Autumn 2 - Happily ever after	<ul style="list-style-type: none"> • Cooking - baking gingerbread something to sell

Year 2

<u>NC Objective</u>	<u>Lark Hall Targets</u>	<u>Term and topic</u>	<u>Activity and notes</u>
Design purposeful, functional, appealing products for themselves and other users based on design criteria	1	Spring 2 - Only Oliver	<ul style="list-style-type: none"> • Woodwork and mechanics- linked to enterprise project. Chn make boats (rafts with sails) to help boy and penguin. Penguin's umbrella has a hole in (link to materials properties)
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	2,3,7		
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]	9,10,11		
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	12,16		
Explore and evaluate a range of existing products	4,6,8		
Evaluate their ideas and products against design criteria	5		
Build structures, exploring how they can be made stronger, stiffer and more stable	14		
Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	17	Autumn 2 - Castles and Dragons	<ul style="list-style-type: none"> • Mechanics - split pin animals for story scene and animation
		Spring 2 - Only Oliver	<ul style="list-style-type: none"> • Woodwork and mechanics- linked to enterprise project. Chn make boats (rafts with sails) to help boy and penguin. Penguin's umbrella has a hole in (link to materials properties)
Use the basic principles of a healthy and varied diet to prepare dishes	19	Summer 2 - The Royals	<ul style="list-style-type: none"> • Cooking- linked to healthy eating. Royal banquets through history. Chn prepare a healthy afternoon tea.

Understand where food comes from.	18		
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Key Stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

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.

Year 3

<u>NC Objective</u>	<u>Lark Hall Targets</u>	<u>Term and topic</u>	<u>Activity and notes</u>
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	1,5	Spring 2 - Ridiculous Roald	<ul style="list-style-type: none"> • Enterprise Week - Need to decide what is to be made
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	3,4		
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	8,11,12,13,14,15,16,19	Aut 2 - Big Freeze Spring 2 - Ridiculous Roald Summer 2 - Excavating Ancient Egypt	<ul style="list-style-type: none"> • Felt polar animal Christmas Tree Decorations • Enterprise Week - Need to decide what is to be made • Making pyramids
Select from and use a wider range of materials and components, including	9,17	Aut 2 - Big Freeze	<ul style="list-style-type: none"> • Felt polar animal Christmas Tree Decorations

construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities		Spring 2 - Ridiculous Roald	<ul style="list-style-type: none"> Enterprise Week - Need to decide what is to be made
Investigate and analyse a range of existing products	2,7	Spring 2 - Ridiculous Roald	<ul style="list-style-type: none"> Enterprise Week - Need to decide what is to be made
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	10		
Understand how key events and individuals in design and technology have helped shape the world	3		
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	20		
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	21		
Understand and apply the principles of a healthy and varied diet	22	Summer 2 - Excavating Ancient Egypt	<ul style="list-style-type: none"> Healthy living week- make a fruit salad or healthy wrap using seasonal fruit and veg
Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	23		
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	24		

Year 4

<u>NC Objective</u>	<u>Lark Hall Targets</u>	<u>Term and topic</u>	<u>Activity and notes</u>
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	1,5	Autumn 2 -Robots Spring 2 - enterprise week	<ul style="list-style-type: none"> Mechanics - Robot using software (or pulleys and gears) Woodwork - Creating something with pulleys and gears
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	3,4,6	Autumn 2 -Robots Spring 2 - enterprise week	<ul style="list-style-type: none"> Mechanics - Robot using software (or pulleys and gears) Woodwork - Creating something with pulleys and gears
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	8,11,12,13,14,19	Autumn 2 -Robots Spring 2 - enterprise week	<ul style="list-style-type: none"> Mechanics - Robot using software (or pulleys and gears) Woodwork - Creating something with pulleys and gears
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	9		
Investigate and analyse a range of existing products	2,7		

Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	10		
Understand how key events and individuals in design and technology have helped shape the world	3		
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	20	Spring 2 - Enterprise week	<ul style="list-style-type: none"> • Woodwork - Creating something with pulleys and gears
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	21	Autumn 2 -Robots Spring 2 - enterprise week	<ul style="list-style-type: none"> • Mechanics - Robot using software (or pulleys and gears) • Woodwork - Creating something with pulleys and gears
Apply their understanding of computing to program, monitor and control their products.	18	Autumn 2 -Robots	<ul style="list-style-type: none"> • Mechanics - Robot using software (or pulleys and gears)
Understand and apply the principles of a healthy and varied diet	22	Summer 2	<ul style="list-style-type: none"> • Healthy Living Week
Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	23	Autumn 1 - Yo, Me, Moi Spring 1 - Roaming Romans	<ul style="list-style-type: none"> • Cooking - savoury and seasonal snack from the country on Spanish Day • Cooking - bread (have as snacks for museum) https://www.bbcgoodfood.com/recipes/collection/snacks-kids Savoury snack ideas for a range
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	24	Autumn 1 - Yo, Me, Moi	<ul style="list-style-type: none"> • Cooking - savoury and seasonal snack from the country on Spanish Day

