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| Year R                                                                                                   | <p><b>Mechanisms: Vehicles</b></p> <p>Design, make and evaluate a <b>vehicle</b> (product) for a <b>character</b> (user) for <b>moving somewhere</b> (purpose).</p>  <p>1: What products already exist? <i>Evaluate</i><br/>           2: What is our design criteria? How can our product be purposeful, functional and appealing? <i>Design</i><br/>           3: What materials and tools will I use to make the product and why? 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| <i>Make</i><br>     | Select from and use tools, materials and equipment to create a simple product.<br><br>Use different fabrics.<br><br>Cut and join fabrics with simple techniques (e.g. glue).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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                                                       |
| <i>Evaluate</i><br> | Explore a range of existing products.<br><i>What product is it? Who is it for? What is it for? How does it work? Where might it be used? What materials is it made from? Why have these been used? What do you like and dislike about it?</i><br><br>Identify something they like and would change about a product they make.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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Mechanisms: Sliders and Levers

Design, make and evaluate a **moving book/poster** (product) for **another child** (user) for **playing with during a story** (purpose).

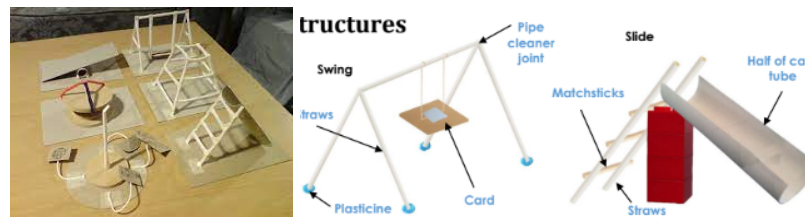


- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use talking and mock-ups to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | Design a functional and appealing product for a chosen user and purpose based on simple design criteria - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Generate, develop, model and communicate their ideas as appropriate through <b>talking</b> , drawing, templates and <b>mock-ups</b> .                                  |
| <b>Make</b><br>     | Select materials for the product and give simple reasons why they have chosen them.<br><br>Select from and use a range of tools, materials and equipment to perform practical tasks.<br><br>Use simple finishing techniques suitable for the product they are creating.<br><br>Use sliders and levers for a purpose.                                                         |
| <b>Evaluate</b><br> | Explore a range of existing products.<br><i>What product is it? Who is it for? What is it for? How does it work? Where might it be used? What materials is it made from? Why have these been used? What do you like and dislike about it?</i><br><br>Evaluate their product by discussing how well it works in relation to the purpose and whether it meets design criteria. |

Structures: Freestanding Structures

Design, make and evaluate a **playground structure** (product) for a **toy figure / character** (user) for **playing with** (purpose).

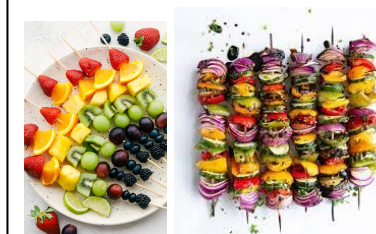


- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use talking and drawing to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | Design a functional and appealing product for a chosen user and purpose based on simple design criteria - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Generate, develop, model and communicate their ideas as appropriate through <b>talking</b> , <b>drawing</b> , templates and mock-ups.                                  |
| <b>Make</b><br>     | Select materials for the product and give simple reasons why they have chosen them.<br><br>Select from and use a range of tools, materials and equipment to perform practical tasks.<br><br>Use simple finishing techniques suitable for the product they are creating.<br><br>Know how to make freestanding structures stronger, stiffer and more stable.                   |
| <b>Evaluate</b><br> | Explore a range of existing products.<br><i>What product is it? Who is it for? What is it for? How does it work? Where might it be used? What materials is it made from? Why have these been used? What do you like and dislike about it?</i><br><br>Evaluate their product by discussing how well it works in relation to the purpose and whether it meets design criteria. |

Food: Preparing Fruit and Vegetables

Design, make and evaluate a **fruit / vegetable snack** (product) for **themselves** (user) for a **picnic** (purpose).



