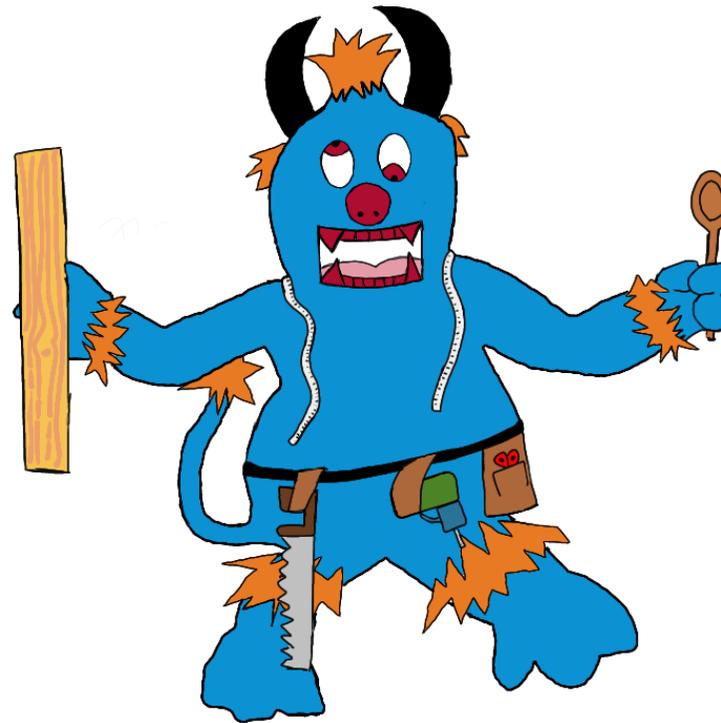


# **Design & Technology Intention Map**

## **Upper Key Stage Two**



**Placing learning at the heart of everything we do.**



## Upper KS2 Intention Map 2021 - 2022



### Learning Intentions

1. Explain the functionality and purpose of safety features on a range of products.
2. Use electrical circuits of increasing complexity in their models or products, showing an understanding of control.
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. Test and evaluate products against a detailed design specification and make adaptations as they develop the product.
7. Select and combine materials with precision.
8. Use a sensor to monitor an environmental variable, such as temperature, sound or light.



### Stargazer

### Knowledge Intentions

1. Electrical circuits can be controlled by a simple on/off switch, or by a variable resistor that can adjust the size of the current in the circuit. Real-life examples are a dimmer switch for lights or volume control on a stereo.
2. A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products.
3. Precision is important in producing a polished, finished product. Correct selection of tools and careful measurement can ensure the parts fit together correctly.
4. Testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to a design during manufacture.
5. Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques.
6. Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.
7. Computer monitoring uses sensors as a scientific tool to record information about environmental changes over time. Computer monitoring can also log data from sensors and record the resulting information in a table or graph.

End product: evidence of a design & make process for a lunar buggy that includes data monitoring equipment.

### The Workshop



**Tim Peake**



**Lunar Buggy**

**Neil Armstrong**





## Learning Intentions

1. Use an increasing range of preparation and cooking techniques to cook a sweet or savoury dish.
2. Follow a recipe that requires a variety of techniques and source the necessary ingredients independently.
3. Evaluate meals and consider if they contribute towards a balanced diet.
4. Plan a healthy weekly diet, justifying why each meal contributes towards a balanced diet.
5. Explain how organic produce is grown.
6. Create a detailed comparative report about two or more products or inventions.



## A Childs War

1. Sweet dishes are usually desserts, such as cakes, fruit pies and trifles. Savoury dishes usually have a salty or spicy flavour rather than a sweet one.
2. Ingredients can usually be bought at supermarkets, but specialist shops may stock different items. Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual, prepared foods, as well as cold meats and cheeses.
3. A balanced diet gives your body all the nutrients it needs to function correctly. This means eating a wide variety of foods in the correct proportions.
4. Eating a balanced diet is a positive lifestyle choice that should be sustained over time. Food that is high in fat, salt or sugar can still be eaten occasionally as part of a balanced diet.
5. Organic produce is food that has been grown without the use of man-made fertilisers, pesticides, growth regulators or animal feed additives. Organic farmers use crop rotation, animal and plant manures, hand-weeding and biological pest control.
6. Products and inventions can be compared using a range of criteria, such as the impact on society, ease of use, appearance and value for money.

End product: evidence of a comparison between a wartime menu and one from today followed by the production of wartime packed lunch.

## Knowledge Intentions

## The Kitchen



**Marguerite Patten**

**Georgina Landemare**





## ID

### Learning Intentions

### Knowledge Intentions

1. Explain how the design of a product has been influenced by the culture or society in which it was designed or made.
2. Explain the functionality and purpose of safety features on a range of products.
3. Use pattern pieces and computer-aided design packages to design a product.
4. Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.
5. Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.
6. Choose the best materials for a task, showing an understanding of their working characteristics.
7. Present a detailed account of the significance of a favourite designer or inventor.

1. Culture is the language, inventions, ideas and art of a group of people. A society is all the people in a community or group. Culture affects the design of some products. For example, knives and forks are used in the western world, whereas chopsticks are used mainly in China and Japan. The design of products needs to consider the culture of the target audience. For example, colours might mean very different things in different cultures.
2. A pattern piece is a drawing or shape used to guide how to make something. There are many different computer-aided design packages for designing products.
3. Precision is important in producing a polished, finished product. Correct selection of tools and careful measurement can ensure the parts fit together correctly.
4. Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.
5. It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.
6. The significance of a designer or inventor can be measured in various ways. Their work may benefit society in health, transport, communication, education, the built environment or technology. It may enhance culture in different areas, such as fashion, ceramics or computer games.

