# Design Technology

| Knowledge Building |
| --- |
| **Food Technology** |
| **Food technology** is an area that focuses on the production, research, development, preservation and quality control of food products. It features a range of techniques in food preparation, as well as recognising the need for hygiene when working with food. Pupils will know where food comes from, how to prepare food safely, with and without a heat source, and finally explore different techniques used to make a wider range of dishes. There is a link with science here |
| **Users and Purposes** |
| In design technology, **users** are defined by the people who will use the product that is being designed. **Purpose** relates to designing solutions to improve people's lives. These two components need to work harmoniously together in order to create a design, and then, ultimately, a product that suits both. By making pupils aware of these two aspects, they can see how design technology evolves and develops until they recognise that some designs have impact beyond their intended **user and purpose**. |
| **Product Research** |
| **Product research** is the process of deciding which new products will be successful and then seeing how they could be developed. It can also involve looking at any existing similar products. Initially research is very basic in terms of like and dislike, but deeper research looks into aesthetics, functionality and the materials used. Pupils will expand their research skills to include these different areas and, ultimately, be able to link them to **users and purposes.** |
| **Design Technology Vocabulary** |
| The language of design technology can be broken down into different categories such as: the language of **design** e.g. draw, sketch, user, purpose; the language of **making**, for example, tools, equipment, materials and the language of **evaluation**, including discussion about the product, asking questions about its useability, reviewing and checking. |
| **Product Features** |
| **Product features** are aspects that make a product useful, fit for purpose and, sometimes, unique. They are attributes that appeal to **users** and make that particular product distinct. When designing a product, the features need to appeal to users, need to fulfil the purpose of the product and be influenced by research into products that may do the same thing. This aspect has strong links with **users and purposes** and **product research**. Pupils will learn how to identify features, discuss how useful they are and then explore how **product features** they actually benefit the product in terms of performance and usability. |
| **Invention and Development** |
| Design technology can be looked as two strands: **invention and development. Invention** is the process of thinking and making new products. The people who do this are **inventors. Development** looks at products and ideas that already exist and finds ways of making them better. It is important that pupils recognise that adapting and innovating designs / products is key in making new things. Initially, pupils will find out about well-known inventors and how their products and designs have improved life for others. They will learn about the need for problem-solving skills during the invention process, so that a product can be as functional and usable as possible. Pupils will also find out about copyrighting, trademarks and patenting ideas and products. |

# Design Technology

## ADVENTURERS YEAR 3&4

| Knowledge Building | | | | | |
|---|---|---|---|---|---|
| **Food Technology** | **Users and Purposes** | **Product Research** | **Design Technology Vocabulary** | **Product Features** | **Invention and Development** |
| Know how to prepare and cook safely and hygienically, including use of a heat source | Understand the purpose of their product and know which design features will appeal to intended users | Understand the link between choice of materials, functionality and aesthetics | Know the names of a wide range of tools and techniques, including how to employ them | Understand how important performance and appearance are in product design | Understand the role and importance of problem-solving within the invention process |

| Skills Progression | |
|---|---|
| **Design Technology Skills Adventurers 1 / Y3** | **Design Technology Skills Adventurers 2 / Y4** |
| Dt21 Generate, develop and explain ideas for products to meet a range of needs<br>Dt22 Explore ways of meeting design challenge with a food focus using a range of cooking techniques<br>Dt23 Identify a purpose and establish criteria for a successful product<br>Dt24 Evaluate work, adapting and improving where appropriate<br>Dt25 Communicate, design ideas in different ways e.g. discussion, annotated sketches, cross-sectional diagrams and prototypes<br>Dt26 Selecting appropriate tools and techniques, name and describe them<br>Dt27 Measure, mark, cut out and shape a range of materials and assemble, join and combine components and materials with some accuracy | D28 Use research to inform their design<br>Dt29 Explore ways of meeting design challenges with a textile focus<br>D30 Evaluate work, adapting and improving through the views of others to improve their work<br>Dt31 Communicate design ideas, in different ways e.g. discussion, annotated sketches, cross-sectional diagrams and prototypes<br>Dt32 Select from and use a range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities<br>Dt33 Join and combine materials and components accurately in temporary and permanent ways<br>Dt34 Measure, mark, cut out and shape a range of materials and assemble, join and combine components and materials with increasing accuracy |

