



National Curriculum Objectives

|  | Nursery Reception  | KS1  | KS2  | KS3<br>What happens next...?   |
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|  | <p><i>Creating with Materials ELG</i></p> <p><i>Children at the expected level of development will:</i></p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function</li> <li>share their creations, explaining the process they have used</li> </ul> <p><i>Fine Motor Skills ELG</i></p> <p><i>Children at the expected level of development will:</i></p> <ul style="list-style-type: none"> <li>hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases</li> <li>use a range of small tools, including scissors, paint brushes and cutlery</li> </ul> <p><i>Managing Self ELG</i></p> <p><i>Children at the expected level of development will:</i></p> <ul style="list-style-type: none"> <li>be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> <li>manage their own basic hygiene and personal needs, including ... understanding the importance of healthy food choices.</li> </ul> | <p><i>Design</i></p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul> <p><i>Make</i></p> <ul style="list-style-type: none"> <li>select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing)</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul> <p><i>Evaluate</i></p> <ul style="list-style-type: none"> <li>explore and evaluate a range of existing products</li> <li>evaluate their ideas and products against design criteria</li> </ul> <p><i>Technical knowledge</i></p> <ul style="list-style-type: none"> <li>build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products.</li> </ul> <p><i>Cooking and Nutrition</i></p> <ul style="list-style-type: none"> <li>use the basic principles of healthy and varied diet to prepare dishes</li> <li>understand where food comes from.</li> </ul> | <p><i>Design</i></p> <ul style="list-style-type: none"> <li>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</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul> <p><i>Make</i></p> <ul style="list-style-type: none"> <li>select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately</li> <li>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</li> </ul> <p><i>Evaluate</i></p> <ul style="list-style-type: none"> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul> <p><i>Technical knowledge</i></p> <ul style="list-style-type: none"> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)</li> <li>understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors)</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul> <p><i>Cooking and Nutrition</i></p> <ul style="list-style-type: none"> <li>understand and apply the principles of a healthy and varied diet</li> </ul> | <p><i>Design</i></p> <ul style="list-style-type: none"> <li>use research and exploration, such as the study of different cultures, to identify and understand user needs</li> <li>identify and solve their own design problems and understand how to reformulate problems given to them</li> <li>develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations</li> <li>use a variety of approaches (for example, biomimicry and user-centred design), to generate creative ideas and avoid stereotypical responses</li> <li>develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools</li> </ul> <p><i>Make</i></p> <ul style="list-style-type: none"> <li>select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</li> <li>select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties</li> </ul> <p><i>Evaluate</i></p> <ul style="list-style-type: none"> <li>analyse the work of past and present professionals and others to develop and broaden their understanding</li> <li>investigate new and emerging technologies</li> <li>test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups</li> <li>understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists</li> </ul> <p><i>Technical knowledge</i></p> <ul style="list-style-type: none"> <li>understand and use the properties of materials and the performance of structural elements to achieve functioning solutions</li> <li>understand how more advanced mechanical systems used in their products enable changes in movement and force</li> <li>understand how more advanced electrical and electronic systems can be powered and used in their products (for example, circuits with heat, light, sound and movement as inputs and outputs)</li> <li>apply computing and use electronics to embed intelligence in products that respond to inputs (for example, sensors), and control outputs (for example, actuators), using programmable components (for example, microcontrollers).</li> </ul> <p><i>Cooking and Nutrition</i></p> <ul style="list-style-type: none"> <li>understand and apply the principles of nutrition and health</li> <li>cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet</li> </ul> |

- 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.

- 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)
- understand the source, seasonality and characteristics of a broad range of ingredients.

## EYFS Design and Technology Opportunities

|                 | Year A   | Year B   |
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| <b>Autumn 1</b> | <b>What do I know about me?</b>  | <b>What do I know about me?</b>  |
|                 | <p><b>Who are the characters inside my book?</b></p> <p>Cooking and Nutrition<br/>Looking at healthy and unhealthy toppings for gingerbread men (The Gingerbread Man) - which do they like / dislike?</p> <ul style="list-style-type: none"> <li>• use a range of small tools, including scissors, paint brushes and cutlery.</li> <li>• be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> <li>• manage their own basic hygiene and personal needs, including ... understanding the importance of healthy food choices.</li> </ul>   | <p><b>Who are the characters inside my book?</b></p> <p>Cooking and Nutrition<br/>Looking at healthy and unhealthy toppings for porridge (Goldilocks) - which do they like / dislike?</p> <ul style="list-style-type: none"> <li>• use a range of small tools, including scissors, paint brushes and <b>cutlery</b></li> <li>• be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> <li>• manage their own basic hygiene and personal needs, including ... understanding the importance of healthy food choices.</li> </ul>   |
| <b>Autumn 2</b> | <p><b>Making and decorating Christmas decorations</b></p> <ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function</li> <li>• share their creations, explaining the process they have used</li> <li>• hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases</li> <li>• use a range of small tools, including scissors, paint brushes and cutlery</li> <li>• be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> </ul>   |  |
| <b>Spring 1</b> | <p><b>Where do the wild animals live?</b></p> <p>Making wild animal masks using felt. Choosing the materials they will need to make their mask look "realistic"</p> <ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function</li> <li>• share their creations, explaining the process they have used</li> <li>• hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases</li> <li>• use a range of small tools, including scissors, paint brushes and cutlery</li> <li>• be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> </ul> | <p><b>What's above the sky?</b></p> <p>Building a rocket using junk modelling. Considering how to make the nose of the rocket</p> <ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function</li> <li>• share their creations, explaining the process they have used</li> <li>• hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases</li> <li>• use a range of small tools, including scissors, paint brushes and cutlery</li> <li>• be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> </ul> |
| <b>Spring 2</b> | <p><b>Does everything change as it grows?</b></p> <p>Cooking and Nutrition<br/>Chopping different foods from Oliver's Vegetables - which do they like / dislike?</p> <ul style="list-style-type: none"> <li>• use a range of small tools, including scissors, paint brushes and <b>cutlery</b></li> <li>• be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> </ul>  | <p><b>Who can I ask for help?</b></p> <p>Cooking and Nutrition<br/>Dental hygiene - looking at what is healthy and unhealthy for our teeth</p> <ul style="list-style-type: none"> <li>• manage their own basic hygiene and personal needs, including ... understanding the importance of healthy food choices.</li> </ul>  |

