



## *'We Grow Together in God's Love'*

### Design and Technology Curriculum

|                                                                                                                                                                      | Year 1                  |           |         | Year 2        |                         |                   |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------|---------|---------------|-------------------------|-------------------|---------|
|                                                                                                                                                                      | Constructing a windmill | Smoothies | Puppets | Balanced diet | Making a moving monster | Baby bear's chair | Pouches |
| Design purposeful, functional, appealing products for themselves and other users based on design criteria.                                                           | X                       | X         | X       | X             | X                       | X                 | X       |
| Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. | X                       | X         | X       | X             | X                       | X                 | X       |
| Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].                                | X                       | X         | X       | X             | X                       | X                 | X       |
| Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics         | x                       | X         | X       | X             | X                       | X                 | X       |
| Explore and evaluate a range of existing products.                                                                                                                   | X                       |           |         | X             | X                       |                   | X       |
| Evaluate their ideas and products against design criteria                                                                                                            | X                       | x         | x       | X             | x                       | X                 | x       |
| Build structures, exploring how they can be made stronger, stiffer and more stable.                                                                                  | X                       |           |         |               |                         | X                 |         |
| Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.                                                                      | x                       |           |         |               | x                       |                   |         |

[illegible]



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|                                                                                                                                           |   |   |  |   |   |   |   |   |   |   |   |   |
|-------------------------------------------------------------------------------------------------------------------------------------------|---|---|--|---|---|---|---|---|---|---|---|---|
| Understand how key events and individuals in design and technology have helped shape the world.                                           |   | X |  |   | X |   | x |   | X |   | X |   |
| Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.                                            |   |   |  |   |   | x |   | X | X |   |   |   |
| Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].                         |   | x |  |   | x |   |   |   |   |   |   |   |
| Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. |   |   |  |   |   |   |   | x |   |   | x |   |
| Apply their understanding of computing to program, monitor and control their products.                                                    |   |   |  |   |   |   | X |   | x |   |   | x |
| Understand and apply principles of a healthy and varied diet.                                                                             | X |   |  |   |   |   | X |   |   | X |   |   |
| Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.                                             | X |   |  | x |   |   | X |   |   | X |   |   |
| Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.                          | X |   |  |   |   |   | x |   |   | x |   |   |

|        | Cooking and nutrition | Mechanisms              | Structures              | Textiles                  | Electrical systems | Digital world |
|--------|-----------------------|-------------------------|-------------------------|---------------------------|--------------------|---------------|
| Year 1 | Smoothies             |                         | Constructing a windmill | Puppets                   |                    |               |
| Year 2 | Balanced diet         | Making a moving monster | Baby bear's chair       | Pouches                   |                    |               |
| Year 3 | Eating seasonally     | Pneumatic toys          |                         | Cross stitch and appliqué |                    |               |



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|        |                     |                        |           |  |                  |                      |
|--------|---------------------|------------------------|-----------|--|------------------|----------------------|
| Year 4 | Adapting a recipe   | Making a slingshot car | Pavilions |  |                  |                      |
| Year 5 | Developing a recipe |                        |           |  | Doodlers         | Monitoring devices   |
| Year 6 | Come dine with me   |                        |           |  | Steady hand game | Navigating the world |

|        | Autumn 2                           | Spring 2                  | Summer 2                  |
|--------|------------------------------------|---------------------------|---------------------------|
| Year 1 | Constructing a windmill            | Puppets                   | Smoothies                 |
| Year 2 | Making a moving monster<br>Pouches | Baby bear's chair         | Balanced diet             |
| Year 3 | Eating seasonally                  | Pneumatic toys *option 2* | Cross stitch and appliqué |
| Year 4 | Adapting a recipe                  | Making a slingshot car    | Pavilions                 |
| Year 5 | Doodlers                           | Developing a recipe       | Monitoring devices        |
| Year 6 | Steady hand game                   | Come dine with me         | Navigating the world      |

|      |                       |            |            |          |                    |               |
|------|-----------------------|------------|------------|----------|--------------------|---------------|
| KEY: | Cooking and nutrition | Mechanisms | Structures | Textiles | Electrical systems | Digital world |
|------|-----------------------|------------|------------|----------|--------------------|---------------|

### Curriculum

|                                |
|--------------------------------|
| <b>Year 1</b>                  |
| <b>Autumn 2</b>                |
| <b>Constructing a windmill</b> |



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### **Lesson 1 : Windmills**

**WALT** - To create a stable structure.

Success criteria:

I can find the centre of an object.

I can puncture a hole.

I can add weight to a structure.

### **Lesson 2 : making the sail**

**WALT:** To use tools and equipment accurately to make part of a structure.

Success criteria:

I can hold scissors correctly.

I can begin to estimate equal distances.

I can cut carefully.

I can fold to make the shape of the structure.

### **Lesson 3 : attaching the sail**

**WALT :** To join parts of a structure.

Success criteria :



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I can widen a hole.  
I can join parts together.  
I can attach a supporting structure.  
I can test a structure.

### **Lesson 4: Evaluating windmills**

WALT: To evaluate a structure

Success criteria:

I can test my windmill.  
I can make my design better.  
I can decorate my windmill for the user.



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#### Knowledge

#### Technical

- To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses).
- To understand that axles are used in structures and mechanisms to make parts turn in a circle.
- To begin to understand that different structures are used for different purposes.
- To know that a structure is something that has been made and put together.
- To know that the sails or blades of a windmill are moved by the wind.
- To know that a structure is something built for a reason.
- To know that stable structures do not topple.
- To know that adding weight to the base of a structure can make it more stable.
- To know that materials can be manipulated to improve strength and stiffness.
- To know that a structure is something which has been formed or made from parts.
- To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.
- To know that a 'strong' structure is one which does not break easily.
- To know that a 'stiff' structure or material is one which does not bend easily.

#### Additional

- To know that design criteria is a list of points to ensure the product meets the clients needs and wants.
- To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity.
- To know that windmill turbines use wind to turn and make the machines inside work.
- To know that a windmill is a structure with sails that are moved by the wind.
- To know the three main parts of a windmill are the turbine, axle and structure.
- To know that windmills are used to generate power and were used for grinding flour



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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Skills                 | <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Learning the importance of a clear design criteria.</li> <li>• Including individual preferences and requirements in a design.</li> <li>• Generating and communicating ideas using sketching and modelling.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Making stable structures from card.</li> <li>• Following instructions to cut and assemble the supporting structure of a windmill.</li> <li>• Making functioning turbines and axles which are assembled into a main supporting structure.</li> <li>• Finding the middle of an object.</li> <li>• Puncturing holes.</li> <li>• Adding weight to structures.</li> <li>• Creating supporting structures.</li> <li>• Cutting evenly and carefully</li> </ul> |                                                                                    |
| vocab                  | base<br>centre<br>design<br>equal<br>evaluate<br>middle<br>rotate<br>rotor<br>rotor blades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | sails<br>same<br>stable<br>strong<br>structure<br>test<br>weak<br>wind<br>windmill |
| Cross curricular links | <p><b>Maths</b><br/>           Geometry - Pupils use their knowledge of shapes to identify circles and find the centre to help them construct a windmill structure.</p> <p><b>Geography</b><br/>           Learning about how windmills are used today to generate electricity (wind turbines)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                    |





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|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key people | <p><b>Cornelis Corneliszoon van Uitgeest</b></p> <ul style="list-style-type: none"> <li>● Originating from the Netherlands, he revolutionised windmill design in the 16th century.</li> <li>● His modifications increased efficiency, particularly in sawing timber, thereby transforming the utility of Dutch windmills during his era.</li> </ul> | <p><b>Dr James Blyth</b></p> <ul style="list-style-type: none"> <li>● A Scottish engineer and academic from the late 19th century.</li> <li>● He is recognised for creating one of the initial wind turbines that generated electricity.</li> <li>● His contributions marked a significant step forward in the quest for harnessing wind energy</li> </ul> |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Year 1

#### Spring 2

#### Puppets

#### Lesson 1 : Joining fabric

WALT : To join fabrics together using different methods.