# Design Technology

## Knowledge Progression

### Adventurers 1 / Year 3

**Lightning Speed**

Pupils will be using The Extraordinaires Evil Genius project in this unit. They will be familiar with the initial processes of studying the persona of the user, their needs analysis and what it is they are designing. In Adventurers, pupils will be expected to work through the stages in more detail, for example, when thinking of ways to improve, they will need to analyse a specific feature of their design and describe how it could be made better. Pupils will need to consider how they will make their product not only functional but also look attractive to the user.

**Concepts**

**NC -** 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

**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

**NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately

**NC -** 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

**NC -** Investigate and analyse a range of existing products

**NC -** Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

- Design and make a model of a new communications device for the Evil Genius

**LAW AND ORDER - Mechanisms - Levers and Linkages 1**

Pupils will embed and build on previous knowledge of how to construct and use levers by integrated them with linkages. They will explore a range of lever and linkage types and their methods of construction. Pupils will use this knowledge by designing and making a celebration card using one of these moving levers. Thoughtful and considered design is needed in this task.

**Skills Development Task**

**Concepts**

**NC -** Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)

- Construct some of the examples of levers and linkages
- Design, make and evaluate a celebration card that includes a mechanical system. The picture must use levers and linkages

**ATHENS VS SPARTA - Mechanisms - Structures**

In Pathfinders, pupils learnt that good design is an importance component in the construction of strong structures. In this unit, pupils will discover how a strong structure and an accurate mechanism can be combined to make a siege weapon. Pupils will need to carefully consider the purpose of their product and include some key features to allow it to work. They will also need to work through processes of problem solving in order to achieve the best firing mechanism.

**Skills Development Task**

**Concepts**

### Adventurers 2 / Year 4

**Under The Canopy**

Pupils will be using The Extraordinaires Tribal Child project in this unit. They will be familiar with the initial processes of studying the persona of the user, their needs analysis and what it is they are designing. In Adventurers, pupils will be expected to work through the stages in more detail, for example, when thinking of ways to improve, they will need to revisit the user's profile and assess how their design could be made more suitable. Pupils need to think carefully about the materials being used with links to functionality and aesthetics.

**Concepts**

**NC -** 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

**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

**NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately

**NC -** 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

**NC -** Investigate and analyse a range of existing products

**NC -** Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

- Design and make a prototype of a new toy for tribal child made of natural materials

**THAT'S ALL FOLKS - Mechanisms - Levers and Linkages 2**

Pupils will embed and build on previous knowledge of how to construct and use levers by integrated them with linkages. They will explore a range of lever and linkage types and their methods of construction. In this second part, pupils will design a 'puppet' with a scissor mechanism that could be used in a stop-motion animation. Thoughtful and considered design is needed in this task.

**Skills Development Task**

**Concepts**

**NC -** 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

**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

**NC -** Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)

- Design, make and evaluate a prop or model to be used in an animation.

**PICTURE OUR PLANET - Textiles**

Pupils already have some experience of working with textiles and combining two pieces of materials together using needle and thread. In this unit, pupils will need to use sewing skills to make a soft toy, therefore they will learn how to use stuffing to pad out two pieces of fabric. They will also need to consider how their toy looks as well as being robust enough for a toddler to play with.