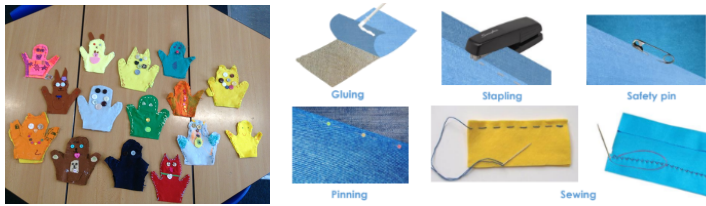
- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use talking and drawing to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | Design a functional and appealing product for a chosen user and purpose based on simple design criteria - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Generate, develop, model and communicate their ideas as appropriate through <b>talking</b> , <b>drawing</b> , templates and mock-ups.                                                                                                                                                                                                                                                                                                                          |
| <b>Make</b><br>     | Select materials for the product and give simple reasons why they have chosen them.<br><br>Select from and use a range of tools, materials and equipment to perform practical tasks.<br><br>Use simple finishing techniques suitable for the product they are creating.<br><br>Understand and apply the principles of a healthy and varied diet to prepare dishes, including how ingredients are part of the eatwell plate.<br><br>Prepare (e.g. measuring, chopping, peeling, grating) and assemble ingredients safely and hygienically.<br><br>Know that all food comes from plants and animals and that it must be farmed, grown elsewhere (e.g. home) or caught. |
| <b>Evaluate</b><br> | Explore a range of existing products.<br><i>What product is it? Who is it for? What is it for? How does it work? Where might it be used? What materials is it made from? Why have these been used? What do you like and dislike about it?</i><br><br>Evaluate their product by discussing how well it works in relation to the purpose and whether it meets design criteria.                                                                                                                                                                                                                                                                                         |



Textiles: Templates and Joining Techniques

Design, make and evaluate a **puppet** (product) for a **friend** (user) for **putting on a puppet show** (purpose).

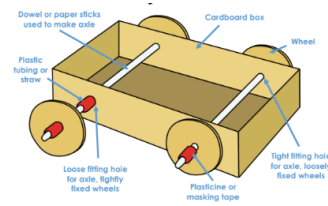


- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use talking and templates to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <i>Design</i><br>   | Design a functional and appealing product for a chosen user and purpose based on simple design criteria - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Generate, develop, model and communicate their ideas as appropriate through <b>talking</b> , drawing, <b>templates</b> and mock-ups.                                                                                                                                                                                                                                                                                    |
| <i>Make</i><br>     | Select materials for the product and give simple reasons why they have chosen them.<br><br>Select from and use a range of tools, materials and equipment to perform practical tasks.<br><br>Use simple finishing techniques suitable for the product they are creating.<br><br>Understand how simple 3D textile products are made, using a template to create two identical shapes.<br><br>Understand how to join fabrics using different techniques (e.g. running stitch, glue, over stitch, stapling).<br><br>Explore different finishing techniques (e.g. painting, fabric crayons, stitching, sequins, buttons, ribbons). |
| <i>Evaluate</i><br> | Explore a range of existing products.<br><i>What product is it? Who is it for? What is it for? How does it work? Where might it be used? What materials is it made from? Why have these been used? What do you like and dislike about it?</i><br><br>Evaluate their product by discussing how well it works in relation to the purpose and whether it meets design criteria.                                                                                                                                                                                                                                                  |

Mechanisms: Wheels and Axles

Design, make and evaluate a **transportation vehicle** (product) for an **explorer** (user) for **moving around in** (purpose).



- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use talking and drawing to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <i>Design</i><br>   | Design a functional and appealing product for a chosen user and purpose based on simple design criteria - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Generate, develop, model and communicate their ideas as appropriate through <b>talking</b> , <b>drawing</b> , templates and mock-ups.                                              |
| <i>Make</i><br>     | Select materials for the product and give simple reasons why they have chosen them.<br><br>Select from and use a range of tools, materials and equipment to perform practical tasks.<br><br>Use simple finishing techniques suitable for the product they are creating.<br><br>Explore and use wheels, axles and axle holders.<br><br>Distinguish between fixed and freely moving axles. |
| <i>Evaluate</i><br> | Explore a range of existing products.<br><i>What product is it? Who is it for? What is it for? How does it work? Where might it be used? What materials is it made from? Why have these been used? What do you like and dislike about it?</i><br><br>Evaluate their product by discussing how well it works in relation to the purpose and whether it meets design criteria.             |

Food: Preparing Fruit and Vegetables

Design, make and evaluate a **fruit salad** (product) for **their family** (user) for **enjoying eating healthily** (purpose).