Success criteria:

I can remember that different techniques may be used to join fabrics for different purposes.  
I can join fabric by pinning, stapling or glueing.

#### Lesson 2 : deigning my puppet



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WALT : To use a template to create my design.

Success criteria:

I can design a puppet using a template.

I can use a template to cut out my puppet.

### **Lesson 3 : making and joining my puppet**

WALT: To join two fabrics together accurately.

Success criteria:

I can join fabrics together.

I can align two pieces of fabric.

I can use a template.

I can fit my hand into my puppet.

### **Lesson 4 : decorating my puppet**

WALT: To embellish my design using joining methods.

Success criteria:

I can use joining methods to decorate my puppet.

I can still put my hand into the puppet after it is decorated.

I can evaluate my own and others' work.



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|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Knowledge  | <ul style="list-style-type: none"><li>• To know that 'joining technique' means connecting two pieces of material together.</li><li>• To know that there are various temporary methods of joining fabric by using staples, glue or pins.</li><li>• To understand that different techniques for joining materials can be used for different purposes.</li><li>• To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.</li><li>• To know that drawing a design idea is useful to see how an idea will look.</li></ul> |
| skills     | <p><b>Design</b></p> <ul style="list-style-type: none"><li>• Using a template to create a design for a puppet.</li></ul> <p><b>Make</b></p> <ul style="list-style-type: none"><li>• Cutting fabric neatly with scissors.</li><li>• Using joining methods to decorate a puppet.</li><li>• Sequencing steps for construction.</li></ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"><li>• Reflecting on a finished product, explaining likes and dislikes.</li></ul>                                                                                  |
| Vocabulary | decorate<br>design<br>fabric<br>glue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



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|                        |                                                                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | model<br>hand puppet<br>safety pin<br>staple<br>stencil<br>template                                                                                                |
| Cross curricular links | <b>English</b><br>Reading - Listening to and answering questions about the main character's appearance in Little Red Riding Hood (or another story of your choice) |
| Key people             |                                                                                                                                                                    |

#### **Year 1**

#### **Summer 2**

#### **Smoothies**

#### **Lesson 1 : fruits**

WALT: To identify fruits.

Success criteria :

I can name fruits and vegetables.

I can identify seeds.

I can sort fruits and non-fruits.



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### **Lesson 2: Growing**

WALT: To describe where fruits and vegetables grow.

Success criteria:

I can name places where fruits and vegetables grow.

I can decide whether a fruit or vegetable will grow aboveground or underground.

I can make predictions about where edible parts of plants will grow.

### **Lesson 3 : cutting and juicing**

WALT: To practise food preparation skills.

Success criteria :

I can use a fork to hold foods I am cutting.

I can use a table knife to cut soft foods.

I can use a juicer to get juice from fruits.

I can work safely and follow instructions.

### **Lesson 4: testing ingredients**

WALT: To select ingredients for a recipe.



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Success criteria:

- I can choose fruits and vegetables to taste.
- I can suggest fruits to put together based on taste.
- I can describe a food's taste.
- I can decide on three ingredients to create a recipe.

### **Lesson 5: making smoothies**

WALT: To apply food preparation skills to a recipe.

Success criteria :

- I can gather the ingredients for a simple recipe.
- I can cut and juice fruits as part of a recipe.
- I can use my senses to compare my smoothie with my partner's.

### **Lesson 6 : Evaluating**

WALT: To evaluate against the design brief.

Success criteria:

- I can colour a template to create a carton design.
- I can choose my favourite recipe.
- I can talk to the class about the design brief.



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|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |
| Knowledge  | <ul style="list-style-type: none"> <li>• To know that a blender is a machine which mixes ingredients together into a smooth liquid.</li> <li>• To know that a fruit has seeds.</li> <li>• To know that fruits grow on trees or vines.</li> <li>• To know that vegetables can grow either above or below ground.</li> <li>• To know that vegetables is any edible part of a plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).</li> </ul>                                                        |                   |
| skills     | <p>Design</p> <ul style="list-style-type: none"> <li>• Designing smoothie carton packaging by-hand or on ICT software.</li> </ul> <p>Make</p> <ul style="list-style-type: none"> <li>• Chopping fruit and vegetables safely to make a smoothie.</li> <li>• Identifying if a food is a fruit or a vegetable.</li> <li>• Learning where and how fruits and vegetables grow.</li> </ul> <p>Evaluate</p> <ul style="list-style-type: none"> <li>• Suggesting information to be included on packaging.</li> </ul> |                   |
| Vocabulary | blend<br><br>blender                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | leaf<br><br>plant |



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|                        |                                                                                                                                                                                            |                                                                                                                                                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <p>chopping board</p> <p>compare</p> <p>cut</p> <p>design</p> <p>evaluate</p> <p>flavour</p> <p>fork</p> <p>fruit</p> <p>healthy</p> <p>ingredients</p> <p>juice</p> <p>juicer</p>         | <p>recipe</p> <p>root</p> <p>seed</p> <p>select</p> <p>smoothie</p> <p>stem</p> <p>table knife</p> <p>taste</p> <p>tree</p> <p>vegetable</p> <p>vine</p> |
| Cross curricular links | <b>Science</b> : Thinking scientifically - classifying fruit and vegetables Animals, including humans - learning about the importance of fruit and vegetables in the diet and food hygiene |                                                                                                                                                          |
| Key people             |                                                                                                                                                                                            |                                                                                                                                                          |





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**Year 2**

**Autumn 2**

**Making a moving Character**

**Lesson 1 : pivots, levers & linkages**

**WALT:** To look at objects and understand how they move.

**Success criteria:**

I can understand that mechanisms are a collection of moving parts that work together in a machine.

I can understand that a mechanism always has an input and output.

I can identify mechanisms in everyday objects.

I can understand that a lever is something that turns on a pivot.



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I can understand that a linkage is a system of levers connected by pivots.  
I can help devise whole-class design criteria for what our moving monster should do.

### **Lesson 2 : making linkages**

WALT: To look at objects and understand how they move.

Success criteria :

I can understand that mechanisms are a collection of moving parts that work together in a machine.  
I can understand that there is always an input and output in a mechanism.  
I can understand that a lever is something that turns on a pivot.  
I can understand that a linkage is a system of levers that are connected by pivots.

### **Lesson 3: designing my character**

WALT: To explore different design options.

Success criteria:

I can understand that linkages use levers and pivots to create motion.  
I can think of two of my own points to add to the class design criteria.  
I can draw two moving monster designs that meet all points of my design criteria.  
I can design the linkage I will use to make my monster move.



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#### Lesson 4 : making my character

WALT: To make a moving monster.

Success criteria:

I can make linkages by connecting levers and pivots.