**Skills Development Task**

**Concepts**

**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

# Design Technology

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|---|---|
| **NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately<br>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures<br>• Design, make and evaluate a siege weapon (trebuchet) | **NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately<br>**NC -** 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<br>**NC -** Investigate and analyse a range of existing products<br>• Design and make an animal soft toy, aimed at toddlers, in association with the Scottish Wildlife Trust |
| **COME FLY WITH ME! AFRICA - Food Technology**<br>This unit focuses on food technology. Pupils will expand their understanding of where food comes from by recognising that a lot of food products come from African countries, and they will look at Fairtrade as an organisation that ensures farmers and growers get a fair price for their produce. Pupils will learn how to prepare and make a range of African inspired dishes. They will need to consider hygiene and safety when using heat sources and also think about how their food is presented from a design technology perspective.<br>**Concepts**<br>**NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately<br>**NC -** 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<br>**NC -** Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques<br>**NC -** Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed<br>• To learn some basic cooking skills | **PICTURE OUR PLANET - Food Technology**<br>Pupils will learn about the history of the traditional Scottish sweet, Tablet. They will need to follow the recipe provided and then experiment with different flavours to make it individual to them. They will take feedback on their creations, and this could then be expanded to selling their flavoured table at a later date.<br>**Concepts**<br>**NC -** understand and apply the principles of a healthy and varied diet<br>• To make the traditional Scottish sweet, tablet |

## Food Technology within PSHE

### Adventurers

**Design Technology - Cooking and Nutrition**

- **Understand and apply the principles of a healthy and varied diet (NC)**
- **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (NC)**
- **Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed (NC)**

**Core 1 Unit 3 Lesson 1: A Balanced Diet – Plant or Animal (within Come Fly with Me! Africa)**

- Know what constitutes a healthy diet (including understanding calories and other nutritional content)
- Know where different foods come from

**Core 1 Unit 3 Lesson 2: A Balanced Diet – Balancing Act (within Come Fly with Me! Africa)**

- Know what constitutes a healthy diet (including understanding calories and other nutritional content)

Know about and understand the function of different food groups for a balanced diet

**Core 1 Unit 3 Lesson 3: Working With Food – Master Chef**
**Concepts**

- Know the principles of planning and preparing a range of healthy meals

**Core 1 Unit 3 Lesson 4: Working With Food – Our Food Hall**
**Concepts**

- Learn to prepare and cook a variety of dishes

**Key Vocabulary**

plant
animal
protein
carbohydrate
vitamin
fats
balanced
diet
nutrition
healthy lifestyle

# Design Technology

## Key Vocabulary

### Adventurers 1 / Year 3

#### Come Fly With Me! Africa

| | | | |
|---|---|---|---|
| seeds | preparation | dice | blend |
| grow | method | slice | food hygiene |
| produce | servings | simmer | |
| seasonality | grams | boil | |
| season (salt & pepper) | ounces | griddle | |
| ingredient | tbsp / tsp | fry | |
| | mix | bake | |

#### Lightning Speed

| | | |
|---|---|---|
| profile | evaluate | communication |
| detail | user | device |
| needs | product | invention |
| needs analysis | purpose | gadgets |
| research | use | robots |
| design | Evil Genius | |

#### Law and Order & That's All Folks - Levers and Linkages

| | |
|---|---|
| paper fastener | scissor mechanism |
| link | model |
| rotate | puppet |
| slide | |
| operate | |
| pivot point | |

### Adventurers 2 / Year 4

#### Under The Canopy

| | | |
|---|---|---|
| profile | evaluate | traditional methods |
| detail | user | natural materials |
| needs | product | |
| needs analysis | purpose | |
| research | use | |
| design | Tribal Child | |

#### Athens vs Sparta - Structures

| | | |
|---|---|---|
| design | MDF (medium density | bench hook |
| model | fibreboard) | dowel |
| siege weapon | washer | plan view |
| trebuchet | screw | |
| construct | saw | |
| timber | clamp/peg | |

#### Picture Our Planet - Textiles

| | |
|---|---|
| soft toy | materials |
| template | wool |
| outline / pattern | toddlers' toy |
| pin | |
| sew | |
| stuffing | |

#### Picture Our Planet – Food Technology (Scottish Tablet)

| | |
|---|---|
| condensed milk | flavour |
| caster sugar | |
| vanilla extract | |
| spread | |
| whisk | |