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|                 | <ul style="list-style-type: none"> <li>manage their own basic hygiene and personal needs, including ... understanding the importance of healthy food choices.</li> </ul>  |  |
| <b>Summer 1</b> | <p style="text-align: center;"><b>Are all minibeasts scary?</b></p> <p style="text-align: center;">Constructing a minibeast house out of junk.<br/>Thinking about the materials they want to put inside the minibeast house (Grass / stones / mud)</p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function</li> <li>share their creations, explaining the process they have used</li> <li>hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases</li> <li>use a range of small tools, including scissors, paint brushes and cutlery</li> <li>be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> </ul> | <p style="text-align: center;"><b>What would I find on Old MacDonald's farm?</b></p> <p style="text-align: center;">Making animal masks using felt. Choosing the materials they will need to make their mask look "realistic"</p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function</li> <li>share their creations, explaining the process they have used</li> <li>hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases</li> <li>use a range of small tools, including scissors, paint brushes and cutlery</li> <li>be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> </ul> |
| <b>Summer 2</b> | <p style="text-align: center;"><b>Are we nearly there yet?</b></p> <p style="text-align: center;">Making boats<br/>Investigating floating and sinking</p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function</li> <li>share their creations, explaining the process they have used</li> <li>hold a pencil effectively in preparation for fluent writing - using the tripod grip in almost all cases</li> <li>use a range of small tools, including scissors, paint brushes and cutlery</li> <li>be confident to try new activities and show independence, resilience and perseverance in the face of challenge</li> </ul>  |  |

## Year 1 Autumn Term (Food) Fruit Salad / Fruit Kebab

### Food Technology

Use the basic principles of a healthy and varied diet to prepare dishes

Understand where food comes from

**Sticky Knowledge:**

- Cut food safely

**NC Skills:**

- Cut food safely
- Describe the texture of foods
- Wash their hands and make sure that surfaces are clean
- Think of interesting ways of decorating food they have made

**Key Vocabulary:**

- Apron
- Chop
- Cut
- Equipment
- Knife
- Texture
- Decorate
- Safely
- Cutter
- Skewer
- Fruit

### Designing

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

**Sticky Knowledge:**

- Use own ideas to design something
- Explain to someone else how they want to make their product and make a simple plan before making

**NC Skills:**

- Think of some ideas of their own
- Explain what they want to do
- Use pictures and words to plan
- Talk with others about how they want to construct their product
- Make simple plans before making objects, e.g. drawings, arranging pieces of construction before building

**Key Vocabulary:**

- Design
- Plan
- Make
- Colour
- Taste
- Texture

### Making

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

**Sticky Knowledge:**

- Use own ideas to make something
- Choose appropriate tools
- Cut food safely

**NC Skills:**

- Explain what they are making
- Explain which tools they are using

**Equipment/materials:**

- Mango
- Strawberry
- Blueberry
- Grape
- Banana
- Watermelon
- Knife

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| <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p> | <ul style="list-style-type: none"> <li>• Select appropriate resources and tools for their projects</li> <li>• Cut food safely</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Fruit</li> <li>• Cut</li> <li>• Skewer</li> <li>• Colour</li> <li>• Ingredients</li> <li>• Chop</li> <li>• Knife</li> <li>• Healthy</li> <li>• Chopping board</li> <li>• Unhealthy</li> <li>• Hygiene</li> </ul> | <ul style="list-style-type: none"> <li>• Chopping board</li> <li>• Skewer</li> <li>• Cutter</li> </ul> |
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| <p><b>Evaluating</b></p> <p>Explore and evaluate a range of existing products</p> <p>Evaluate their ideas and products against design criteria</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Describe their product</li> <li>• Explain what worked well and not so well in the product they have made</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Talk about their own work and things that other people have done</li> <li>• Explain what worked well and not so well in the product they have made</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Describe</li> <li>• Explain</li> </ul> |
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**Year 1 Spring Term (Mechanisms - Sliders and levers)**  
**Leaf Falling From Tree Slider**

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| <p><b>Designing</b></p> <p>Design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Use own ideas to design something and describe how their own idea works</li> <li>• Design a product which moves</li> <li>• Explain to someone else how they want to make their product and make a simple plan before making</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Think of some ideas of their own</li> <li>• Explain what they want to do</li> <li>• Use pictures and words to plan</li> <li>• Talk with others about how they want to construct their product</li> <li>• Make simple plans before making objects, e.g. drawings, arranging pieces of construction before building</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Design</li> <li>• Plan</li> <li>• Build</li> <li>• Make</li> </ul> |
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| <p><b>Making</b></p> <p>Select from and use a range of tools and equipment to perform</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Use own ideas to make something</li> <li>• Make a product which moves</li> <li>• Choose appropriate resources and tools</li> </ul> | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Glue stick</li> <li>• Cello tape</li> <li>• Masking tape</li> </ul> |
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| <p>practical tasks (for example, cutting, shaping, joining and finishing)</p> <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p> | <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Explain what they are making</li> <li>• Explain which tools they are using</li> <li>• Select appropriate resources and tools for their building projects</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Glue</li> <li>• Make</li> <li>• Mechanism</li> <li>• Slider</li> <li>• Slot</li> <li>• Lever</li> </ul>  | <ul style="list-style-type: none"> <li>• Ruler</li> <li>• Card</li> <li>• Scissors</li> <li>• Crayons</li> <li>• Pens</li> </ul> |
| <p><b>Evaluating</b></p> <p>Explore and evaluate a range of existing products</p> <p>Evaluate their ideas and products against design criteria</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Describe how something works</li> <li>• Explain what works well and not so well in the model they have made</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Describe how something works</li> <li>• Talk about their own work and things that other people have done</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Describe</li> <li>• Explain</li> </ul>   |  |
| <p><b>Technical Knowledge</b></p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable</p> <p>Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products</p>                 | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Make their model stronger</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Make a product which moves</li> <li>• Cut materials using scissors</li> <li>• Describe the materials using different words</li> <li>• Say why they have chosen moving parts</li> <li>• Make a model using different materials</li> <li>• Make their work tidy</li> <li>• Make their model stronger if it needs to be</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Move</li> <li>• Cut</li> <li>• Parts</li> <li>• Materials</li> <li>• Strong</li> <li>• Push</li> <li>• Pull</li> </ul> |  |

## Year 1 Summer Term (Structures - Freestanding Stable Structure) Bridge for 3 Billy Goats Gruff

### Designing

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

#### Sticky Knowledge:

- Use own ideas to design something and describe how their own idea works
- Design a product which moves
- Explain to someone else how they want to make their product and make a simple plan before making

#### NC Skills:

- Think of some ideas of their own
- Explain what they want to do
- Use pictures and words to plan
- Talk with others about how they want to construct their product
- Make simple plans before making objects, e.g. drawings, arranging pieces of construction before building

#### Key Vocabulary:

- Design
- Plan
- Build
- Make

### Making

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

#### Sticky Knowledge:

- Use own ideas to make something
- Make a product which moves
- Choose appropriate resources and tools