I can understand that materials can be selected according to their characteristics.

I can design and make the features of my monster.

I can evaluate how functional my monster is and whether it meets the Design Criteria.

#### Knowledge

#### Technical

- To know that mechanisms are a collection of moving parts that work together as a machine to produce movement.
- To know that there is always an input and output in a mechanism.
- To know that an input is the energy that is used to start something working.
- To know that an output is the movement that happens as a result of the input.
- To know that a lever is something that turns on a pivot.
- To know that a linkage mechanism is made up of a series of levers.

#### Additional

- To know some real-life objects that contain mechanisms



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|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| skills                 | <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Creating a class design criteria for a moving monster.</li> <li>• Designing a moving monster for a specific audience in accordance with a design criteria.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Making linkages using card for levers and split pins for pivots.</li> <li>• Experimenting with linkages adjusting the widths, lengths and thicknesses of card used.</li> <li>• Cutting and assembling components neatly.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Evaluating own designs against design criteria.</li> <li>• Using peer feedback to modify a final design.</li> </ul> |
| Vocabulary             | <p>axle<br/>design criteria<br/>input<br/>linkage<br/>mechanical<br/>output<br/>pivot<br/>wheel</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Cross curricular links | <p><b>Maths</b><br/>Recording a tally survey</p> <p><b>Art &amp; design</b><br/>Sketching design ideas</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Key people             | <b>*Rube Goldberg</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



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- An American cartoonist, Goldberg was best known for his popular cartoons depicting complicated gadgets performing simple tasks in indirect, convoluted ways.
- These "Rube Goldberg machines" embody the principle of creating movement and reactions through a series of linked, mechanical actions.
- His designs were whimsical and humorous, but provide a rich source of inspiration for understanding how levers, linkages, and pivots can interact.

#### **\*Theo Jansen**

- Dutch artist who creates large, complex, kinetic sculptures called Strandbeests that use wind power to move.
- Jansen's Strandbeests use an elegant system of linkages to create complex, lifelike movements.
- This could be a great example to show how linkage systems can be used to create complicated and coordinated motions.

#### **Year 2**

#### **Autumn 2**

#### **Pouches**

#### **Lesson 1 : running stitch**

**WALT:** To sew a running stitch.

#### **Success criteria:**

I can thread a needle.

I can sew a running stitch.

I can use neat and evenly spaced stitches to join fabric.



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### **Lesson 2: using a template**

WALT: To sew a running stitch.

Success criteria:

- I can remember how to use a template.
- I can cut fabric neatly.
- I can pin fabric accurately.
- I can design a pouch.

### **Lesson 3 : Making a pouch**

WALT : To join fabrics using a running stitch.

Success criteria :

- I can sew neat, even stitches.
- I tie a knot at either end of the thread.
- I can design decorations for my product.

### **Lesson 4: decorating a pouch**



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WALT: To decorate a pouch using fabric glue or stitching.

Success criteria:

I can join items using fabric glue or stitching.

I can decorate fabric using different items.

I can evaluate my own designs.

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge | <b>Technical</b> <ul style="list-style-type: none"><li>• To know that sewing is a method of joining fabric.</li><li>• To know that different stitches can be used when sewing.</li><li>• To understand the importance of tying a knot after sewing the final stitch.</li><li>• To know that a thimble can be used to protect my fingers when sewing.</li></ul>                                                                                                                                                                                                        |
| skills    | <b>Design</b> <ul style="list-style-type: none"><li>• Designing a pouch.</li></ul><br><b>Make</b> <ul style="list-style-type: none"><li>• Selecting and cutting fabrics for sewing.</li><li>• Decorating a pouch using fabric glue or running stitch.</li><li>• Threading a needle.</li><li>• Sewing running stitch, with evenly spaced, neat, even stitches to join fabric.</li><li>• Neatly pinning and cutting fabric using a template.</li></ul><br><b>Evaluate</b> <ul style="list-style-type: none"><li>• Troubleshooting scenarios posed by teacher.</li></ul> |



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|                        |                                                                                                                                                                                                                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"><li>• Evaluating the quality of the stitching on others' work.</li><li>• Discussing as a class, the success of their stitching against the success criteria.</li><li>• Identifying aspects of their peers' work that they particularly like and why.</li></ul> |
| Vocabulary             | <p>Decorate</p> <p>Fabric</p> <p>Fabric glue</p> <p>Knot</p> <p>Needle</p> <p>Needle threader</p> <p>Running stitch</p> <p>Sew</p> <p>Template thread</p>                                                                                                                                        |
| Cross curricular links | <b>Art &amp; design</b><br>Decorating the pouch using a range of materials                                                                                                                                                                                                                       |
| Key people             |                                                                                                                                                                                                                                                                                                  |

**Year 2**





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### Spring 2

#### Baby bears chair

#### Lesson 1: exploring stability

**WALT:** To explore the concept and features of structures and the stability of different shapes.

#### Success criteria :

I can identify natural and man-made structures.

I can understand what is meant by stability and identify when a structure is more or less stable than another.

I can explain that shapes and structures with wide, flat bases or legs are the most stable.

#### Lesson 2: strengthening materials

WALT: To understand that the shape of the structure affects its strength.

#### Success criteria:

I can understand the meaning of the words strength, stiffness and stability.

I can understand there are different ways to fold paper to improve its strength and stiffness.

I can build a strong and stiff structure by folding paper.

I can test the strength of my structure.



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### **Lesson 3: making baby bears chair**

WALT: To make a structure according to design criteria.

Success criteria :

I can remember that chairs are structures that need to be strong, stiff and stable.

I can create joints and structures from paper, card and tape.

### **Lesson 4 : fixing and testing baby bears chair**

WALT: To produce a finished structure and evaluate its strength, stiffness and stability.

Success criteria:

I can identify that the chair I design needs to be strong, stiff, stable and support Teddy.

I can create joints and structures.

I can evaluate my structure according to the design criteria.



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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge              | <b>Technical</b> <ul style="list-style-type: none"> <li>• To know that materials can be manipulated to improve strength and stiffness.</li> <li>• To know that a structure is something which has been formed or made from parts.</li> <li>• To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</li> <li>• To know that a 'strong' structure is one which does not break easily.</li> <li>• To know that a 'stiff' structure or material is one which does not bend easily.</li> </ul>                                             |
| skills                 | <b>Design</b> <ul style="list-style-type: none"> <li>• Generating and communicating ideas using sketching and modelling.</li> </ul><br><b>Make</b> <ul style="list-style-type: none"> <li>• Making a structure according to design criteria.</li> <li>• Creating joints and structures from paper/card and tape</li> </ul><br><b>Evaluate</b> <ul style="list-style-type: none"> <li>• Testing the strength of own structure.</li> <li>• Identifying the weakest part of a structure.</li> <li>• Evaluating the strength, stiffness and stability of own structure.</li> </ul> |
| Vocabulary             | design criteria<br>man-made<br>natural<br>properties<br>structure<br>stable<br>shape<br>model<br>test                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Cross curricular links | <b>English</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



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|            |                                                                                                                                                                                                                                                                                                                      |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <p>Reading - discussing the events from 'Goldilocks and the three bears'</p> <p><b>Maths</b><br/>Creating 3D shapes from playdough, Recording totals on a tally chart</p> <p><b>Science</b><br/>Interpreting the results of the tip-test</p> <p><b>Geography</b><br/>identifying natural and man-made structures</p> |
| Key people |                                                                                                                                                                                                                                                                                                                      |

|                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Year 2</b>                                                                                                                                                                                                                                                                                         |
| <b>Summer 2</b>                                                                                                                                                                                                                                                                                       |
| <b>Balanced diet</b>                                                                                                                                                                                                                                                                                  |
| <p><b>Lesson 1 : food groups</b></p> <p>WALT : To recognise foods and their food groups.</p> <p>Success criteria :</p> <p>I can name the five food groups.</p> <p>I can match foods with the food group they belong to.</p> <p>I can explain how much of each food group I should have every day.</p> |



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### **Lesson 2 : balanced meals**

WALT: To identify the balance of food groups in a meal.