# Design Technology

## NAVIGATORS YEAR 5&6

| Knowledge Building | | | | | |
|---|---|---|---|---|---|
| **Food Technology** | **Users and Purposes** | **Product Research** | **Design Technology Vocabulary** | **Product Features** | **Invention and Development** |
| Know how to use a range of techniques such as peeling, slicing, grating, kneading and spreading | Know what impact products have beyond their intended purpose | Know how to gather information about the needs and wants of groups and individuals | Know the correct technical vocabulary for the projects they are undertaking | Understand the relationship between a product's features and its functionality and usability | Know and understand the importance of patent, copyright and trademark in the design process |

| Skills Progression | |
|---|---|
| **Design Technology Skills Navigators 1 / Y5** | **Design Technology Skills Navigators 2 / Y6** |
| Dt35 Investigate ways of meeting design challenges with a construction focus<br>Dt36 Investigate how the work of individuals in design and technology has helped to shape the world<br>Dt37 Identify users' views and take these into account<br>Dt38 Analyse a range of existing products<br>Dt39 Estimate and measure using appropriate instruments and units<br>Dt40 Plan what they have to do, including how to use materials, equipment and processes<br>Dt41 Communicate design ideas in different ways e.g. discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design<br>Dt42 Apply knowledge of mechanical and electrical control when designing and making functional products<br>Dt43 Refine sequences of instructions to control events or make things happen | Dt44 Explore alternative ways of making their product, if first attempts fail<br>Dt45 Check work as it develops and modify as necessary<br>Dt46 Evaluate their products, identifying strengths and areas or development, and make appropriate changes<br>Dt47 Draw on and use various sources of information, including ICT sources<br>Dt48 Generate and clarify ideas for products, considering intended purpose<br>Dt49 Plan what they have to do, suggesting a sequence of actions and alternatives if needed<br>Dt50 Choose how to communicate design ideas as they develop, considering use and purpose<br>Dt51 Select from a wide range of tools and equipment to perform practical tasks accurately |

# Design Technology

## Knowledge Progression

| Navigators 1 / Year 5 | Navigators 2 / Year 6 |
|---|---|
| **You're Not Invited**<br>Pupils will be using The Extraordinaires Soldier project in this unit. Pupils will have extensive experience of the processes involved in researching, designing, making and evaluating for a range of products for a variety of users. In this unit, pupils are required to consider the needs of a real-life Extraordinaire. They will need to think about the impact their product has beyond its intended purpose; how will work with the rest of the Soldier's equipment? Pupils will also need to address the relationship between the product's features and its functionality.<br>**Concepts**<br>**NC -** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed a particular individuals or groups<br>**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design<br>**NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately<br>**NC -** 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<br>**NC -** Investigate and analyse a range of existing products<br>**NC -** Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work<br>• Design and make a sleeping place suitable for a soldier | **Mission Control**<br>Pupils will be using The Extraordinaires Spaceman project in this unit. Pupils will have extensive experience of the processes involved in researching, designing, making and evaluating for a range of products for a variety of users. In this unit, pupils are required to consider the needs of a real-life Extraordinaire. They will need to think about the impact their product has beyond its intended purpose; how will work with the rest of the Spaceman's equipment and in his limited workspace? Pupils will also need to address the relationship between the product's features and its functionality.<br>**Concepts**<br>**NC -** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed a particular individuals or groups<br>**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design<br>**NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately<br>**NC -** 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<br>**NC -** Investigate and analyse a range of existing products<br>**NC -** Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work<br>• Design and make a model of a time-keeping device suitable for a spaceman |
| **A World Of Bright Ideas**<br>Pupils will be introduced to new vocabulary and understand how important patent, trademark and copyright are in the invention and development of products. They will compare brand names and logos; recognising that a memorable logo is a great way of encouraging people to remember a brand or product.<br>**Concepts**<br>**NC-** Understand how key events and individuals in design and technology have helped shape the world<br>• To understand the meaning of the term 'copyright' and learn about why it is important<br>• To know about and understand what a patent is<br>• To know about and understand what a trademark is<br>• To design a new brand for a range of greetings cards | **I HAVE A DREAM - Textiles**<br>Pupils will draw on the knowledge and skills learn in previous pathways to create a useable and aesthetically pleasing textile product. They will use sewing skills to join more than one piece of fabric together using more complex stitches, as well as have potential opportunity to use a sewing machine. They will need to stuff and secure their cushion so that it is comfortable for someone to use.<br>**Skills Development Task**<br>**Concepts**<br>**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design<br>**NC -** 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<br>• Make a cushion following a pattern |
| **WARS OF THE WORLD - Electronics 1**<br>Through science, pupils have experimented with designing, making and testing a range of electrical circuits with different components. Now, they will implement this knowledge and these skills to produce a circuit that has a clear purpose. Pupils will need to consider the features of their circuit and how it relates to its functionality. They will also address that their design has impact in other ways.<br>**Skills Development Task**<br>**Concepts**<br>**NC -** Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors<br>**NC -** Apply their understanding of computing to program, monitor and control their products<br>• Design, make and evaluate a device to send Morse Code signals | **FULL OF BEANS - Electronics 2**<br>Through science, pupils have experimented with designing, making and testing a range of electrical circuits with different components. Now, they will implement this knowledge and these skills to produce a circuit that has a clear purpose. Pupils will need to consider the features of their circuit and how it relates to its functionality. They will also address that their design has impact in other ways.<br>**Skills Development Task**<br>**Concepts**<br>**NC -** Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors<br>**NC -** Apply their understanding of computing to program, monitor and control their products<br>• Design, make and evaluate a traffic control system |