#### NC Skills:

- Explain what they are making
- Explain which tools they are using
- Select appropriate resources and tools for their building projects

#### Key Vocabulary:

- Glue
- Make
- Structure
- Stable
- Freestanding

#### Equipment/materials:

- Glue stick
- Cello tape
- Masking tape
- Ruler
- Card
- Scissors
- Crayons
- Pens
- Cardboard boxes
- Paperclips
- Plasticine
- Art straws
- Split pins
- Paints

### Evaluating

Explore and evaluate a range of existing products

Evaluate their ideas and products against design criteria

#### Sticky Knowledge:

- Describe how something works
- Explain what works well and not so well in the model they have made

#### NC Skills:

- Describe how something works
- Talk about their own work and things that other people have done

#### Key Vocabulary:

- Describe
- Explain

## 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

### Sticky Knowledge:

- Make their model stronger

### NC Skills:

- Cut materials using scissors
- Describe the materials using different words
- Make a model using different materials
- Make their work tidy
- Make their model stronger if it needs to be

### Key Vocabulary:

- Move
- Cut
- Parts
- Materials
- Strong
- Strength



## Year 2 Autumn Term (Food) Cupcakes for Queen's Coronation

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| <h3 style="text-align: center;">Food Technology</h3> <p>Use the basic principles of a healthy and varied diet to prepare dishes</p> <p>Understand where food comes from</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Weigh ingredients to use in a recipe</li> <li>• Describe the ingredients used when making a dish or cake</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Describe the properties of the ingredients they are using</li> <li>• Explain what it means to be hygienic</li> <li>• Be hygienic in the kitchen</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Chopping board</li> <li>• Grater</li> <li>• Ingredients</li> <li>• Measure</li> <li>• Measuring jug</li> <li>• Method</li> <li>• Mixing bowl</li> <li>• Peeler</li> <li>• Recipe</li> <li>• Baking tray</li> <li>• Scales</li> <li>• Sieve</li> <li>• Weigh</li> <li>• Wooden spoon</li> <li>• Hygiene</li> </ul> |  |
| <h3 style="text-align: center;">Designing</h3> <p>Design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Think of an idea and plan what to do next</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Think of some ideas and plan what to do next</li> <li>• Choose the best tools and ingredients</li> <li>• Give reason why these are the best</li> <li>• Describe their design using pictures, diagrams, models and words</li> <li>• Develop their own ideas from initial starting points</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Design</li> <li>• Plan</li> <li>• Bake</li> <li>• Resources</li> <li>• Tools</li> </ul>  |  |
| <h3 style="text-align: center;">Making</h3> <p>Select from and use a range of tools and equipment to perform practical tasks (for</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Choose tools and ingredients and explain why they have chosen them</li> <li>• Measure ingredients to use in their product</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Measure ingredients</li> </ul>   | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Bread</li> <li>• Flour</li> <li>• Butter</li> <li>• Sugar</li> </ul> |

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| <p>example, cutting, shaping, joining and finishing)</p> <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p> | <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Sandwiches</li> <li>• Scones</li> <li>• Cut</li> <li>• Colour</li> <li>• Ingredients</li> <li>• Mix</li> <li>• Bake</li> <li>• Oven</li> <li>• Knife</li> <li>• Healthy</li> <li>• Chopping board</li> <li>• Unhealthy</li> <li>• Hygiene</li> </ul> | <ul style="list-style-type: none"> <li>• Eggs</li> <li>• Fruit (Raisins)</li> <li>• Cream</li> <li>• Jam</li> <li>• Strawberries</li> <li>• Cheese</li> <li>• Cream Cheese</li> <li>• Cucumber</li> </ul> |
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| <p><b>Evaluating</b></p> <p>Explore and evaluate a range of existing products</p> <p>Evaluate their ideas and products against design criteria</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Explain what went well with their work</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Explain what went well with their work</li> <li>• Explain what they would improve</li> <li>• Consider how to improve their food</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Improve</li> <li>• Positive</li> <li>• Negative</li> <li>• Next time</li> </ul> |
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**Year 2 Spring Term (Textiles 2D shape to 3D product)**  
**Ticket holder for Titanic Passenger**

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| <p><b>Designing</b></p> <p>Design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Think of an idea and plan what to do next</li> <li>• Explain why they have chosen specific textiles</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Think of ideas and plan what to do next</li> <li>• Choose the best tools and materials</li> <li>• Give a reason why these are the best</li> <li>• Describe how different textiles feel</li> <li>• Explain why they chose a certain textile</li> <li>• Describe their design by using pictures, diagrams, models and words</li> <li>• Add some kind of design to their product</li> <li>• Develop their own ideas from initial starting points</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Textile</li> <li>• Resources</li> <li>• Tools</li> </ul> |
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|   | <ul style="list-style-type: none"> <li>• Construct</li> </ul>   |  |
| <h2 style="text-align: center;">Making</h2> <p>Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing)</p> <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Choose tools and materials and explain why they have chosen them</li> <li>• Join materials and components in different ways</li> <li>• Measure materials to use in a model or structure</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Join things (materials / components) together in different ways</li> <li>• Measure textile</li> <li>• Join textiles together to make something</li> <li>• Make a product from textiles by gluing</li> <li>• Cut textiles</li> <li>• Make sensible choices as to which material to use for their construction</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Scissors</li> <li>• Felt</li> <li>• Centimetre</li> <li>• Fabric crayons/ pens</li> <li>• Pattern</li> </ul> | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Ruler</li> <li>• Materials</li> <li>• Scissors</li> <li>• PVA glue</li> <li>• Fabric crayons / Pens</li> </ul> |
| <h2 style="text-align: center;">Evaluating</h2> <p>Explore and evaluate a range of existing products</p> <p>Evaluate their ideas and products against design criteria</p>   | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Explain what went well with their work</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Explain what went well with their work</li> <li>• Explain what they would improve</li> <li>• Consider how to improve their work</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Explain</li> <li>• Improve</li> <li>• Positive</li> <li>• Negative</li> <li>• Next time</li> </ul>   |  |
| <h2 style="text-align: center;">Technical Knowledge</h2> <p>Build structures, exploring how they can be made stronger, stiffer and more stable</p> <p>Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Make their product stronger</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Cut materials using scissors</li> <li>• Describe the materials using different words</li> <li>• Make a model using different materials</li> <li>• Make their work tidy</li> <li>• Use joining, folding or rolling to make it stronger</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Cut</li> <li>• Materials</li> <li>• Strong</li> </ul>   |  |