Success criteria:

I can identify foods I like.

I can explain the food groups in a meal.

I can plan a balanced menu.

### **Lesson 3 : preparing ingredients**

WALT: To identify an appropriate piece of equipment to prepare a given food.

Success criteria :

I can identify equipment used for preparing food.

I can practise food preparation skills using a range of equipment.

I can justify using a piece of equipment with a type of food.

### **Lesson 4 : taste testing ingredients**

WALT: To select balanced combinations of ingredients.

Success criteria:

I can select foods from specific food groups.



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I can describe the taste of different foods.

I can explain why I have chosen to put foods together.

### **Lesson 5 : planning recipes**

WALT: To design based on criteria.

Success criteria :

I can follow design criteria.

I can design three different wraps.

I can justify the choice I have made.

### **Lesson 6 : creating and evaluating wraps**

WALT: To evaluate a dish based on design criteria.

Success criteria:

I can select the ingredients for my recipe.

I can identify the equipment needed to prepare different foods.

I can decide if I like different wraps and choose my favourite.



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|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Knowledge  | <b>Technical</b> <ul style="list-style-type: none"><li>• To know that 'diet' means the food and drink that a person or animal usually eats.</li><li>• To understand what makes a balanced diet.</li><li>• To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.</li><li>• To understand that I should eat a range of different foods from each food group, and roughly how much of each food group.</li><li>• To know that 'ingredients' means the items in a mixture or recipe.</li></ul>       |
| skills     | <b>Design</b> <ul style="list-style-type: none"><li>• Designing a healthy wrap based on a food combination which works well together.</li></ul> <b>Make</b> <ul style="list-style-type: none"><li>• Slicing food safely using the bridge or claw grip.</li><li>• Constructing a wrap that meets a design brief.</li></ul> <b>Evaluate</b> <ul style="list-style-type: none"><li>• Taste testing food combinations and final products.</li><li>• Describing the information that should be included on a label.</li><li>• Evaluating which grip was most effective.</li></ul> |
| Vocabulary | <ul style="list-style-type: none"><li>• appearance</li><li>• balanced</li><li>• carbohydrates</li><li>• chopping board</li><li>• combination</li><li>• cut</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                         |



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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"><li>• dairy</li><li>• design</li><li>• design brief</li><li>• diet</li><li>• evaluate</li><li>• feel</li><li>• fruit</li><li>• grate</li><li>• grater</li><li>• ingredients</li><li>• menu</li><li>• oils</li><li>• proteins</li><li>• review</li><li>• scissors</li><li>• smell</li><li>• snip</li><li>• spread</li><li>• spreads</li><li>• table knife</li><li>• taste</li><li>• vegetables</li></ul> |
| Cross curricular links | <p><b>English</b><br/>Reading - reading a letter and summarising the key points</p> <p><b>Science</b></p>                                                                                                                                                                                                                                                                                                                                 |





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|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | Discussing the senses that humans have, having an awareness of food hygiene                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Key people | <b>Jamie Oliver</b> <ul style="list-style-type: none"><li>• Helped raise awareness about the quality of school dinners in 2005. More recently, he has voiced concerns about the effect of the pandemic on food choices.</li><li>• He supports teachers, charities and young people who are looking to change mindsets so every child gets healthy, nutritious food, providing the opportunity for dietary health.</li><li>• He is also a celebrity chef who designs healthy and affordable meals for people to cook themselves.</li></ul> |

**Year 3**

**Autumn 2**

**Eating seasonally**

**Lesson 1: food around the world**

**WALT:** To explain why food comes from different places around the world.

**Success criteria :**



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I can identify some fruits and vegetables that cannot be grown in the UK.

I can label countries where different fruits and vegetables grow.

### **Lesson 2 : seasonal food**

WALT: To explain the benefits of seasonal foods.

Success criteria:

I know that importing food has an impact on the environment.

I can match fruits and vegetables with the season in which they grow in the UK.

I can find recipes containing seasonal foods.

### **Lesson 3 : cutting and peeling**

WALT: To develop cutting and peeling skills.

Success criteria :

I can identify equipment used for preparing food.

I can explain why food would or would not need to be prepared.

I can describe the safety rules for preparation techniques.



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### **Lesson 4: tasting seasonal ingredients**

WALT: To evaluate seasonal ingredients.

Success criteria :

I can identify current seasonal foods.

I can taste various fruits and vegetables and describe their flavours.

I can contribute to a class taste wheel.

### **Lesson 5 : making a mock up**

WALT: To design a mock-up using criteria.

Success criteria :

I can design a puff pastry tart using seasonal vegetables and fruits.

I can use colours to identify nutritional benefits.

I can describe my puff pastry tart and the benefits of its ingredients.

### **Lesson 6 : evaluating seasonal chart**

WALT: To evaluate a dish.



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Success criteria :

I can taste tarts and provide feedback.

I can consider taste, texture, appearance and use of seasonal ingredients.

I can receive feedback on my tart and identify strengths.

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge | <b>Technical</b> <ul style="list-style-type: none"><li>• To know that vegetables and fruit grow in certain seasons.</li><li>• To know that cooking instructions are known as a 'recipe'.</li></ul> To know that imported food is food which has been brought into the country. <ul style="list-style-type: none"><li>• To know that exported food is food which has been sent to another country.</li><li>• To know that eating seasonal foods can have a positive impact on the environment.</li><li>• To know that similar coloured fruits and vegetables often have similar nutritional benefits.</li><li>• To know that the appearance of food is as important as taste.</li></ul> |
| skills    | <b>Design</b> <ul style="list-style-type: none"><li>• Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



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|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination.</li> <li>• Following the instructions within a recipe.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Establishing and using design criteria to help test and review dishes.</li> <li>• Describing the benefits of seasonal fruits and vegetables and the impact on the environment.</li> <li>• Suggesting points for improvement when making a seasonal tart.</li> </ul> |
| Vocabulary | <ul style="list-style-type: none"> <li>• appearance</li> <li>• arid</li> <li>• climate</li> <li>• complementary</li> <li>• country</li> <li>• cut</li> <li>• design</li> <li>• evaluate</li> <li>• export</li> <li>• fruit</li> <li>• grate</li> <li>• import</li> <li>• ingredients</li> <li>• Mediterranean</li> <li>• mock-up</li> <li>• mountain</li> <li>• peel</li> <li>• polar</li> <li>• seasonal</li> <li>• seasons</li> <li>• snip</li> <li>• taste</li> </ul>                                                                                                                      |