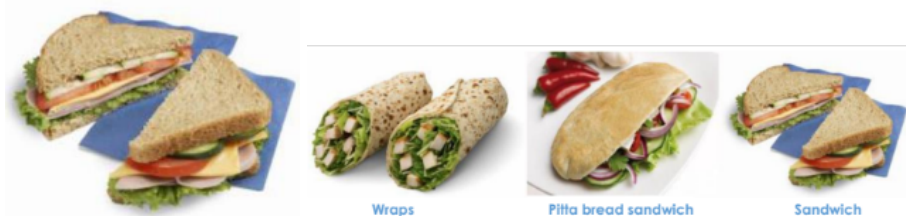


- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use talking to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <i>Design</i><br>   | Design a functional and appealing product for a chosen user and purpose based on simple design criteria - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Generate, develop, model and communicate their ideas as appropriate through <b>talking</b> , drawing, templates and mock-ups.                                                                                                                                                                                                                                                                                                                                  |
| <i>Make</i><br>     | Select materials for the product and give simple reasons why they have chosen them.<br><br>Select from and use a range of tools, materials and equipment to perform practical tasks.<br><br>Use simple finishing techniques suitable for the product they are creating.<br><br>Understand and apply the principles of a healthy and varied diet to prepare dishes, including how ingredients are part of the eatwell plate.<br><br>Prepare (e.g. measuring, chopping, peeling, grating) and assemble ingredients safely and hygienically.<br><br>Know that all food comes from plants and animals and that it must be farmed, grown elsewhere (e.g. home) or caught. |
| <i>Evaluate</i><br> | Explore a range of existing products.<br><i>What product is it? Who is it for? What is it for? How does it work? Where might it be used? What materials is it made from? Why have these been used? What do you like and dislike about it?</i><br><br>Evaluate their product by discussing how well it works in relation to the purpose and whether it meets design criteria.                                                                                                                                                                                                                                                                                         |

**Food: Healthy and Varied Diet**

Design, make and evaluate a **type of sandwich** (product) for **themselves** (user) for **eating on a picnic** (purpose).

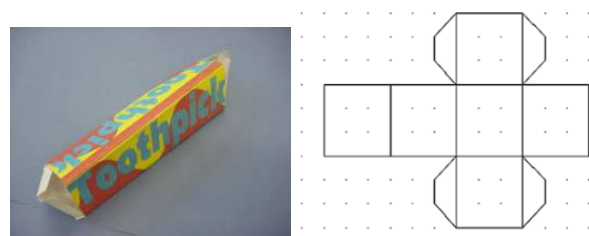


- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use cross-sectional drawings to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | Generate realistic ideas and design criteria collaboratively, focusing on the needs of the user and purpose of the product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Use annotated sketches, prototypes, <b>cross-sectional drawings</b> and computer-aided design to develop and communicate ideas.                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Make</b><br>     | Plan and order the main stages of making.<br><br>Select appropriate materials for the product according to their functional properties and aesthetic qualities.<br><br>Select from and use appropriate tools with some accuracy.<br><br>Use finishing techniques suitable for the product they are creating.<br><br>Understand and apply the principles of a healthy and varied diet to prepare dishes, including how ingredients are part of the eatwell plate.<br><br>Prepare (e.g. measuring, chopping, peeling, grating) and assemble ingredients safely and hygienically, following a recipe.<br><br>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. |
| <b>Evaluate</b><br> | Investigate and evaluate a range of existing products, including analysing the materials, components and techniques that have been used.<br><br>Test and evaluate their product against design criteria and the intended user and purpose.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Structures: Shell Structures**

Design, make and evaluate a **cardboard packaging box** (product) for a **shop** (user) for **containing and selling a product** (purpose).