Year 5

<u>NC Objective</u>	<u>Lark Hall Targets</u>	<u>Term and topic</u>	<u>Activity and notes</u>
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	1,2,3	Autumn 2 - Vikings: Valiant or vicious? Spring 2 - Mainly Marcus	<ul style="list-style-type: none"> • Woodwork - Build Viking Ship • Enterprise Week - Using Calder as inspiration, innovative design that improves upon existing products
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	5,6	Autumn 2 - Vikings: Valiant or vicious?	<ul style="list-style-type: none"> • Woodwork - Build Viking Ship
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	7,12,14,15,19	Spring 2 - Mainly Marcus	<ul style="list-style-type: none"> • Enterprise Week - Using Calder as inspiration, innovative design that improves upon existing products
Select from and use a wider range of materials and components, including construction materials, textiles and	8,10,13,16	Summer 1 - Ancient Greece/Olympics	<ul style="list-style-type: none"> • Textiles - Create Olympic flag - need to join seams

ingredients, according to their functional properties and aesthetic qualities			
Investigate and analyse a range of existing products	1,3	Autumn 2 - Vikings: Valiant or vicious?	<ul style="list-style-type: none"> • Woodwork - Build Viking Ship
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	9,11	Spring 2 - Mainly Marcus	<ul style="list-style-type: none"> • Enterprise Week - Using Calder as inspiration, innovative design that improves upon existing products
Understand how key events and individuals in design and technology have helped shape the world	4	Spring 2 - Mainly Marcus	<ul style="list-style-type: none"> • Enterprise Week - Using Calder as inspiration, innovative design that improves upon existing products
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	20	Autumn 2 - Vikings: Valiant or vicious?	<ul style="list-style-type: none"> • Woodwork - Build Viking Ship
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	21		
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	17		
Apply their understanding of computing to program, monitor and control their products.	18,22		
Understand and apply the principles of a healthy and varied diet	23	Summer 2 - Spectacular space	<ul style="list-style-type: none"> • Cooking - Healthy Living Week
Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	24	Autumn 1 - Same but different	<ul style="list-style-type: none"> • Cooking - Spanish Day making seasonal, savoury goods linked to that country
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	25	Summer 2 - Spectacular space	<ul style="list-style-type: none"> • Cooking - Healthy Living Week

Year 6

<u>NC Objective</u>	<u>Lark Hall Targets</u>	<u>Term and topic</u>	<u>Activity and notes</u>
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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	1,2,3	Spring 2 - Enterprise Week	<ul style="list-style-type: none"> Enterprise Week
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	5,6	Spring 1 - Friend or Foe Spring 2 - Evolution	<ul style="list-style-type: none"> Woodwork - making a bench for a shelter Enterprise Week
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	7,12,19		
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	8,10,13		
Investigate and analyse a range of existing products	1,3	Spring 2 - Evolution	<ul style="list-style-type: none"> Enterprise Week
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	9,11	Spring 1 - Friend or Foe Spring 2 - Evolution	<ul style="list-style-type: none"> Woodwork - making a bench for a shelter Enterprise Week
Understand how key events and individuals in design and technology have helped shape the world	4	Spring 1 - Friend or Foe	<ul style="list-style-type: none"> Explain about the importance of the Enigma and Bombe machines (Alan Turing) in the war.
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	20	Spring 1 - Friend or Foe	<ul style="list-style-type: none"> Woodwork - making a bench for a shelter
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	21	Spring 2 - Evolution Summer 1 - A whale of a time	<ul style="list-style-type: none"> Enterprise Week Mechanics - (Billy and The Whale problem science investigation)
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	17	Spring 1 - Friend or Foe Spring 2 - Evolution Summer 1 - A whale of a time	<ul style="list-style-type: none"> Woodwork - making a bench for a shelter including a light circuit Enterprise Week Mechanics - (Billy and The Whale problem science investigation)
Apply their understanding of computing to program, monitor and control their products.	18,22	Spring 2 - Evolution Summer 1 - A whale of a time	<ul style="list-style-type: none"> Enterprise Week Mechanics - (Billy and The Whale problem science investigation)
Understand and apply the principles of a healthy and varied diet	23	Summer 2 - The Arrival	<ul style="list-style-type: none"> Healthy Living Week

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	24	Autumn 1 - This is Me	<ul style="list-style-type: none"> • Cooking - Spanish Day making seasonal, savoury goods linked to that country
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	25	Summer 2 - The Arrival	<ul style="list-style-type: none"> • Cooking - making bread. Forest School Link.