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|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"><li>• temperate</li><li>• texture</li><li>• tropical</li><li>• vegetable</li><li>• weather</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cross curricular links | <p><b>English</b><br/>Reading - following the instructions in a recipe</p> <p><b>Geography</b><br/>Knowing what climate is and that it affects food growth, reading information from a map of the world, knowing the environmental impact of importing food</p> <p><b>PSHE/RSE</b><br/>Considering food hygiene, knowing that fruit and vegetables give us nutritional benefits</p>                                                                                                                                                              |
| Key people             | <p><b>Jamie Oliver</b></p> <ul style="list-style-type: none"><li>• Helped raise awareness about the quality of school dinners in 2005. More recently, he has voiced concerns about the effect of the pandemic on food choices.</li><li>• He supports teachers, charities and young people who are looking to change mindsets so every child gets healthy, nutritious food, providing the opportunity for dietary health.</li><li>• He is also a celebrity chef who designs healthy and affordable meals for people to cook themselves.</li></ul> |



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### Spring 2

#### Pneumatic toys \*option 2\*

##### Lesson 1 : exploring pneumatics

**WALT:** To understand how pneumatic systems work.

##### Success criteria :

- I can recall that mechanisms are a system of parts that work together to create motion.
- I can recall that a pneumatic system can be used as part of a mechanism.
- I can recall that pneumatic systems are used in a range of everyday objects.
- I can recall that a pneumatic system can force air over a distance to create movement.

##### Lesson 2 : designing a pneumatic toy

**WALT:** To design a toy that uses a pneumatic system.

##### Success criteria:

- I can develop design criteria from a design brief.
- I can generate suitable ideas using thumbnail sketches and exploded diagrams.
- I can recall there are three different types of pneumatic systems that I can use to design my toy and use recycled household objects to make it.
- I can recall that different types of drawings are used in design to explain ideas clearly.



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### **Lesson 3 : making pneumatic toys**

WALT: To create a pneumatic system.

Success criteria :

I can create a pneumatic system to create a desired motion.

I can build secure housing for a pneumatic system.

I can recall that syringes and balloons can be used to create different types of pneumatic systems.

I can recall how to use these components to make a functional and appealing pneumatic toy.

### **Lesson 4: decorating and assembling my toy**

WALT: To test and finalise ideas against design criteria.

Success criteria:

I can remember that materials are selected due to their functional and aesthetic characteristics.

I can recall how to manipulate materials to create different effects by cutting, creasing, folding, weaving, etc.





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|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge  | <p><b>Technical</b></p> <ul style="list-style-type: none"><li>• To understand how pneumatic systems work.</li><li>• To understand that pneumatic systems can be used as part of a mechanism.</li><li>• To know that pneumatic systems operate by drawing in, releasing and compressing air.</li></ul> <p><b>Additional</b></p> <ul style="list-style-type: none"><li>• To understand how sketches, drawings and diagrams can be used to communicate design ideas.</li><li>• To know that exploded-diagrams are used to show how different parts of a product fit together.</li><li>• To know that thumbnail sketches are small drawings to get ideas down on paper quickly</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| skills     | <p><b>Design</b></p> <ul style="list-style-type: none"><li>• Designing a toy which uses a pneumatic system.</li><li>• Developing design criteria from a design brief.</li><li>• Generating ideas using thumbnail sketches and exploded diagrams.</li><li>• Learning that different types of drawings are used in design to explain ideas clearly.</li></ul> <p><b>Make</b></p> <ul style="list-style-type: none"><li>• Creating a pneumatic system to create a desired motion.</li><li>• Building secure housing for a pneumatic system.</li><li>• Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy.</li><li>• Selecting materials due to their functional and aesthetic characteristics.</li><li>• Manipulating materials to create different effects by cutting, creasing, folding and weaving.</li></ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"><li>• Using the views of others to improve designs.</li><li>• Testing and modifying the outcome, suggesting improvements.</li><li>• Understanding the purpose of exploded-diagrams through the eyes of a designer and their client.</li></ul> |
| Vocabulary | mechanism<br>lever<br>pivot<br>linkage system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



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|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <p>pneumatic system</p> <p>input</p> <p>output</p> <p>component</p> <p>thumbnail sketch</p> <p>research</p> <p>adapt</p> <p>properties</p> <p>reinforce</p> <p>motion</p>                                                                                                                                                                                                                                                                                                                                                               |
| Cross curricular links | <p><b>Art &amp; design</b><br/>Decorating their pneumatic toys with embellishments.</p> <p><b>Geography</b><br/>Discussing how electricity can be made using wind and sea power</p>                                                                                                                                                                                                                                                                                                                                                     |
| Key people             | <p><b>Hero of Alexandria (AD 62)</b></p> <ul style="list-style-type: none"> <li>• A Greek mathematician who wrote books on mechanics, including 'Pneumatica'.</li> <li>• He described using wind to generate power that would transport objects.</li> </ul> <p><b>Otto von Guericke (1650s)</b></p> <ul style="list-style-type: none"> <li>• A German physicist who invented a vacuum pump; a device that pulls air out of a container.</li> <li>• This helped him learn that air has weight and can create a pushing force.</li> </ul> |



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|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Year 3</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Summer 2</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Cross stitch &amp; applique</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Lesson 1:</b>                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>WALT: dependant on which topic is chosen by teacher</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Knowledge                                                  | <b>Technical</b> <ul style="list-style-type: none"> <li>•To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces.</li> <li>•To know that when two edges of fabric have been joined together it is called a seam.</li> <li>•To know that it is important to leave space on the fabric for the seam.</li> <li>•To understand that some products are turned inside out after sewing so the stitching is hidden.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                              |
| skills                                                     | <b>Design</b> <ul style="list-style-type: none"> <li>• Designing and making a template from an existing cushion and applying individual design criteria.</li> </ul><br><b>Make</b> <ul style="list-style-type: none"> <li>• Following design criteria to create a cushion or Egyptian collar.</li> <li>• Selecting and cutting fabrics with ease using fabric scissors.</li> <li>• Threading needles with greater independence.</li> <li>• Tying knots with greater independence.</li> <li>• Sewing cross stitch to join fabric. • Decorating fabric using appliqué.</li> <li>• Completing design ideas with stuffing and sewing the edges (Cushions) or embellishing the collars based on design ideas (Egyptian collars).</li> </ul><br><b>Evaluate</b> <ul style="list-style-type: none"> <li>• Evaluating an end product and thinking of other ways in which to create similar items.</li> </ul> |
| Vocabulary                                                 | accurate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



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|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <p>appliqué<br/>cross-stitch<br/>cushion<br/>design<br/>embellish<br/>fabric<br/>patch<br/>running stitch<br/>seam<br/>stuffing<br/>template<br/>thread</p>                                                                                                                                                                                                                                 |
| Cross curricular links | <p><b>Maths</b><br/>Choosing a 2D shape for their cushion, using knowledge of length to leave correct space for stuffing, seam and running stitch length</p> <p><b>Art &amp; design</b><br/>Designing a theme for their applique shapes (maybe around another topic)</p> <p><b>History</b><br/>Learning about Egyptian collars (If you choose the Egyptian collars theme for this unit)</p> |
| Key people             |                                                                                                                                                                                                                                                                                                                                                                                             |



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### Autumn 2

#### **Adapting a recipe**

##### **Lesson 1: existing biscuits**

**Walt :** To evaluate existing biscuit products.

##### **Success criteria :**

I can describe different types of biscuits and their packaging.