- Stretch
- Strength
- Soft

## Year 2 Summer Term (Mechanisms - Wheels and Axels) Cars

### Designing

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

#### Sticky Knowledge:

- Think of an idea and plan what to do next

#### NC Skills:

- Think of ideas and plan what to do next
- Choose the best tools and materials
- Give a reason why these are best
- Describe their design by using pictures, diagrams, models and words
- Add some kind of design to their product
- Develop their own ideas from initial starting points

#### Key Vocabulary:

- Design
- Plan
- Materials
- Colour

### Making

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

#### Sticky Knowledge:

- Choose tools and materials and explain why they have chosen them
- Join materials and components in different ways
- Measure materials to use in a model or structure

#### NC Skills:

- Join things (materials/ components) together in different ways
- Join materials together as part of a moving product
- Measure materials to use in a model or structure
- Join materials in different ways
- Make sensible choices as to which material to use for their constructions

#### Key Vocabulary:

- Join
- Material
- Measure
- Attach
- Wheel
- Axle
- Washer
- Chassis
- Decorate

#### Equipment/materials:

- Dowel
- Wheel
- Plastic tubing
- Card
- Scissors
- Glue
- Saw

### Evaluating

Explore and evaluate a range of existing products

#### Sticky Knowledge:

- Explain what went well with their work

#### NC Skills:

- Explain what went well with their work

|   |  |
|---|--|
| <p>Evaluate their ideas and products against design criteria</p>  | <ul style="list-style-type: none"> <li>• Explain what they would improve</li> <li>• Consider how to improve their construction</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Improve</li> <li>• Positive</li> <li>• Negative</li> <li>• Next time</li> </ul>   |
| <p><b>Technical Knowledge</b></p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable</p> <p>Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Make a model stronger and more stable</li> <li>• Use wheels and axels, when appropriate to do so</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Use joining, folding or rolling to make it stronger</li> <li>• Incorporate some type of movement into models</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Join</li> <li>• Fold</li> <li>• Roll</li> <li>• Movement</li> <li>• Stable</li> <li>• Wheels</li> <li>• Axels</li> <li>• Mechanism</li> <li>• Stiff</li> <li>• Soft</li> </ul> |

## Year 3 Autumn Term (Structures - Shell Structures inc. CAD)

### Box to contain Egyptian Object

#### Designing

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

##### Sticky Knowledge:

- Prove that a design meets a set criteria
- Design a product and make sure that it looks attractive
- Choose a material for both its suitability and its appearance

##### NC Skills:

- Show that their design meets a range of requirements
- Put together a step-by-step plan which shows the order and also what equipment and tools they need
- Describe their design using an accurately labelled sketch and words
- Say how realistic their plan is

##### Key Vocabulary:

- Design
- Plan
- Label
- Sketch
- Draw
- Computer Aided Design

#### Making

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

##### Sticky Knowledge:

- Follow a step-by-step plan, choosing the right equipment and materials
- Select the most appropriate tools and techniques for a given task
- Work accurately to measure, make cuts and make holes

##### NC Skills:

- Use equipment and tools accurately
- Use the most appropriate materials
- Work accurately to make cuts and holes
- Join materials

##### Key Vocabulary:

- Join
- Material
- Measure
- Attach
- Glue gun
- Appearance
- Quality

##### Equipment/materials:

- Card
- Decorations - Sequins etc
- Lollypop sticks
- Matchsticks
- Scissors
- Glue
- Glue gun
- TechSoft Primary V3
- Tinkercad

#### Evaluating

Investigate and analyse a range of existing products

Evaluate their ideas and products against their own design

##### Sticky Knowledge:

- Explain how to improve a finished model
- Know why a model has, or has not, been successful

##### NC Skills:

- Explain what they changed which made their design even better

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

**Key Vocabulary:**

- Evaluate
- Improve
- Successful
- Unsuccessful
- Next time

## 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

**Sticky Knowledge:**

- Know how to strengthen a product by stiffening a given part or reinforce a part of the structure
- Use a simple IT program within a design

**NC Skills:**

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Apply their understanding of computing to program, monitor and control their products

**Key Vocabulary:**

- Strengthen
- Reinforce
- Computer Aided Design

## Year 3 Spring Term (DT Key Events and Individuals - Isambard Kingdom Brunel) Bridges

## Designing

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

**Sticky Knowledge:**

- Prove that a design meets a set criteria
- Choose a material for both its suitability and its appearance

**NC Skills:**

- Show that their design meets a range of requirements
- Put together a step-by-step plan which shows the order and also what equipment and tools they need
- Describe their design using an accurately labelled sketch and words
- Say how realistic their plan is

**Key Vocabulary:**

- Design

|   |   |  |
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| <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>   | <ul style="list-style-type: none"> <li>• Plan</li> <li>• Label</li> <li>• Sketch</li> <li>• Draw</li> </ul>   |  |
| <p><b>Making</b></p> <p>Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately</p> <p>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</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Follow a step-by-step plan, choosing the right equipment and materials</li> <li>• Select the most appropriate tools and techniques for a given task</li> <li>• Work accurately to measure, make cuts and make holes</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Use equipment and tools accurately</li> <li>• Use the most appropriate materials</li> <li>• Work accurately to make cuts and holes</li> <li>• Join materials</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Join</li> <li>• Material</li> <li>• Measure</li> <li>• Attach</li> <li>• Glue gun</li> <li>• Appearance</li> <li>• Quality</li> <li>• Strength</li> <li>• Triangulation</li> </ul> | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Art straws</li> <li>• Lollypop sticks</li> <li>• Matchsticks</li> <li>• Card</li> <li>• Scissors</li> <li>• Glue</li> <li>• Glue gun</li> <li>• Sellotape</li> <li>• Masking tape</li> <li>• Weight</li> </ul> |
| <p><b>Evaluating</b></p> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Explain how to improve a finished model</li> <li>• Know why a model has, or has not, been successful</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Explain what they changed which made their design even better</li> <li>• Understand how key events and individuals in design and technology have helped to shape the world</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Improve</li> <li>• Successful</li> <li>• Unsuccessful</li> <li>• Next time</li> </ul>   |  |



## 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

### Sticky Knowledge:

- Know how to strengthen a product by stiffening a given part or reinforce a part of the structure

### NC Skills:

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

### Key Vocabulary:

- Strengthen
- Reinforce

## Year 3 Summer Term (Levers and Linkages) Moving Body Picture Linking to Science

## Designing

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

### Sticky Knowledge:

- Prove that a design meets a set criteria
- Design a product and make sure that it looks attractive
- Choose a material for both its suitability and its appearance

### NC Skills:

- Show that their design meets a range of requirements
- Put together a step-by-step plan which shows the order and also what equipment and tools they need
- Describe their design using an accurately labelled sketch and words
- Say how realistic their plan is