# Design Technology

**COME FLY WITH ME! AMERICA – Dreamcatcher**

Pupils will sketch, design using annotations and then make a dreamcatcher using models and video presented to them as inspiration. They will find out about the origins of the dreamcatcher and recognise some of the key design features needed. Before making, pupils will need to identify the materials and colours they will use.

**Mechanisms - Structures 1**

Previously, pupils have learnt how specific mechanisms play a role in constructing strong and useful structures. In this unit, pupils will work through several processes to initially build a strong frame and then join these frames together to form a bridge. Pupils will be required to consider not only their design but also the materials, tools and techniques they will use in order to complete their project.

**Skills Development Task**

**Concepts**

**NC -** Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately

**NC -** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

- Create a frame structure
- Join up frames to create a bridge

**A WORLD OF BRIGHT IDEAS - Mechanisms - Structures 2**

Pupils will now use their advanced knowledge of frames and structures to build a 'racer' vehicle with a strong, stable structure and a motor powered by a simple electrical circuit. Pupils will be required to consider not only their design but also the materials, tools and techniques they will use in order to complete their project.

**Skills Development Task**

**Concepts**

**NC -** select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately

**NC -** Understand and use mechanical systems in their products (for example, gears, pulleys cams, levers and linkages)

**NC -** Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors

- Design, make and evaluate a three wheeled 'racer'

**GLOBAL WARNING - Board Game Product Design**

Pupils will design and make a board game based on learning about pollution and waste. They will evaluate existing games before designing and making a prototype of their game in small 'business groups'. Once complete, they will present and demonstrate their game.

**Concepts**

**NC -** 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

**NC -** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

**NC -** 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

**NC -** Investigate and analyse a range of existing products

- To design and make a prototype board game on pollution and waste using existing board games as research

## Food Technology within PSHE

### Navigators

**Design Technology - Cooking and Nutrition**

- **Understand and apply the principles of a healthy and varied diet (NC)**
- **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (NC)**
- **Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed (NC)**

**Core 1 Unit 2 Lesson 1: Food Choices – Secret Eaters**

**Concepts**

- Know what constitutes a healthy diet (including understanding calories and other nutritional content)
- Know about the different food groups and their related importance as a part of a balanced diet
- Develop an awareness of their own dietary needs

**Core 1 Unit 2 Lesson 2: Food Choices – Invention Team (within A World of Bright Ideas)**

- Know the principles of planning and preparing a range of healthy meals

**Core 1 Unit 2 Lesson 3: Cooking – Michelin Stars (within A World of Bright Ideas)**

- Know what constitutes a healthy diet (including understanding calories and other nutritional content)
- Know how to cook and apply the principles of nutrition and healthy eating
- Prepare and cook with a variety of ingredients, using a range of cooking techniques

