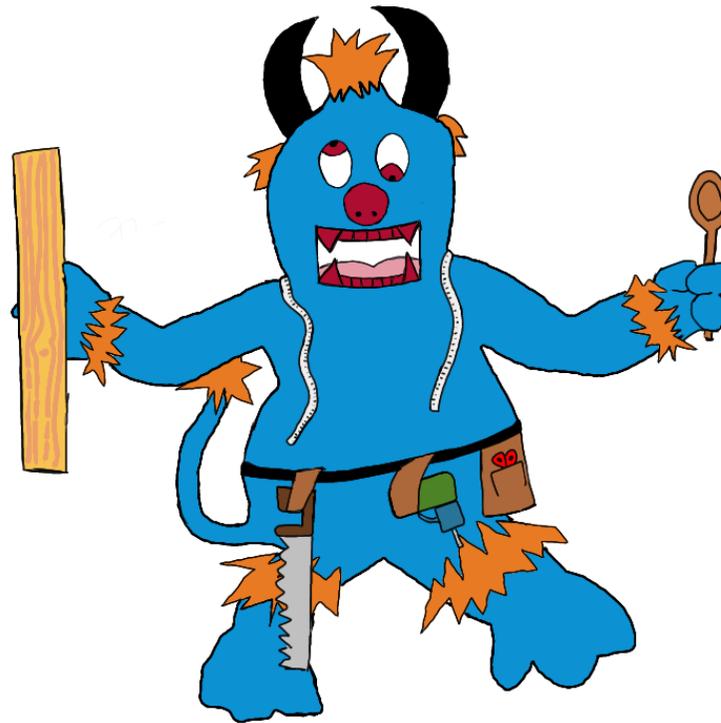


Design & Technology Intention Map

Lower Key Stage Two



Placing learning at the heart of everything we do.



Lower KS2 Intention Map 2021 - 2022



Learning Intentions

1. Investigate and identify the design features of a familiar product.
2. Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products.
3. Use annotated sketches and exploded diagrams to test and communicate their ideas.
4. Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them.
5. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.
6. Choose from a range of materials, showing an understanding of their different characteristics.



Mighty Metals

Knowledge Intentions

1. Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.
2. Levers consist of a rigid bar that rotates around a fixed point, called a fulcrum. They reduce the amount of work needed to lift a heavy object. Sliders move from side to side or up and down and are often used to make moving parts in books. Axles are shafts on which wheels can rotate to make a moving vehicle. Cams are devices that can convert circular motion into up-and-down motion.
3. Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.
4. A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them).
5. Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

End products: evidence of a design & make process that leads to a structure with a working lift shaft.

The Workshop



Shanghai Tower

Petronas Towers



Al Burj Khalifa



Empire State Building





Learning Intentions

1. Investigate and identify the design features of a familiar product.
2. Use annotated sketches and exploded diagrams to test and communicate their ideas.
3. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.
4. Choose from a range of materials, showing an understanding of their different characteristics.
5. Explain how and why a significant designer or inventor shaped the world.



Tribal Tales

Knowledge Intentions

1. Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.
2. Annotated sketches and exploded diagrams show specific parts of a design, highlight sections, or show functions. They communicate ideas in a visual, detailed way.
3. Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.
4. Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.
5. Significant designers and inventors can shape the world.

End products: evidence of a design & make process that leads to a completed piece of jewellery.

The Design Studio



Jeanne Boivin

Suzanne Belperron



**Louis-Francois
Cartier**





Learning Intentions

1. Explain how an existing product benefits the user.
2. Investigate and identify the design features of a familiar product.
3. Use annotated sketches and exploded diagrams to test and communicate their ideas.
4. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.
5. Design a healthy snack or packed lunch and explain why it is healthy.
6. Identify and use a range of cooking techniques to prepare a simple meal.



Tremors

Knowledge Intentions

1. Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.
2. Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.
3. Cooking techniques include baking, boiling, frying, grilling and roasting.
4. Healthy snacks include fresh or dried fruit and vegetables, nuts and seeds, rice cakes with low-fat cream cheese, homemade popcorn or chopped vegetables with hummus. A healthy packed lunch might include a brown or wholemeal bread sandwich containing eggs, meat, fish or cheese, a piece of fresh fruit, a low-sugar yoghurt, rice cake or popcorn and a drink, such as water or semi-skimmed milk.

End products: evidence of a research of Italian food & design process that leads to a Healthy Italian menu and a cooked pasta meal.

The Kitchen



Gennaro Contaldo

Gino D'Acampo



Massimo Bottura



Lower KS2 Intention Map 2022 - 2023



Learning Intentions

1. Investigate and identify the design features of a familiar product.
2. Incorporate a simple series circuit into a model.
3. Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products.
4. Use annotated sketches and exploded diagrams to test and communicate their ideas.
5. Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them.
6. Select, name and use tools with adult supervision.
7. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.



I am Warrior

Knowledge Intentions

1. Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.
2. Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.
3. A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them).
4. Useful tools for cutting include scissors, craft knives, junior hacksaws with pistol grip and bench hooks. Useful tools for joining include glue guns. Tools should only be used with adult supervision and safety rules must be followed.
5. Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.