### Key Vocabulary:

- Design
- Plan
- Label
- Sketch
- Draw

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|---|---|--|
| <p><b>Making</b></p> <p>Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately</p> <p>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</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>Follow a step-by-step plan, choosing the right equipment and materials</li> <li>Select the most appropriate tools and techniques for a given task</li> <li>Make a product which uses both electrical and mechanical components</li> <li>Work accurately to measure, make cuts and make holes</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>Use equipment and tools accurately</li> <li>Use the most appropriate materials</li> <li>Work accurately to make cuts and holes</li> <li>Join materials</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>Join</li> <li>Material</li> <li>Measure</li> <li>Attach</li> <li>Appearance</li> <li>Quality</li> </ul> | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>Card</li> <li>Ruler</li> <li>Scissors</li> <li>PVA glue</li> <li>Split pins</li> <li>Pens</li> </ul> |
| <p><b>Evaluating</b></p> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>Explain how to improve a finished model</li> <li>Know why a model has, or has not, been successful</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>Explain what they changed which made their design even better</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>Evaluate</li> <li>Improve</li> <li>Successful</li> <li>Unsuccessful</li> <li>Next time</li> </ul>  |  |
| <p><b>Technical Knowledge</b></p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>Know how to strengthen a product by stiffening a given part or reinforce a part of the structure</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>Strengthen</li> <li>Reinforce</li> </ul>   |  |

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 4 Autumn Term (Textiles - Combining Different fabric shapes inc. CAD)**  
**Greek Bag or Purse**

## Designing

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

**Sticky Knowledge:**

- Use ideas from other people when designing products
- Produce a plan and explain it
- Persevere and adapt work when original ideas do not work
- Communicate ideas in a range of ways, including by sketches and drawings which are annotated
- Design a product and make sure that it looks attractive
- Choose a material for both its suitability and its appearance

**NC Skills:**

- Come up with at least one idea for a product
- Devise a template
- Take account of the ideas of others when designing
- Produce a plan and explain it to others

**Key Vocabulary:**

- Design
- Plan
- Label
- Sketch
- Annotate
- Adapt
- Product

## Making

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

**Sticky Knowledge:**

- Know which tools to use for a particular task and show knowledge of handling the tool
- Know which material is likely to give the best outcome
- Measure accurately to make cuts and make holes

**NC Skills:**

- Show a good level of expertise when using a range of tools and equipment
- Join textiles of different types in different ways
- Choose textiles both for their appearance and also qualities
- Think about what the user would want when using textiles
- Think about how to make their product strong
- Devise a template
- Explain how to join things in different ways

**Key Vocabulary:**

- Sew
- Scissors
- Felt
- Centimetre
- Fabric crayons/ pens
- Needle
- Pattern
- Stitch
- Running Stitch

**Equipment/materials:**

- Ruler
- Materials
- Scissors
- PVA glue
- Needles
- Thread
- Fabric crayons / Pens

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| <p><b>Evaluating</b><br/>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>   | <ul style="list-style-type: none"> <li>• Thread</li> <li>• Accurate</li> <li>• Outcome</li> </ul> <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Evaluate and suggest improvements for design</li> <li>• Evaluate products for both their purpose and appearance</li> <li>• Explain how the original design has been improved</li> <li>• Present a product in an interesting way</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Consider how they will check if the line is successful</li> <li>• Evaluate their work with regards to appearance and functionality</li> <li>• Suggest improvements, and say what is good and not so good about their original design</li> <li>• Work on their product even though their original idea may not have worked</li> <li>• Take time to consider how to make their idea better</li> <li>• Evaluate their product, thinking about the appearance and the way it works</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Improve</li> <li>• Successful</li> <li>• Unsuccessful</li> <li>• Next time</li> <li>• Appearance</li> <li>• Functionality</li> </ul> |  |
| <p><b>Technical Knowledge</b><br/>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)</p> <p>Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors)</p> <p>Apply their understanding of computing to program,</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know how to strengthen a product by stiffening a given part or reinforce a part of the structure</li> <li>• Use IT where appropriate, to add to the quality of the product</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Attempted to make their product strong</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Strengthen</li> <li>• Reinforce</li> </ul>  |  |

monitor and control their products

## Year 4 Spring Term (Electrical Systems - Simple Circuits and Switches Programming and Control) Burglar Alarm

### Designing

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

#### Sticky Knowledge:

- Use ideas from other people when designing
- Produce a plan and explain it
- Persevere and adapt work when original idea does not work
- Communicate ideas in a range of ways, including by sketches and drawings which are annotated

#### NC Skills:

- Come up with at least one idea for a product
- Devise a template
- Take account of the ideas of others when designing
- Produce a plan and explain it to others

#### Key Vocabulary:

- Design
- Plan
- Label
- Sketch
- Annotate
- Adapt
- Product

### Making

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

#### Sticky Knowledge:

- Know which tools to use for a particular task and show knowledge of handling the tool
- Know which material is likely to give the best outcome
- Measure accurately

#### NC Skills:

- Show a good level of expertise when using a range of tools and equipment
- Explain how to join things in different ways

#### Key Vocabulary:

- Join
- Material
- Measure
- Attach
- Glue gun
- Appearance
- Quality
- Accurate
- Outcome

#### Equipment/materials:

- Card
- Wood
- Lollypop sticks
- Matchsticks
- Glue
- Glue gun
- Saw
- Buzzer
- Bulb
- Wire
- Switch
- Batteries

### Evaluating

Investigate and analyse a range of existing products

#### Sticky Knowledge:

- Evaluate and suggest improvements for design
- Evaluate products for both their purpose and appearance
- Explain how the original design has been improved
- Present a product in an interesting way

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

**NC Skills:**

- Consider how they will check if the design is successful
- Evaluate their work, with regards to appearance, and functionality
- Suggest improvements, and say what is good and not so good about their original design
- Work on their product even though their original idea may not have worked
- Take time to consider how to make their idea better
- Evaluate their product, thinking about the appearance and the way it works
- 

**Key Vocabulary:**

- Evaluate
- Improve
- Successful
- Unsuccessful
- Next time
- Appearance
- Functionality

## 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

**Sticky Knowledge:**

- Links scientific knowledge by using lights, switches or buzzers
- Use electrical systems to enhance the quality of the product
- Use IT, where appropriate, to add to the quality of the product