**Key Vocabulary**

ingredient
teamwork
food invention
menu
success criteria
review
score

# Design Technology

| Key Vocabulary | | | | | | |
|---|---|---|---|---|---|---|
| **Navigators 1 / Year 5** | | | | **Navigators 2 / Year 6** | | |
| **You're Not Invited** | | | | **Mission Control** | | |
| profile | evaluate | specialised equipment | comfort | profile | evaluate | safety |
| detail | user | adaptation | practicality | detail | user | backup plan |
| needs | product | camp | | needs | product | time-keeping device |
| needs analysis | purpose | bed | | needs analysis | purpose | watch |
| research | use | hammock | | research | use | clock |
| design | Soldier | | | design | Spaceman | limited space |
| **A World Of Bright Ideas** | | | | **Mechanisms - Structures** | | |
| copyright | brand name | | | structure | pulley | 3v motor |
| symbol | logo | | | frame | axle | wire cutter |
| patent | pitch | | | strengthen | components | dowel |
| rights | panel | | | frame structures | aerodynamic | multi-core wire |
| permissions | collaboration | | | bridge | lightweight | connectors |
| trademark | end product | | | weight | rubber washer | |
| **Electronics** | | | | **Textiles** | | |
| Samuel Morse | circuit diagram | | | outline | sew | stuffing |
| Morse Code | series | | | pattern | stitch | |
| dots and dashes | parallel | | | pattern pieces | blanket stitch | |
| circuit | brighter | | | recycled fabrics | running stitch | |
| signals | sequence | | | millimetres | back stitch | |
| 1.5v lamp | | | | pin | backing piece | |
| **Global Warning – Board Game Design (under Sustainability)** | | | | **Come Fly With Me! America - Dteamcatcher** | | |
| research | counters | | | research | traditions | |
| design | tokens | | | design | feathers | |
| prototype | dice | | | sketch | beads | |
| evaluation criteria | board | | | annotate | thread | |
| planning board | | | | material | | |
| ideas | | | | origin | | |

# Design Technology

| End Goals |
| --- |
| **Adventurers / LKS2** |
| Our aim in teaching design technology in Adventurers is to encourage pupils to make links between purpose, functionality and aesthetics. In this phase, pupils will have the opportunity to design for two more Extraordinaires. These personas require more thought and consideration of their requirements than in Pathfinders. Pupils should know that they need to not only focus on purpose and some key features but now bear in mind how the product looks and feels for their user. They should consider materials that not only work well for construction but look aesthetically pleasing too.<br>The Adventurers phase sees pupils learn some basic cooking skills and recognition of where their food comes from. Pupils should be aware that much of their food comes from overseas and that seasonality is important when trying to source various ingredients. They should know how to prepare food hygienically and cook safely whilst remembering that food, like other products they have designed and made, needs to be presented attractively for people to enjoy.<br>By the end of this phase, pupils should be more confident in evaluating their own work and be able to give more detailed criticism, both positively and negatively. They should understand the importance of problem solving in the invention process and be able to make adjustments to their designs. Pupils should now be able to give some feedback to their peers, suggesting ways they could improve or noting a feature that is particularly well designed. |
| **Navigators / UKS2** |
| Our aim in teaching design technology in Navigators is to embed knowledge and skills from the previous phases with a greater awareness of design in the wider world. Pupils should be aware that products can often have more than one function or purpose and be able to recognise the impact this has on its useability. They should know that there is a clear relationship with the features of a product and the functionality of it. They should ask themselves regularly, does this feature enhance this product? Is this feature necessary to the needs of the end user?<br>The Navigator Extraordinaires are based on real people; a solider and a spaceman, both of whom have very specific requirements and restrictions. Pupils should be able to consider the wider issues these personas have when designing and making their products for them. Thoughts on how versatile their product is and how it could impact on other equipment should be considered.<br>By the end of this phase, pupils should have an awareness of the legalities that comes with designing and making a unique product. They should know the terms of 'trademark', 'patent', 'copyright', 'brand' and 'logo'. They should understand that these terms and processes allow inventors to keep their inventions safe and ensure that they earn the recognition they deserve for a design that is their own work. Additionally, Navigators, should be able to see the links between design technology and other subjects such a science. They should see that their knowledge of electricity, for example, can be put to practical use in technology tasks. |