- 1: What products already exist? How did Robert Gair and Kelloggs develop cardboard packaging? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use annotated sketches and computer-aided design to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | Generate realistic ideas and design criteria collaboratively, focusing on the needs of the user and purpose of the product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Use <b>annotated sketches</b> , prototypes, cross-sectional drawings and <b>computer-aided design</b> to develop and communicate ideas.                                                                                                 |
| <b>Make</b><br>     | Plan and order the main stages of making.<br><br>Select appropriate materials for the product according to their functional properties and aesthetic qualities.<br><br>Select from and use appropriate tools with some accuracy.<br><br>Use finishing techniques suitable for the product they are creating.<br><br>Develop and use knowledge of how to construct strong, stiff shell structures.<br><br>Develop and use knowledge of nets of cubes and cuboids. |
| <b>Evaluate</b><br> | Investigate and evaluate a range of existing products, including analysing the materials, components and techniques that have been used.<br><br>Understand how a key event/individual has influenced the development of an existing product.<br><br>Test and evaluate their product against design criteria and the intended user and purpose.                                                                                                                   |

**Textiles: 2D Shape to 3D Product**

Design, make and evaluate a **pencil case** (product) for **themselves** (user) for **carrying things** (purpose).



- 1: What products already exist? How did the development of velcro/hook-and-loop fasteners transform products? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use prototypes to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | Generate realistic ideas and design criteria collaboratively, focusing on the needs of the user and purpose of the product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i> .<br><br>Use annotated sketches, <b>prototypes</b> , cross-sectional drawings and computer-aided design to develop and communicate ideas.                                                                                                                                                              |
| <b>Make</b><br>     | Plan and order the main stages of making.<br><br>Select appropriate materials for the product according to their functional properties and aesthetic qualities.<br><br>Select from and use appropriate tools with some accuracy.<br><br>Use finishing techniques suitable for the product they are creating.<br><br>Know how to strengthen, stiffen and reinforce existing fabrics.<br><br>Understand how to securely join two pieces of fabric together.<br><br>Understand the need for patterns and seam allowances. |
| <b>Evaluate</b><br> | Investigate and evaluate a range of existing products, including analysing the materials, components and techniques that have been used.<br><br>Understand how a key event/individual has influenced the development of an existing product.<br><br>Test and evaluate their product against design criteria and the intended user and purpose.                                                                                                                                                                         |

**Mechanisms: Levers and Linkages**

Design, make and evaluate a **book with moving parts** (product) for **younger children** (user) for **entertainment** (purpose).

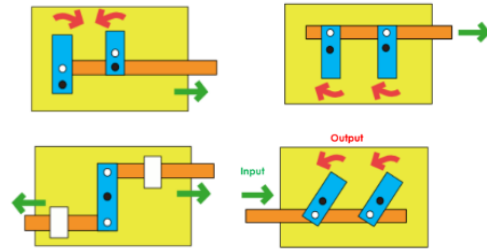
**Electrical Systems: Circuits and Switches**

Design, make and evaluate a **buzzer** (product) for **themselves** (user) for **using in a quiz** (purpose).

**Food: Healthy and Varied Diet**

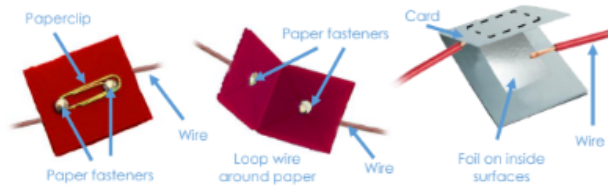
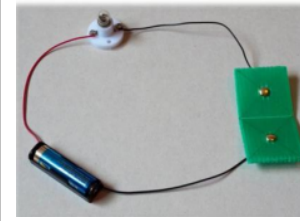
Design, make and evaluate a **salad** (product) for **their family** (user) for **eating healthily** (purpose).