**NC Skills:**

- Attempted to make their product strong
- Add things to their circuits

**Key Vocabulary:**

- Lights
- Switches
- Buzzers
- Electric
- Circuit

## Year 4 Summer Term (Food - Seasonality)

### African Tagine

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| <p style="text-align: center;"><b>Food Technology</b></p> <p>Understand and apply the principles of a healthy and varied diet</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</p>   | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>Describe how food ingredients come together</li> <li>Weigh out ingredients and follow a given recipe to create a dish</li> <li>Talk about which food is healthy and which food is not</li> <li>Know when food is ready for harvesting</li> <li>Know how to be both hygienic and safe when using food</li> <li>Bring a creative element to the food product being designed</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>Choose the right ingredients for a product</li> <li>Use equipment safely</li> <li>Make sure that their product looks attractive</li> <li>Describe how their combined ingredients come together</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>Grams/ kilograms</li> <li>Millilitre/ Litre</li> <li>Knife</li> <li>Blender</li> <li>Temperature</li> <li>Whisk</li> <li>Creative</li> </ul> |   |
| <p style="text-align: center;"><b>Designing</b></p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>Use ideas from other people when designing</li> <li>Produce a plan and explain it</li> <li>Persevere and adapt work when original idea does not work</li> <li>Communicate ideas in a range of ways, including by sketches and drawings which are annotated</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>Come up with at least one idea for a product</li> <li>Devise a template</li> <li>Take account of the ideas of others when designing</li> <li>Produce a plan and explain it to others</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>Design</li> <li>Plan</li> <li>Label</li> <li>Sketch</li> <li>Annotate</li> <li>Adapt</li> <li>Product</li> </ul>  |   |
| <p style="text-align: center;"><b>Making</b></p> <p>Select from and use a wider range of tools and equipment to perform practical</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>Know which tools to use for a particular task and show knowledge of handling the tool</li> <li>Measure accurately</li> </ul> <p><b>NC Skills:</b></p>  | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>1 tbsp olive oil</li> <li>1 medium onion, peeled and finely sliced</li> <li>2 thin leeks, trimmed and cut into thick slices</li> <li>2 large garlic cloves, peeled and finely sliced</li> </ul> |



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| <p>tasks (for example, cutting, shaping, joining and finishing), accurately</p> <p>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</p>   | <ul style="list-style-type: none"> <li>Show a good level of expertise when using a range of tools and equipment</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>Measure</li> <li>Appearance</li> <li>Quality</li> <li>Accurate</li> <li>Outcome</li> </ul>  | <ul style="list-style-type: none"> <li>2 tsp ground coriander</li> <li>2 tsp ground cumin</li> <li><math>\frac{1}{2}</math> tsp dried chilli flakes</li> <li><math>\frac{1}{4}</math> tsp ground cinnamon</li> <li>400g can of chopped tomatoes</li> <li>1 red pepper, deseeded and cut into chunks</li> <li>1 yellow pepper, deseeded and cut into chunks</li> <li>400g can of chickpeas, drained and rinsed</li> <li>100g dried split red lentils</li> <li>375g sweet potatoes, peeled and cut into chunks</li> <li>Juice of 1 large orange plus peel thickly sliced</li> <li>500g mixed nuts, such as brazils, hazelnuts, pecans and walnuts, toasted and roughly chopped (optional - beware of allergies)</li> <li>400ml water</li> <li>Small bunch of coriander, chopped</li> <li>Natural bio-yoghurt (optional)</li> <li>Peeler</li> <li>Knives</li> <li>Grater</li> <li>Chopping boards</li> <li>Colander</li> <li>Jug</li> <li>Juicer</li> </ul> |
| <p><b>Evaluating</b></p> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>Evaluate and suggest improvements for design</li> <li>Evaluate products for both their taste and appearance</li> <li>Explain how the original design has been improved</li> <li>Present a product in an interesting way</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>Consider how they will check if the design is successful</li> <li>Evaluate their work, with regards to appearance, and functionality</li> <li>Suggest improvements, and say what is good and not so good about their original design</li> <li>Take time to consider how to make their idea better</li> <li>Evaluate their product, thinking about the appearance and the way it works</li> <li></li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>Evaluate</li> <li>Improve</li> <li>Successful</li> <li>Unsuccessful</li> <li>Next time</li> <li>Appearance</li> <li>Functionality</li> <li>Taste</li> </ul> |  |

Year 5 Autumn Term (Structures and Mechanics - Frame Structures, Triangulation and Hydraulics)  
Moving Bridge

**Designing**

Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at

**Sticky Knowledge:**

- Come up with a range of ideas after collecting information from different sources
- Produce a detailed step-by-step plan
- Explain how a product will appeal to a specific audience
- Design a product which requires pulleys or gears

**NC Skills:**

- Come up with a range of ideas after they have collected information

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| <p>particular individuals or groups</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>   | <ul style="list-style-type: none"> <li>• Produce a detailed step-by-step plan</li> <li>• Explain why their finished product is going to be of good quality</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Design</li> <li>• Plan</li> <li>• Sources</li> <li>• Step-by-step</li> <li>• Appeal</li> <li>• Quality</li> </ul>  |   |
| <p><b>Making</b></p> <p>Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately</p> <p>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</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Use a range of tools and equipment competently</li> <li>• Make a prototype before making a final version</li> <li>• Make a product that relies on pulleys and gears</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Persevere through different stages of the making process</li> <li>• Use a range of tools and equipment expertly</li> <li>• Use a range of joining techniques</li> <li>• Measure accurately enough to ensure that everything is precise</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Join</li> <li>• Measure</li> <li>• Marking out</li> <li>• Gears</li> <li>• Pulley</li> <li>• Prototype</li> <li>• Precise</li> </ul>   | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Wood</li> <li>• Saws</li> <li>• Wires</li> <li>• Bulbs</li> <li>• Buzzers</li> <li>• Batteries</li> <li>• Switches</li> <li>• Mitre boxes</li> <li>• Motors</li> <li>• Pulley systems</li> <li>• Art straws</li> <li>• Lollypop sticks</li> <li>• Matchsticks</li> <li>• Scissors</li> <li>• Glue</li> <li>• Glue gun</li> <li>• Rulers</li> <li>• String</li> <li>• Crumble microcontroller</li> </ul> |
| <p><b>Evaluating</b></p> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Suggest alternative plans; outlining the positive features and draw backs</li> <li>• Evaluate appearance and function against original criteria</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Refine their product after testing it</li> <li>• Check whether anything can be improved</li> <li>• Keep checking that their design is the best it can be</li> <li>• Evaluate appearance and function against the original criteria</li> <li>• Be motivated enough to refine and further improve their product using mouldable materials</li> <li>• Suggest some alternative plans and say what the good points and drawbacks are about each</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Test</li> <li>• Drawbacks</li> <li>• Refine</li> <li>• Mouldable</li> </ul> |   |

## 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

### Sticky Knowledge:

- Links scientific knowledge to design by using pulleys or gears
- Uses a more complex IT program to help enhance the quality of the product produced

### NC Skills:

- Incorporate a switch into their product
- Explain how they made their product attractive and strong
- Explain how they ensured that their product is strong and fit for purpose