End products: evidence of a design & make process leading to producing their own working prototype electric powered vehicle.

The Workshop



Mate Rimac

Elon Musk



Henrik Fisker



Learning Intentions

1. Investigate and identify the design features of a familiar product.
2. Use annotated sketches and exploded diagrams to test and communicate their ideas
3. Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them.
4. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.
5. Select, name and use tools with adult supervision.
6. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.
7. Choose from a range of materials, showing an understanding of their different characteristics
8. Investigate and identify the design features of a familiar product.



Potions

Knowledge Intentions

1. Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.
2. Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.
3. A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials. Shell and frame structures can be strengthened by gluing several layers of card together, using triangular shapes rather than squares, adding diagonal support struts and using 'Jinks' corners (small, thin pieces of card cut into a right-angled triangle and glued over each joint to straighten and strengthen them).
4. Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.
5. Useful tools for cutting include scissors, craft knives, junior hacksaws with pistol grip and bench hooks. Useful tools for joining include glue guns. Tools should only be used with adult supervision and safety rules must be followed.
6. Different materials and components have a range of properties, making them suitable for different tasks. It is important to select the correct material or component for the specific purpose, depending on the design criteria. Recipe ingredients have different tastes and appearances. They look and taste better and are cheaper when in season.
7. Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable.

End products: evidence of a design & make process before producing a useable pencil case.

The Workshop

Jony Ive



Margaret Calvert

James Dyson





Learning Intentions

1. Use annotated sketches and exploded diagrams to test and communicate their ideas. Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.
2. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements. Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.
3. Identify and use a range of cooking techniques to prepare a simple meal. Cooking techniques include baking, boiling, frying, grilling and roasting.
4. Design a healthy snack or packed lunch and explain why it is healthy. Healthy snacks include fresh or dried fruit and vegetables, nuts and seeds, rice cakes with low-fat cream cheese, homemade popcorn or chopped vegetables with hummus. A healthy packed lunch might include a brown or wholemeal bread sandwich containing eggs, meat, fish or cheese, a piece of fresh fruit, a low-sugar yoghurt, rice cake or popcorn and a drink, such as water or semi-skimmed milk.
5. Identify and name foods that are produced in different places in the UK and beyond. Particular areas of the world have conditions suited to growing certain crops, such as coffee in Peru and citrus fruits in California in the United States of America.



Bottoms, Burps & Bile

Knowledge Intentions

1. Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way.
2. Evaluation can be done by considering whether the product does what it was designed to do, whether it has an attractive appearance, what changes were made during the making process and why the changes were made. Evaluation also includes suggesting improvements and explaining why they should be made.
3. Cooking techniques include baking, boiling, frying, grilling and roasting.
4. Healthy snacks include fresh or dried fruit and vegetables, nuts and seeds, rice cakes with low-fat cream cheese, homemade popcorn or chopped vegetables with hummus. A healthy packed lunch might include a brown or wholemeal bread sandwich containing eggs, meat, fish or cheese, a piece of fresh fruit, a low-sugar yoghurt, rice cake or popcorn and a drink, such as water or semi-skimmed milk.
5. Particular areas of the world have conditions suited to growing certain crops, such as coffee in Peru and citrus fruits in California in the United States of America.

End products: evidence of a research on seasonal produce leading to the production of a seasonal healthy snack.

The Kitchen

Dan Barber



April Bloomfield

Joan Roca



Checklist



National Curriculum Programme of Study		2020 - 2021	2021 - 2022
Design & Technology	Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.	T1, T2, T3	T1, T2, T5
	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.	T1, T2, T3	T1, T2, T5
	Critique, evaluate and test their ideas and products and the work of others.	T1, T2, T3	T1, T2, T5
	Understand and apply the principles of nutrition and learn how to cook.	T3	T5
	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.	T1, T2, T3	T1, T2, T5
	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	T1, T2, T3	T1, T2, T5
	Make		
	Select from and use a wider range of tools and equipment to perform practical tasks accurately.	T1, T2, T3	T1, T2, T5
	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.	T1, T2	T1, T2
	Evaluate		
	Investigate and analyse a range of existing products.	T1, T2	T1, T2
	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	T1, T2	T1, T2
	Understand how key events and individuals in design and technology have helped shape the world.	T1, T2	T1, T2
	Technological Knowledge		
	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	T1, T2	T1, T2
	Understand and use mechanical systems in their products.	T1	T1
	Understand and use electrical systems in their products.	T1	T1
	Apply their understanding of computing to programme, monitor and control their products.	T1	T1
	Cooking & Nutrition		
Understand and apply the principles of a healthy and varied diet.	T3	T5	
Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.	T3	T5	
Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes].	T3	T5	
Understand the source, seasonality and characteristics of a broad range of ingredients.	T3	T5	

	YEAR A 2020 - 2021						Year B 2021 - 2022					
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Develop Expertise												
Build & apply knowledge												
Critique & evaluate												
Principles of nutrition												
Design												
Make												
Evaluate												
Technical Knowledge												
Cooking & Nutrition												