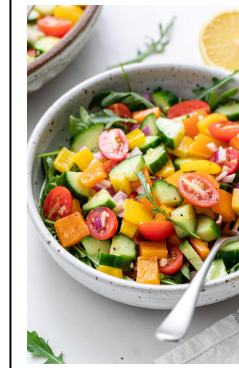
- 1: What products already exist? How did Mary Anderson's development of the windscreen wiper change the use of levers and linkages? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use prototypes to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | <p>Generate realistic ideas and design criteria collaboratively, focusing on the needs of the user and purpose of the product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i>.</p> <p>Use annotated sketches, <b>prototypes</b>, cross-sectional drawings and computer-aided design to develop and communicate ideas.</p>                                                                 |
| <b>Make</b><br>     | <p>Plan and order the main stages of making.</p> <p>Select appropriate materials for the product according to their functional properties and aesthetic qualities.</p> <p>Select from and use appropriate tools with some accuracy.</p> <p>Use finishing techniques suitable for the product they are creating.</p> <p>Understand and use lever and linkage mechanisms.</p> <p>Distinguish between fixed and loose pivots.</p> |
| <b>Evaluate</b><br> | <p>Investigate and evaluate a range of existing products, including analysing the materials, components and techniques that have been used.</p> <p>Understand how a key event/individual has influenced the development of an existing product.</p> <p>Test and evaluate their product against design criteria and the intended user and purpose.</p>                                                                          |



- 1: What products already exist? How has the invention of electricity helped shape the world? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use annotated sketches to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | <p>Generate realistic ideas and design criteria collaboratively, focusing on the needs of the user and purpose of the product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i>.</p> <p>Use <b>annotated sketches</b>, prototypes, cross-sectional drawings and computer-aided design to develop and communicate ideas.</p>                      |
| <b>Make</b><br>     | <p>Plan and order the main stages of making.</p> <p>Select appropriate materials for the product according to their functional properties and aesthetic qualities.</p> <p>Select from and use appropriate tools with some accuracy.</p> <p>Use finishing techniques suitable for the product they are creating.</p> <p>Understand and use electrical systems in their products.</p> |
| <b>Evaluate</b><br> | <p>Investigate and evaluate a range of existing products, including analysing the materials, components and techniques that have been used.</p> <p>Understand how a key event/individual has influenced the development of an existing product.</p> <p>Test and evaluate their product against design criteria and the intended user and purpose.</p>                               |



- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use annotated sketches to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <b>Design</b><br>   | <p>Generate realistic ideas and design criteria collaboratively, focusing on the needs of the user and purpose of the product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight)</i>.</p> <p>Use <b>annotated sketches</b>, prototypes, cross-sectional drawings and computer-aided design to develop and communicate ideas.</p>                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Make</b><br>     | <p>Plan and order the main stages of making.</p> <p>Select appropriate materials for the product according to their functional properties and aesthetic qualities.</p> <p>Select from and use appropriate tools with some accuracy.</p> <p>Use finishing techniques suitable for the product they are creating.</p> <p>Understand and apply the principles of a healthy and varied diet to prepare dishes, including how ingredients are part of the eatwell plate.</p> <p>Prepare (e.g. measuring, chopping, peeling, grating) and assemble ingredients safely and hygienically, following a recipe.</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</p> |
| <b>Evaluate</b><br> | <p>Investigate and evaluate a range of existing products, including analysing the materials, components and techniques that have been used.</p> <p>Test and evaluate their product against design criteria and the intended user and purpose.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Year 5

**Structures: Frame Structures**

Design, make and evaluate a **model of a building** (product) for **the class** (user)

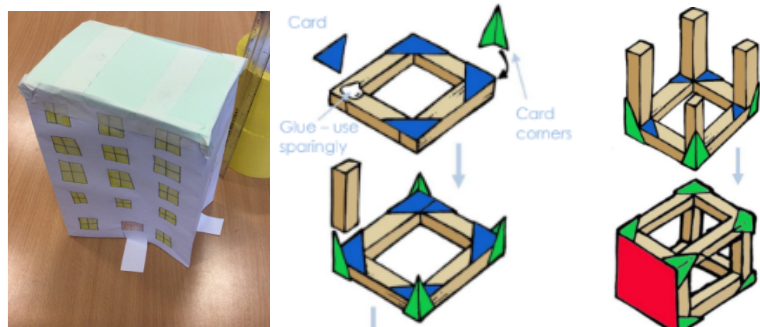
**Electrical Systems: Monitoring and Control**

Design, make and evaluate a **fairground ride** (product) for **an interactive**

**Food: Celebrating Culture and Seasonality**

Design, make and evaluate a **pizza** (product) for **themselves** (user) for a **pizza**

for **building a model village** (purpose).