### Key Vocabulary:

- Strengthen
- Reinforce
- Attractive

## Year 5 Spring Term (Food - Seasonality) Norman Banquet

## Food Technology

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

### Sticky Knowledge:

- Be both hygienic and safe in the kitchen
- Know how to prepare a meal by collecting the ingredients in the first place
- Know which season various foods are available for harvesting
- **Work within a budget to create a meal**

### NC Skills:

- Describe what they do to be both hygienic and safe
- Explain how their product should be stored with reasons

### Key Vocabulary:

- Budget
- Savoury
- Meal

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| <p>are grown, reared, caught and processed</p>   |  |   |
| <p><b>Designing</b></p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Come up with a range of ideas after collecting information from different sources</li> <li>• Produce a detailed step-by-step plan</li> <li>• Explain how a product will appeal to a specific audience</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Come up with a range of ideas after they have collected information</li> <li>• Produce a detailed step-by-step plan</li> <li>• Explain why their finished product is going to be of good quality</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Design</li> <li>• Plan</li> <li>• Sources</li> <li>• Step-by-step</li> <li>• Appeal</li> <li>• Quality</li> </ul> |   |
| <p><b>Making</b></p> <p>Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately</p> <p>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</p>                          | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Use a range of tools and equipment competently</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Persevere through different stages of the making process</li> <li>• Use a range of tools and equipment expertly</li> <li>• Measure accurately enough to ensure that everything is precise</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Spinning (NEEDS UPDATING)</li> <li>• Yarn</li> <li>• Weaving</li> <li>• Measure</li> <li>• Marking out</li> <li>• Prototype</li> <li>• Precise</li> </ul>   | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Drop spindle (NEEDS UPDATING)</li> <li>• Loom</li> <li>• Fleece</li> <li>• Shuttles</li> <li>• Tapestry needles</li> <li>• Different coloured yarns</li> <li>• Hessian</li> <li>• Coloured paper</li> <li>• Card</li> <li>• Masking tape</li> </ul> |
| <p><b>Evaluating</b></p> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider</p>   | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Suggest alternative plans; outlining the positive features and draw backs</li> <li>• Evaluate appearance and function against original criteria</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Refine their product after testing it</li> <li>• Check whether anything can be improved</li> <li>• Keep checking that their design is the best it can be</li> <li>• Evaluate appearance and function against the original criteria</li> <li>• Be motivated enough to refine and further improve their product using mouldable materials</li> </ul>   |   |

the views of others to improve their work

Understand how key events and individuals in design and technology have helped shape the world

- Suggest some alternative plans and say what the good points and drawbacks are about each
- Understand how key events and individuals in design and technology have helped shape the world

**Key Vocabulary:**

- Evaluate
- Test
- Drawbacks
- Refine

## Year 5 Summer Term (Textiles) Carnival Clothing

### Designing

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

**Sticky Knowledge:**

- Come up with a range of ideas after collecting information from different sources
- Produce a detailed step-by-step plan
- Explain how a product will appeal to a specific audience

**NC Skills:**

- Come up with a range of ideas after they have collected information
- Produce a detailed step-by-step plan
- Explain why their finished product is going to be of good quality

**Key Vocabulary:**

- Design
- Plan
- Sources
- Step-by-step
- Appeal
- Quality

### Making

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

**Sticky Knowledge:**

- Use a range of tools and equipment competently
- Make a prototype before making a final version
- Work accurately to measure, make cuts and make holes

**NC Skills:**

- Persevere through different stages of the making process
- Use a range of tools and equipment expertly
- Measure accurately enough to ensure that everything is precise
- Join textiles of different types in different ways
- Choose textiles both for their appearance and also qualities
- Use the most appropriate materials
- Work accurately to make cuts and holes

**Key Vocabulary:**

- Sew
- Needle
- Pattern
- Stitch

**Equipment/materials:**

- Material
- Ruler
- Scissors
- Thread
- Needles
- Pins
- Buttons
- Dressmaker's chalk/ fabric pens
- Decorations - Ribbons, Sequins etc
- Felt
- T-shirts

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|  | <ul style="list-style-type: none"> <li>• Running stitch</li> <li>• Thread</li> <li>• Measure</li> <li>• Marking out</li> <li>• Pattern piece</li> <li>• Prototype</li> <li>• Precise</li> </ul>   |  |
| <p><b>Evaluating</b></p> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Suggest alternative plans; outlining the positive features and draw backs</li> <li>• Evaluate appearance and function against original criteria</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Refine their product after testing it</li> <li>• Check whether anything can be improved</li> <li>• Keep checking that their design is the best it can be</li> <li>• Evaluate appearance and function against the original criteria</li> <li>• Be motivated enough to refine and further improve their product using mouldable materials</li> <li>• Suggest some alternative plans and say what the good points and drawbacks are about each</li> <li>• Understand how key events and individuals in design and technology have helped shape the world</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Test</li> <li>• Drawbacks</li> <li>• Refine</li> <li>• Mouldable</li> </ul> |  |

## Year 6 Autumn Term (Food - Food pairing)

### Woolton Pie Ration book cooking with a focus on food pairing and recovering seasonality

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| <p><b>Food Technology</b></p> <p>Understand and apply the principles of a healthy and varied diet</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Be both hygienic and safe in the kitchen</li> <li>• Know how to prepare a meal by collecting the ingredients in the first place</li> <li>• Know which season various foods are available for harvesting</li> <li>• Explain how food ingredients should be stored and give reasons</li> <li>• Work within a budget to create a meal</li> <li>• Understand the difference between a savoury and sweet dish</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Describe what they do to be both hygienic and safe</li> <li>• Explain how their product should be stored with reasons</li> <li>• Set out to grow their own products with a view to using within the pie, taking account of the time required to grow different foods</li> </ul> |  |
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| <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</p>   | <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Grams/ kilograms</li> <li>• Millilitre/ Litre</li> <li>• Knife</li> <li>• Temperature</li> <li>• Meal</li> <li>• Stored</li> </ul>   |  |
| <p><b>Designing</b></p> <p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Use market research to inform plans and ideas</li> <li>• Follow and refine original plans</li> <li>• Justify planning in a convincing way</li> <li>• Show that culture and society is considered in plans and designs</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Use a range of information to inform their design</li> <li>• Use market research to inform plans</li> <li>• Follow and refine their plan if necessary</li> <li>• Justify their plan to someone else</li> <li>• Explain how their product should be stored with reasons</li> <li>• Consider culture and society in their designs</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Design</li> <li>• Plan</li> <li>• Market research</li> <li>• Refine</li> <li>• Justify</li> <li>• Culture</li> <li>• Society</li> <li>• Step-by-step</li> </ul> |  |
| <p><b>Making</b></p> <p>Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately</p> <p>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</p>                          | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know which tool to use for a specific task</li> <li>• Know how to use any tool correctly and safely</li> <li>• Know what each tool is used for</li> <li>• Explain why a specific tool is best for a specific action</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Use tools and materials precisely</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Measure</li> <li>• Appearance</li> <li>• Quality</li> <li>• Specification</li> <li>• Specific</li> </ul>  | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Peeler</li> <li>• Mixing bowl</li> <li>• Pie dish</li> <li>• Rolling pin</li> <li>• Saucepan</li> <li>• Fridge</li> <li>• Oven</li> <li>• Knives</li> <li>• Chopping boards</li> <li>• 500g each potatoes, cauliflower, swede and carrot, all chopped</li> <li>• 4 spring onions chopped</li> <li>• 1tsp vegetable extract or 1 stock cube</li> <li>• 1tbsp rolled oats</li> <li>• For the pastry</li> <li>• 150g wholemeal flour</li> <li>• 75g butter cold and chopped into cubes</li> <li>• 8tbsp cold water</li> </ul> |