I can identify the taste and texture of existing biscuits.

I can explain how I know a biscuit is made for a certain target audience.

##### **Lesson 2: basic biscuits**

**Walt :** To prepare and cook a dish.

##### **Success criteria:**

I can follow simple food safety and hygiene rules.

I can follow a recipe and use a cooking technique.

I can discuss how a recipe can be changed.

##### **Lesson 3: budgeting**



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**Walt:** To select ingredients and follow a budget.

**Success criteria :**

- I can select ingredients for a target audience.
- I can calculate the cost of extra ingredients.
- I can create a design for the final product.

**Lesson 4 : packaging**

**Walt :** To take inspiration from existing products.

**Success criteria :**

- I can describe the packaging of different biscuits.
- I can create a design for a biscuit box.
- I can fold and construct a cuboid template.

**Lesson 5 : market research**

**WALT:** To make and test a prototype biscuit.

**Success criteria:**



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I can follow a recipe.  
I can modify the recipe using my design ideas and budget.  
I can collect feedback from a member of my target audience.

#### **Lesson 6: evaluating biscuits**

**WALT:** To evaluate a final product.

**Success criteria:** I can create criteria for evaluation.  
I can present my design for evaluation.  
I can evaluate the designs of others using criteria.

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge | <ul style="list-style-type: none"><li>• To know that the amount of an ingredient in a recipe is known as the 'quantity.'</li><li>• To know that safety and hygiene are important when cooking.</li><li>• To know the following cooking techniques: sieving, measuring, stirring, cutting out and shaping.</li><li>• To understand the importance of budgeting while planning ingredients for biscuits.</li><li>• To know that products often have a target audience.</li></ul>                       |
| skills    | <p><b>Design</b></p> <ul style="list-style-type: none"><li>• Designing a biscuit within a given budget, drawing upon previous taste testing judgements.</li></ul> <p><b>Make</b></p> <ul style="list-style-type: none"><li>• Following a baking recipe, from start to finish, including the preparation of ingredients.</li><li>• Cooking safely, following basic hygiene rules.</li><li>• Adapting a recipe to improve it or change it to meet new criteria (e.g. from savoury to sweet).</li></ul> |





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|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <b>Evaluate</b> <ul style="list-style-type: none"><li>• Describing the impact of the budget on the selection of ingredients.</li><li>• Evaluating and comparing a range of food products.</li></ul>                                                                                                                                                                                                                                                                                                                                                                       |
| Vocabulary | <ul style="list-style-type: none"><li>• adapt</li><li>• addition</li><li>• appearance</li><li>• budget</li><li>• buttery</li><li>• combine</li><li>• comment</li><li>• compare</li><li>• construct</li><li>• cream</li><li>• crunchy</li><li>• cuboid</li><li>• cut</li><li>• design</li><li>• evaluate</li><li>• fold</li><li>• hygiene</li><li>• ingredients</li><li>• layout</li><li>• market research</li><li>• modify</li><li>• multiplication</li><li>• opinion</li><li>• pounds</li><li>• sieve</li><li>• sift</li><li>• target audience</li><li>• taste</li></ul> |



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|                        |                                                                                                                                                                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"><li>• texture</li><li>• unique</li><li>• wooden spoon</li></ul>                                                                                                                                                           |
| Cross curricular links | <p><b>English</b><br/>Spoken language - giving a brief pitch for their biscuit recipe</p> <p><b>Maths</b><br/>Completing a budget, considering profit margins, using nets to create 3D packages</p> <p><b>PSHE/RSE</b><br/>Following basic food hygiene</p> |
| Key people             |                                                                                                                                                                                                                                                             |

**Year 4**

**Spring 2**



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### Making a slingshot car

#### Lesson 1 : PROTOTYPE 1 inclines plane

**WALT:** To build a simple prototype car chassis.

##### Success criteria :

I can describe key design improvements in the history of the automobile.

I can use an inclined plane to move the prototype car.

I can measure the distance the prototype car travels.

I can use tools and materials to make a moving prototype car.

#### Lesson 2 : prototype 2 slingshot car

**WALT:** To build a prototype of a sustainable slingshot car chassis.

##### Success criteria :

I can choose sustainable materials to make a car chassis.

I can draw an exploded diagram of the prototype.

I can make a car chassis.

#### Lesson 3: prototype 3 wind up car



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**WALT:** To build a prototype of a durable slingshot car chassis.

**Success criteria :**

- I can choose durable materials to make and attach the car chassis.
- I can compare the distance travelled to evaluate the three prototype cars.
- I can make a car chassis.

### **Lesson 4 : mechanical toy car kit design**

**WALT:** To design a mechanised toy car.

**Success criteria :**

- I can use a problem statement to identify the design criteria.
- I can conduct market research into existing products.
- I can sketch and annotate my toy car kit design.

### **Lesson 5: making and evaluating**

**Walt:** To make a mechanical toy car from a kit.

**Success criteria :**



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### Design and Technology Curriculum

I can assess a product against the design criteria.  
I can follow a design and instructions carefully to build a mechanical car.  
I can provide specific feedback to help improve a product design.  
I can adjust my design to incorporate customer feedback.

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge | <p><b>Technical</b></p> <ul style="list-style-type: none"><li>• To know that air resistance is the level of drag on an object as it is forced through the air.</li><li>• To understand that the shape of a moving object will affect how it moves due to air resistance.</li></ul> <p><b>Additional</b></p> <ul style="list-style-type: none"><li>• To know that aesthetics means how an object or product looks in design and technology.</li><li>• To know that a template is a stencil you can use to help you draw the same shape accurately.</li><li>• To know that a birds-eye view means a view from a high angle (as if a bird in flight).</li><li>• To know that graphics are images which are designed to explain or advertise something.</li><li>• To know that it is important to assess and evaluate design ideas and models against a list of design criteria.</li></ul> |
| skills    | <p><b>Design</b></p> <ul style="list-style-type: none"><li>• Designing a shape that reduces air resistance.</li><li>• Drawing a net to create a structure from.</li><li>• Choosing shapes that increase or decrease speed as a result of air resistance.</li><li>• Personalising a design.</li></ul> <p><b>Make</b></p> <ul style="list-style-type: none"><li>• Measuring, marking, cutting and assembling with increasing accuracy.</li><li>• Making a model based on a chosen design.</li></ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"><li>• Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance.</li></ul>                                                                                                                                                                              |



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### Design and Technology Curriculum

|                        |                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vocabulary             | <p>chassis<br/>energy<br/>kinetic<br/>mechanism<br/>air resistance<br/>design<br/>structure<br/>graphics<br/>research<br/>model<br/>template</p>                                                                                                                                                                                                                                                              |
| Cross curricular links | <p><b>Maths</b><br/>Using nets to create 3D shapes, measuring accurately</p> <p><b>Science</b><br/>Forces - understanding the concept of air resistance (Y5) when designing their car.</p> <p><b>Art &amp; design</b><br/>Decorating the panels of the chassis</p> <p><b>Geography</b><br/>considering eco-friendly ways of powering cars</p> <p><b>History</b><br/>Considering life before the motor car</p> |
| Key people             | <b>Henry Ford</b>                                                                                                                                                                                                                                                                                                                                                                                             |



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● American industrialist and founder of Ford Motor Company, renowned for revolutionizing mass production of automobiles with the introduction of assembly line techniques. His Model T, introduced in 1908, became a symbol of affordable and accessible transportation.