- 1: What products already exist? How have significant architects helped shape the world? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use cross-sectional diagrams and prototypes to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <i>Design</i><br>   | <p>Generate innovative ideas based upon research into user needs and existing products using surveys, interviews and questionnaires.</p> <p>Develop a design specification for a functional product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight) / manufacturing resources (tools, time) / safety / environmental considerations / cost.</i></p> <p>Generate, develop, model and communicate ideas through discussion, annotated sketches, <b>cross-sectional</b> and exploded diagrams, <b>prototypes</b>, pattern pieces and computer-aided design.</p> |
| <i>Make</i><br>     | <p>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select and accurately assemble materials.</p> <p>Use finishing and decorative techniques suitable for the product they are designing and making.</p> <p>Develop and use knowledge of how to strengthen, stiffen and reinforce 3D frameworks.</p>                                                                                                                                                                                                                     |
| <i>Evaluate</i><br> | <p>Investigate and evaluate a range of existing products.</p> <p>Investigate key events and individuals relevant to existing product development.</p> <p>Test products with the intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p>                                                                                                                                                                                                                                                                                      |

**display** (user) for **entertainment** (purpose).

link to Computing



- 1: What products already exist? How has the invention and development of lights helped shape the world? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use annotated sketches to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <i>Design</i><br>   | <p>Generate innovative ideas based upon research into user needs and existing products using surveys, interviews and questionnaires.</p> <p>Develop a design specification for a functional product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight) / manufacturing resources (tools, time) / safety / environmental considerations / cost.</i></p> <p>Generate, develop, model and communicate ideas through discussion, <b>annotated sketches</b>, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>                              |
| <i>Make</i><br>     | <p>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select and accurately assemble materials.</p> <p>Use finishing and decorative techniques suitable for the product they are designing and making.</p> <p>Understand that mechanical and electrical systems have an input, process and an output.</p> <p>Understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors).</p> <p>Apply their understanding of computing to program, monitor and control their products.</p> |
| <i>Evaluate</i><br> | <p>Investigate and evaluate a range of existing products.</p> <p>Investigate key events and individuals relevant to existing product development.</p> <p>Test products with the intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p>                                                                                                                                                                                                                                                                                                            |

**buffet** (purpose).



- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use exploded diagrams to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <i>Design</i><br>   | <p>Generate innovative ideas based upon research into user needs and existing products using surveys, interviews and questionnaires.</p> <p>Develop a design specification for a functional product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight) / manufacturing resources (tools, time) / safety / environmental considerations / cost.</i></p> <p>Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and <b>exploded diagrams</b>, prototypes, pattern pieces and computer-aided design.</p>                                                                                                                                                                       |
| <i>Make</i><br>     | <p>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select and accurately assemble materials.</p> <p>Use finishing and decorative techniques suitable for the product they are designing and making.</p> <p>Understand and apply the principles of a healthy and varied diet to prepare dishes, including how ingredients are part of the eatwell plate.</p> <p>Know how to use utensils and equipment including heat sources to prepare and cook food, creating and refining recipes.</p> <p>Understand the importance of correct storage and handling of ingredients.</p> <p>Understand about seasonality in relation to food products and the source of different food products.</p> |
| <i>Evaluate</i><br> | <p>Investigate and evaluate a range of existing products.</p> <p>Test products with the intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



Design, make and evaluate a **mobile phone case** (product) for **themselves or a chosen adult** (user) for **carrying and protecting a phone** (purpose).



- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use pattern pieces and computer-aided design to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <p><i>Design</i></p> | <p>Generate innovative ideas based upon research into user needs and existing products using surveys, interviews and questionnaires.</p> <p>Develop a design specification for a functional product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight) / manufacturing resources (tools, time) / safety / environmental considerations / cost.</i></p> <p>Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, <b>pattern pieces</b> and <b>computer-aided design</b>.</p> |
|                      | <p>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select and accurately assemble materials.</p> <p>Use finishing and decorative techniques suitable for the product they are designing and making.</p> <p>Use a combination of accurately made pattern pieces, fabric shapes and different fabrics (strengthened, stiffened and reinforced where appropriate) within a product.</p>                                                                                                                                    |
| <p><i>Make</i></p>   | <p>Investigate and evaluate a range of existing products.</p> <p>Test products with the intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p>                                                                                                                                                                                                                                                                                                                                                                              |

Design, make and evaluate a **couscous dish** (product) for **their family** (user) for **eating to celebrate cultures from around the world** (purpose).

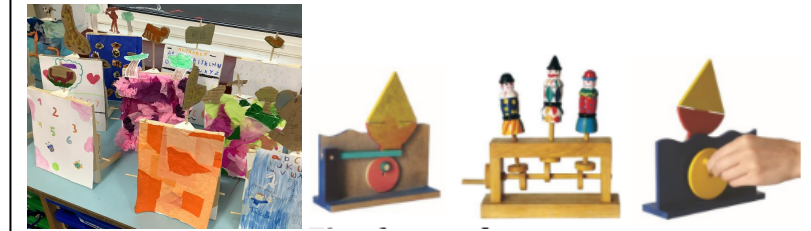


- 1: What products already exist? How have chefs from different cuisines developed the food we eat (Jamie Oliver, Heston Blumenthal, Delia Smith, Yotam Ottolenghi, Magnus Nilsson, Francis Mallmann, Vikas Khanna)? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use annotated sketches to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <p><i>Design</i></p> | <p>Generate innovative ideas based upon research into user needs and existing products using surveys, interviews and questionnaires.</p> <p>Develop a design specification for a functional product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight) / manufacturing resources (tools, time) / safety / environmental considerations / cost.</i></p> <p>Generate, develop, model and communicate ideas through discussion, <b>annotated sketches</b>, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>                                                                                                                                                                       |
|                      | <p>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select and accurately assemble materials.</p> <p>Use finishing and decorative techniques suitable for the product they are designing and making.</p> <p>Understand and apply the principles of a healthy and varied diet to prepare dishes, including how ingredients are part of the eatwell plate.</p> <p>Know how to use utensils and equipment including heat sources to prepare and cook food, creating and refining recipes.</p> <p>Understand the importance of correct storage and handling of ingredients.</p> <p>Understand about seasonality in relation to food products and the source of different food products.</p> |
| <p><i>Make</i></p>   | <p>Investigate and evaluate a range of existing products.</p> <p>Investigate key events and individuals relevant to existing product development.</p> <p>Test products with the intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

Design, make and evaluate a **moving toy** (product) for a **younger child** (user) for **playing with** (purpose).

*link to Computing (3D modelling and printing)*



- 1: What products already exist? *Evaluate*
- 2: What is our design criteria? How can our product be purposeful, functional and appealing? How can we use exploded diagrams and computer-aided design to show our design? *Design*
- 3: What materials and tools will I use to make the product and why? What technical skills will I use to make the product? *Design Make Evaluate*
- 4: How effectively does my product meet its purpose? *Evaluate*

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| <p><i>Design</i></p> | <p>Generate innovative ideas based upon research into user needs and existing products using surveys, interviews and questionnaires.</p> <p>Develop a design specification for a functional product - <i>user / functionality / aesthetics / materials / scale (shape, size, weight) / manufacturing resources (tools, time) / safety / environmental considerations / cost.</i></p> <p>Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and <b>exploded diagrams</b>, prototypes, pattern pieces and <b>computer-aided design</b>.</p> |
|                      | <p>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</p> <p>Competently select and accurately assemble materials.</p> <p>Use finishing and decorative techniques suitable for the product they are designing and making.</p> <p>Understand that mechanical and electrical systems have an input, process and an output.</p> <p>Understand how cams, gears and pulleys can be used to speed up, slow down or change the direction of movement.</p>                                                                                            |
| <p><i>Make</i></p>   | <p>Investigate and evaluate a range of existing products.</p> <p>Test products with the intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p>                                                                                                                                                                                                                                                                                                                                                                              |