

DT Medium Term Planning

Key Knowledge

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.

Cooking & Nutrition:

As part of their work with food, pupils should

be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

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.

Cycle A

Year group 5/6	Design	Make	Evaluate	Technical knowledge	Cooking and nutrition
<p>Autumn 2 Stuffed toys (Textiles)</p>	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 textiles according to their functional properties and aesthetic qualities 	
<p>GDS Opportunities</p>	<ul style="list-style-type: none"> Do they think what the user would want when choosing textiles? How have they made their product attractive and strong? Can they make up a prototype first? 				

- Can they use a range of joining techniques?
- Are their measurements accurate enough to ensure that everything is precise?
- How have they ensured that their product is strong and fit for purpose?
- Have they thought about how their product could be sold?
- Have they given considered thought about what would improve their product even more?

Spring 2
Pop up books
(Mechanisms)

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| <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] |
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GDS Opportunities

- Can they justify why they selected specific materials?
- Can they work within a budget?

- How have they ensured that their work is precise and accurate?
- Can they hide joints so as to improve the look of their product?

Summer 2
Navigating the World
(Digital worlds)

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| <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately | <ul style="list-style-type: none"> • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work | <ul style="list-style-type: none"> • Apply their understanding of computing to program, monitor and control their products | |
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GDS Opportunities

- Can they incorporate a switch into their product?
- Can they refine their product after testing it?
- Can they incorporate hydraulics and pneumatics?

Cycle B

Year group 5/6	Design	Make	Evaluate	Technical knowledge	Cooking and nutrition
<p>Autumn 2 Come dine with me (Food and Nutrition)</p>	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, mixing, decorating accurately select from and use a wider range of equipment and ingredients according to their functional properties and aesthetic qualities 	<ul style="list-style-type: none"> Understand and apply principles of a healthy and varied diet Prepare and cook 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
<p>GDS Opportunities</p>	<ul style="list-style-type: none"> Can they describe what they do to be both hygienic and safe? How have they presented their product well? Can they explain how their product should be stored with reasons? Can they set out to grow their own products with a view to making a salad, taking account of time required to grow different foods? 				
<p>Spring 2 Bridges (Structures)</p>	<ul style="list-style-type: none"> Use research and develop design criteria to inform the design of innovative, functional, appealing 	<ul style="list-style-type: none"> Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, 	<ul style="list-style-type: none"> Investigate and analyse a range of existing products Evaluate their ideas and products against their own design 	<ul style="list-style-type: none"> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	

	<p>products that are fit for purpose, aimed at particular individuals or groups</p> <ul style="list-style-type: none"> • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<p>joining and finishing], accurately</p> <ul style="list-style-type: none"> • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics 	<p>criteria and consider the views of others to improve their work</p>		
<p>GDS Opportunities</p>	<ul style="list-style-type: none"> • Did they consider the use of the product when selecting materials? • Does their product meet all design criteria? • Have they thought about how their product could be sold? • Have they given considered thought about what would improve their product even more? • Can they justify why they selected specific materials? • Can they work within a budget? • How have they ensured that their work is precise and accurate? • Can they hide joints so as to improve the look of their product? 				
<p>Summer 2 Doodlers (Electrical systems)</p>	<ul style="list-style-type: none"> • Use research and develop design criteria to inform the design of innovative, functional, 	<ul style="list-style-type: none"> • Select from and use a wider range of tools and equipment to perform practical tasks [for example, 	<ul style="list-style-type: none"> • Investigate and analyse a range of existing products • Evaluate their ideas and products against 	<ul style="list-style-type: none"> • Apply their understanding of how to strengthen, stiffen and reinforce more complex 	

	<p>appealing products that are fit for purpose, aimed at particular individuals or groups</p>	<p>cutting, shaping, joining and finishing], accurately</p>	<p>their own design criteria and consider the views of others to improve their work</p>	<p>structures</p> <ul style="list-style-type: none"> • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] 	
<p>GDS Opportunities</p>	<ul style="list-style-type: none"> • Can they use different kinds of circuits in their product? • Can they think of ways in which adding a circuit would improve their product? 				