**Nicolas-Joseph Cugnot**

● French inventor, credited with building the first full-scale, self-propelled mechanical vehicle in 1769. His steam-powered "Fardier à vapeur" is considered one of the earliest automobiles.

### Year 4

#### Summer 2

#### Pavilions

##### Lesson 1 : exploring frame structures

**WALT:** To create a range of different shaped frame structures.

**Success criteria :**

I can make a variety of different frame structures.

I know what the structure (pavilion) is used for.

##### Lesson 2: designing a pavilion

**WALT:** To design a structure.

**Success criteria**



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I can understand that different materials can create different effects.  
I can understand how to make a stable structure.  
I can design a structure that is stable and aesthetically pleasing.

### **Lesson 3: pavilion frame**

**WALT:** To build a frame structure.

#### **Success criteria :**

I can build a free-standing structure.  
I can select appropriate materials to build a strong structure.  
I can use my knowledge of how to reinforce corners to strengthen my structure.  
I can refer to my design sheet to create my pavilion.

### **Lesson 4: pavilion cladding**

**WALT:** To add cladding to a frame structure.

#### **Success criteria :**

I can select appropriate materials for my cladding.  
I can add cladding which reflects my design.





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### Design and Technology Curriculum

I can create different textural effects with my chosen material.

#### Knowledge

##### **Technical**

- To understand what a frame structure is.
- To know that a 'free-standing' structure is one which can stand on its own.

##### **Additional**

- To know that a pavilion is a decorative building or structure for leisure activities.
- To know that cladding can be applied to structures for different effects.
- To know that aesthetics are how a product looks.
- To know that a product's function means its purpose.
- To understand that the target audience means the person or group of people a product is designed for.
- To know that architects consider light, shadow and patterns when designing.

#### skills

##### **Design**

- Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect.
- Building frame structures designed to support weight.

##### **Make**

- Creating a range of different shaped frame structures.
- Making a variety of free standing frame structures of different shapes and sizes.
- Selecting appropriate materials to build a strong structure and cladding.
- Reinforcing corners to strengthen a structure.
- Creating a design in accordance with a plan.
- Learning to create different textural effects with materials.

##### **Evaluate**

- Evaluating structures made by the class.
- Describing what characteristics of a design and construction made it the most effective.
- Considering effective and ineffective designs.



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## Design and Technology Curriculum

|                        |                                                                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vocabulary             | 3D shapes<br>cladding<br>design criteria<br>innovative<br>natural<br>reinforce<br>structure                                                                                        |
| Cross curricular links | <b>Maths</b><br>Building 3D shapes to test the strength of different structures<br><br><b>Art &amp; design</b><br>Creating textural effects with materials to clad their structure |
| Key people             |                                                                                                                                                                                    |



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## Design and Technology Curriculum



**Year 5**

**Autumn 2**

**Doodlers**

**Lesson 1 Electrical systems and motors**

**WALT:** To understand how motors are used in electrical products.

**Success criteria:**

I can identify simple circuit components (battery, bulb, motor and switch).

I can explain what a series circuit is.

I can give examples of motorised products and explain their primary function.



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## Design and Technology Curriculum



### Lesson 2 : meet the doodlers

**WALT:** To investigate an existing product to determine the factors that affect the product's form and function.

#### Success criteria :

- I can take apart a product and reassemble it.
- I can determine which parts of the product affect its function.
- I can determine which parts of the product affect its form.
- I can alter the way a product functions by tinkering with its configuration.

### Lesson 3 : doodler design and construction

**WALT:** To apply the findings from research to develop a unique product.

#### Success criteria:

- I can identify design criteria based on findings from an investigation.
- I can develop my design based on key points discovered in an investigation.
- I can incorporate a motor into an electrical system.

### Lesson 4 : doodler DIY kits

**WALT:** To develop a DIY kit for another individual to assemble their product.



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### Success criteria:

I can identify and list the materials, equipment and circuit components required to build my product.

I can explain the steps required to assemble my product.

I can explain how to build and integrate an electrical system as part of my product.

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge | <p><b>Technical</b></p> <ul style="list-style-type: none"><li>• To know that series circuits only have one direction for the electricity to flow.</li><li>• To know when there is a break in a series circuit, all components turn off.</li><li>• To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin.</li><li>• To know a motorised product is one which uses a motor to function.</li></ul> <p><b>Additional</b></p> <ul style="list-style-type: none"><li>• To know that product analysis is critiquing the strengths and weaknesses of a product.</li><li>• To know that 'configuration' means how the parts of a product are arranged.</li></ul> |
| skills    | <p><b>Design</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



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### Design and Technology Curriculum

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <ul style="list-style-type: none"> <li>Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product.</li> <li>Developing design criteria based on findings from investigating existing products.</li> <li>Developing design criteria that clarifies the target user.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>Altering a product's form and function by tinkering with its configuration.</li> <li>Making a functional series circuit, incorporating a motor.</li> <li>Constructing a product with consideration for the design criteria.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses.</li> <li>Determining which parts of a product affect its function and which parts affect its form.</li> <li>Analysing whether changes in configuration positively or negatively affect an existing product.</li> </ul> |
| Vocabulary | <p>circuit component<br/> configuration<br/> current<br/> develop<br/> DIY<br/> investigate<br/> motor<br/> motorised<br/> problem solve<br/> product analysis<br/> series circuit<br/> stable<br/> target user</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



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|                        |                                                                                                                                                                                                                        |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cross curricular links | <b>English</b><br>Writing - writing instructions on how to make a Doodler<br><br><b>Science</b><br>Electricity -Exploring electrical circuit, identifying and naming components, investigating and drawing conclusions |
| Key people             |                                                                                                                                                                                                                        |

**Year 5**

**Spring 2**

**Developing a recipe**

**Lesson 1: from farm to fork**

**WALT:** To understand how ingredients are reared and processed.

**Success criteria:**

I can identify the ingredients in spaghetti Bolognese.

I can create an informative poster.

I can explain the journey of beef from farm to table.



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### **Lesson 2 : different choices**

**WALT:** To make adaptations to design a recipe.

#### **Success criteria:**

- I can compare two bolognese sauces.
- I can research unique ingredients in different bolognese recipes.
- I can plan an adaptation of a basic bolognese recipe.

### **Lesson 3: nutritional value**

**WALT:** To evaluate nutritional content.

#### **Success criteria:**

- I can use a nutrition calculator.
- I can compare nutritional values.
- I can make ingredient choices based on nutritional values.
- I can modify a recipe to contain different ingredient choices.





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#### **Lesson 4: preparing ingredients**

**WALT:** To practise food preparation skills.

##### **Success criteria:**

- I can cut resistant foods like onions safely and accurately.
- I understand the safety aspects of working with hot food.
- I can explain how to avoid cross-contamination.

#### **Lesson 5: designing labels**

**WALT:** To design a product label.

##### **Success criteria:**

- I can measure and cut to fit specific dimensions.
- I can design a label thinking about colours, ingredients and the contents of the jar.
- I can evaluate a design against criteria.

#### **Lesson 6: making Bolognese**

**WALT:** To follow and make an adapted recipe.



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#### Success criteria:

I can use a recipe to gather the correct quantities of ingredients.  
I can select the right equipment for each preparation technique.  
I can make a video to explain a recipe.