End product: evidence of a design & make process leading to producing a bag that best reflects their personality & personal choice.

## The Design Studio



**Louis Vuitton**

**Dior**



**Gucci**

**Michael Kors**





## Upper KS2 Intention Map 2022 - 2023



### Learning Intentions

1. *Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.*
2. *Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.*
3. *Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.*
4. *Follow a recipe that requires a variety of techniques and source the necessary ingredients independently.*
5. *Choose the best materials for a task, showing an understanding of their working characteristics.*



### Blood Heart

1. *Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.*
2. *Strength can be added to a framework by using multiple layers. For example, corrugated cardboard can be placed with corrugations running alternately vertically and horizontally. Triangular shapes can be used instead of square shapes because they are more rigid. Frameworks can be further strengthened by adding an outer cover.*
3. *Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.*
4. *Ingredients can usually be bought at supermarkets, but specialist shops may stock different items. Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual, prepared foods, as well as cold meats and cheeses.*
5. *It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.*

End product: evidence of a design & make process leading to making a stethoscope fit for purpose.

### Knowledge Intentions

## The Design Studio



**Rene Laennec**

**Stethoscope**





## Learning Intentions

1. Explain how the design of a product has been influenced by the culture or society in which it was designed or made.
2. Follow a recipe that requires a variety of techniques and source the necessary ingredients independently.
3. Plan a healthy weekly diet, justifying why each meal contributes towards a balanced diet.
4. Explain how organic produce is grown.



## Hola Mexico

## Knowledge Intentions

1. Culture is the language, inventions, ideas and art of a group of people. A society is all the people in a community or group. Culture affects the design of some products. For example, knives and forks are used in the western world, whereas chopsticks are used mainly in China and Japan. The design of products needs to consider the culture of the target audience. For example, colours might mean very different things in different cultures.
2. Ingredients can usually be bought at supermarkets, but specialist shops may stock different items. Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual, prepared foods, as well as cold meats and cheeses.
3. Eating a balanced diet is a positive lifestyle choice that should be sustained over time. Food that is high in fat, salt or sugar can still be eaten occasionally as part of a balanced diet.
4. Organic produce is food that has been grown without the use of man-made fertilisers, pesticides, growth regulators or animal feed additives. Organic farmers use crop rotation, animal and plant manures, hand-weeding and biological pest control.

End products: evidence of a study around organic food & farming as well as research on Mexican food leading to preparing a Mexican snack.

## The Kitchen



**Enrique Olvera**



**Benito Molina**



**Zarela Martinez**



## Learning Intentions

1. Analyse how an invention or product has significantly changed or improved people's lives.
2. Explain the functionality and purpose of safety features on a range of products.
3. Use electrical circuits of increasing complexity in their models or products, showing an understanding of control.
4. Test and evaluate products against a detailed design specification and make adaptations as they develop the product.
5. Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.
6. Choose the best materials for a task, showing an understanding of their working characteristics.



## Alchemy Island

## Knowledge Intentions

1. Safety features are often incorporated into products that might cause harm. Some examples include the child-safety caps on medicine bottles, seatbelts in cars, covers for electrical sockets and finger guards on doors.
2. Electrical circuits can be controlled by a simple on/off switch, or by a variable resistor that can adjust the size of the current in the circuit. Real-life examples are a dimmer switch for lights or volume control on a stereo.
3. Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
4. Design is an iterative process, meaning alterations and improvements are made continually throughout the manufacturing process. Evaluating a product while it's being manufactured, and explaining these evaluations to others, can help to refine it.
5. It is important to understand the characteristics of different materials to select the most appropriate material for a purpose. This might include flexibility, waterproofing, texture, colour, cost and availability.

End product: evidence of a design & make process leading to making a torch fit for purpose.

## The Workshop



**David Misell**



# Checklist



<b>National Curriculum Programme of Study</b>		<b>2021 - 2022</b>	<b>2022 - 2023</b>
<b>Design &amp; Technology</b>	Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.	T3, T4, T6	T1, T4, 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.	T3, T4, T6	T1, T4, T5
	Critique, evaluate and test their ideas and products and the work of others.	T3, T4, T6	T1, T4, T5
	Understand and apply the principles of nutrition and learn how to cook.	T4	T4
	<b>Design</b>		
	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.	T3, T4, T6	T1, T4, T5
	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	T3, T4, T6	T1, T4, T5
	<b>Make</b>		
	Select from and use a wider range of tools and equipment to perform practical tasks accurately.	T3, T4, T6	T1, T4, 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.	T3, T6	T1, T5
	<b>Evaluate</b>		
	Investigate and analyse a range of existing products.	T3, T4, T6	T1, T4, T5
	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	T3, T4, T6	T1, T4, T5
	Understand how key events and individuals in design and technology have helped shape the world.	T3, T4, T6	T1, T4, T5
	<b>Technological Knowledge</b>		
	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	T3, T6	T5
	Understand and use mechanical systems in their products.	T3	
	Understand and use electrical systems in their products.	T3	T5
	Apply their understanding of computing to programme, monitor and control their products.	T3	T5
	<b>Cooking &amp; Nutrition</b>		
Understand and apply the principles of a healthy and varied diet.	T4	T4	
Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.	T4	T4	
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]	T4	T4	
Understand the source, seasonality and characteristics of a broad range of ingredients.	T4	T4	

	YEAR A 2021 - 2022						Year B 2022 - 2023					
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 1	Term 2	Term 3	Term 4	Term 5	Term 5
Develop Expertise												
Build & Apply Knowledge												
Critique & Evaluate												
Principles of Nutrition												
Design												
Make												
Evaluate												
Technical Knowledge												
Cooking & Nutrition												