## Evaluating

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

### Sticky Knowledge:

- Know how to test and evaluate designed products
- Explain how products should be stored and give reasons
- Evaluate product against clear criteria

### NC Skills:

- Change the way they are working if needed
- Test and evaluate their final product
- Check that their product is fit for purpose
- See what would improve their product
- Suggest whether different resources could have improved their product
- Check if they need more or different information to make it even better
- Assess if their product meets all design criteria

### Key Vocabulary:

- Evaluate
- Improve
- Next time
- Appearance
- Taste

## Year 6 Spring Term (Electrical Systems - Complex switches and circuits - programming, monitoring and control) Everest Rescue Vehicle

## Designing

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

### Sticky Knowledge:

- Use market research to inform plans and ideas
- Follow and refine original plans
- Justify planning in a convincing way
- Show that culture and society is considered in plans and designs

### NC Skills:

- Use a range of information to inform their design
- Use market research to inform plans
- Follow and refine their plan if necessary
- Justify their plan to someone else
- Explain how their product should be stored with reasons
- Consider culture and society in their designs

### Key Vocabulary:

- Design
- Plan
- Market research
- Refine
- Justify
- Culture
- Society
- Step-by-step

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| <h2 style="text-align: center;">Making</h2> <p>Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately</p> <p>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</p> | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know which tool to use for a specific task</li> <li>• Know how to use any tool correctly and safely</li> <li>• Know what each tool is used for</li> <li>• Explain why a specific tool is best for a specific action</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Use tools and materials precisely</li> <li>• Consider the use of the product when selecting materials</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Measure</li> <li>• Appearance</li> <li>• Quality</li> <li>• Specification</li> <li>• Specific</li> </ul>   | <p><b>Equipment/materials:</b></p> <ul style="list-style-type: none"> <li>• Wood</li> <li>• Saws</li> <li>• Wires</li> <li>• Bulbs</li> <li>• Buzzers</li> <li>• Batteries</li> <li>• Switches</li> <li>• Mitre boxes</li> <li>• Motors</li> <li>• Wheels</li> <li>• Rubber</li> <li>• Plastic tubing</li> <li>• Art straws</li> <li>• Lollypop sticks</li> <li>• Materials</li> <li>• Matchsticks</li> <li>• Scissors</li> <li>• Glue</li> <li>• Glue gun</li> <li>• Rulers</li> <li>• Crumble microcontroller</li> </ul> |
| <h2 style="text-align: center;">Evaluating</h2> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know how to test and evaluate designed products</li> <li>• Explain how products should be stored and give reasons</li> <li>• Evaluate product against clear criteria</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Change the way they are working if needed</li> <li>• Test and evaluate their final product</li> <li>• Check that their product is fit for purpose</li> <li>• See what would improve their product</li> <li>• Suggest whether different resources could have improved their product</li> <li>• Check if they need more or different information to make it even better</li> <li>• Assess if their product meets all design criteria</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Purpose</li> <li>• Improve</li> <li>• Next time</li> <li>• Appearance</li> </ul> |  |
| <h2 style="text-align: center;">Technical Knowledge</h2> <p>Apply their understanding of how to strengthen, stiffen</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Use electrical systems correctly and accurately to enhance a given product</li> <li>• Know which IT product would further enhance a specific product</li> <li>• Use knowledge to improve a made product by strengthening, stiffening and reinforcing</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Use different kinds of circuit in their product</li> </ul>  |  |

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

- Think of ways in which adding a circuit would improve their product

**Key Vocabulary:**

- Strengthen
- Reinforce
- Enhance
- Lights
- Switches
- Buzzers
- Electric
- Circuit

**Year 6 Summer Term (Mechanisms - Pulleys and gears)  
Crane to lower packages into camp**

## Designing

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

**Sticky Knowledge:**

- Use market research to inform plans and ideas
- Follow and refine original plans
- Justify planning in a convincing way
- Show that culture and society is considered in plans and designs

**NC Skills:**

- Use a range of information to inform their design
- Use market research to inform plans
- Follow and refine their plan if necessary
- Justify their plan to someone else
- Explain how their product should be stored with reasons
- Consider culture and society in their designs

**Key Vocabulary:**

- Design
- Plan
- Market research
- Refine
- Justify
- Culture
- Society
- Step-by-step

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| <p><b>Evaluating</b></p> <p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Know how to test and evaluate designed products</li> <li>• Explain how products should be stored and give reasons</li> <li>• Evaluate product against clear criteria</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Change the way they are working if needed</li> <li>• Test and evaluate their final product</li> <li>• Check that their product is fit for purpose</li> <li>• See what would improve their product</li> <li>• Suggest whether different resources could have improved their product</li> <li>• Check if they need more or different information to make it even better</li> <li>• Assess if their product meets all design criteria</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Evaluate</li> <li>• Purpose</li> <li>• Improve</li> <li>• Next time</li> <li>• Appearance</li> </ul> |  |
| <p><b>Technical Knowledge</b></p> <p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>Understand and use mechanical systems in their products (for</p>  | <p><b>Sticky Knowledge:</b></p> <ul style="list-style-type: none"> <li>• Use electrical systems correctly and accurately to enhance a given product</li> <li>• Know which IT product would further enhance a specific product</li> <li>• Use knowledge to improve a made product by strengthening, stiffening and reinforcing</li> </ul> <p><b>NC Skills:</b></p> <ul style="list-style-type: none"> <li>• Use different kinds of circuit in their product</li> <li>• Think of ways in which adding a circuit would improve their product</li> </ul> <p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Strengthen</li> <li>• Reinforce</li> </ul>   |  |

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

- Enhance
- Lights
- Switches
- Buzzers
- Electric
- Circuit