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge | <ul style="list-style-type: none"><li>• To know that recipes can be adapted to suit nutritional needs and dietary requirements.</li><li>• To know that I can use a nutritional calculator to see how healthy a food option is.</li><li>• To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.</li><li>• To know that coloured chopping boards can prevent cross-contamination.</li><li>• To know that nutritional information is found on food packaging.</li></ul> |
| skills    | <b>Design</b> <ul style="list-style-type: none"><li>• Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients.</li><li>• Writing an amended method for a recipe to incorporate the relevant changes to ingredients.</li></ul>                                                                                                                                                                                                                                                                        |



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|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Cutting and preparing vegetables safely.</li> <li>• Using equipment safely, including knives, hot pans and hobs.</li> <li>• Knowing how to avoid cross-contamination.</li> <li>• Following a step by step method carefully to make a recipe.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Identifying the nutritional differences between different products and recipes.</li> <li>• Identifying and describing healthy benefits of food groups.</li> </ul> |
| Vocabulary | <ul style="list-style-type: none"> <li>• abattoir</li> <li>• adaptation</li> <li>• balanced</li> <li>• beef</li> <li>• brand</li> <li>• cook</li> <li>• cross-contamination</li> <li>• cut</li> <li>• design</li> <li>• enhance</li> <li>• equipment</li> <li>• evaluate</li> <li>• farm</li> <li>• grate</li> <li>• hygiene</li> <li>• ingredients</li> <li>• label</li> <li>• measure</li> <li>• nutrient</li> <li>• nutrition</li> <li>• nutritional value</li> <li>• preference</li> </ul>                                                        |



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|                        |                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"><li>• press</li><li>• process</li><li>• recipe</li><li>• safety</li><li>• theme</li></ul> <div></div>              |
| Cross curricular links | <b>Art &amp; design</b><br>Designing a label for their bolognaise<br><br><b>Computing</b><br>Using search engines to research variations of a recipe |
| Key people             |                                                                                                                                                      |

**Year 5**

**Summer 2**

**Monitoring devices**

**Lesson 1: monitoring devices**

**WALT:** To carry out research to develop design criteria.



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### Success criteria:

- I can research (using books or the internet) for a particular animal's needs.
- I can develop design criteria based on my research.
- I can describe key developments in thermometer history.

### Lesson 2: programming an animal monitor

**WALT:** To write a program to monitor the ambient temperature, including an alert.

### Success criteria:

- I can program to monitor the ambient temperature and code an (audible or visual) alert when the temperature rises above or falls below a specified range.
- I can explain key functions in my program (audible alert, visuals).
- I can explain how my product would be useful for an animal carer.

### Lesson 3: plastic

**WALT:** To generate creative and unique Micro:bit case, stand or housing ideas.



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#### Success criteria:

- I can state an event or fact from the last 100 years of plastic history.
- I can explain how plastic affects planet Earth and suggest ways to make more sustainable choices.
- I can generate multiple housing ideas using building bricks.

#### Lesson 4: 3D CAD skills

**WALT:** To learn about and practise 3D CAD skills.

#### Success criteria:

- I can understand what a virtual model is and the pros and cons of traditional and CAD modelling.
- I can place and manoeuvre 3D objects using computer-aided design.
- I can change the properties of or combine one or more 3D objects using computer-aided design.

#### Knowledge

#### Technical

- To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record.
- To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose.
- To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met.

#### Additional

- To understand key developments in thermometer history.
- To know events or facts that took place over the last 100 years in the history of plastic, and how this is changing our outlook on the future.



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|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <ul style="list-style-type: none"> <li>• To know the 6Rs of sustainability.</li> <li>• To understand what a virtual model is and the pros and cons of traditional vs CAD modelling.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| skills     | <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Researching (books, internet) for a particular (user's) animal's needs.</li> <li>• Developing design criteria based on research.</li> <li>• Generating multiple housing ideas using building bricks.</li> <li>• Understanding what a virtual model is and the pros and cons of traditional and CAD modelling.</li> <li>• Placing and manoeuvring 3D objects, using CAD.</li> <li>• Changing the properties of, or combining one or more 3D objects, using CAD.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Understanding the functional and aesthetic properties of plastics.</li> <li>• Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature rises above or falls below a specified range.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Stating an event or fact from the last 100 years of plastic history.</li> <li>• Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices.</li> <li>• Explaining key functions in my program (audible alert, visuals).</li> <li>• Explaining how my product would be useful for an animal carer including programmed features.</li> </ul> |
| Vocabulary | <ul style="list-style-type: none"> <li>• alert</li> <li>• ambient</li> <li>• boolean</li> <li>• CAD</li> <li>• design brief</li> <li>• design criteria</li> <li>• device</li> <li>• electronic</li> <li>• group</li> <li>• loop</li> <li>• model</li> <li>• monitor</li> <li>• monitoring device</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"> <li>• plastic</li> <li>• plastic pollution</li> <li>• programming comment</li> <li>• sensor</li> <li>• sustainability</li> <li>• synthetic</li> <li>• thermometer</li> <li>• Tinkercad</li> <li>• ungroup</li> <li>• value</li> <li>• variable</li> <li>• versatile</li> <li>• workplane</li> </ul>                                                                                                                                                                   |
| Cross curricular links | <p><b>Science</b><br/>Animals, including humans - finding out about the needs of animals</p> <p><b>Computing</b><br/>Using search engines to research animals, programming and debugging an animal monitor, using CAD skills to create virtual models</p> <p><b>Geography</b><br/>Considering how we can use the six Rs of sustainability to develop more sustainable habits</p> <p><b>History</b><br/>Learning about how thermometers have developed, learning about the history behind plastic use</p> |





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|            |                                                                                           |
|------------|-------------------------------------------------------------------------------------------|
|            | <b>PSHE/RSE</b><br>Considering our shared responsibilities for protecting the environment |
| Key people |                                                                                           |



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## Design and Technology Curriculum



### Autumn 2

#### Steady hand game

##### Lesson 1: developing through play

**WALT:** To research and analyse a range of children's toys.

##### Success criteria:

I can research images and information about existing children's toys.

I can analyse a selection of existing children's toys.

I can apply my knowledge of form and function.

##### Lesson 2: game plan

**WALT:** To design a steady hand game.

##### Success criteria:

I can identify and name the components in a steady hand game.

I can decide on clear design criteria for my game.

I can design a game and draw it from three different perspectives.

I can create a design that reflects the design criteria.



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### Lesson 3: base building

**WALT:** To construct a stable base.

#### Success criteria:

- I can accurately cut and assemble a net.
- I can decorate the base and ensure a high-quality finish.
- I can ensure that the sides of the base are aligned when glued.
- I can use tabs to secure the pieces of the net in place.

### Lesson 4: electronics and assembly

**WALT:** To assemble electronics and complete their electronic game.

#### Success criteria:

- I can make and test a circuit.
- I can incorporate a circuit into a base.
- I can name electrical components.



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### Design and Technology Curriculum

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                         |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge  | <p><b>Technical</b></p> <ul style="list-style-type: none"> <li>• To know that batteries contain acid, which can be dangerous if they leak.</li> <li>• To know the names of the components in a basic series circuit, including a buzzer.</li> </ul> <p><b>Additional</b></p> <ul style="list-style-type: none"> <li>• To understand the diagram perspectives 'top view', 'side view' and 'back'.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                         |
| skills     | <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Designing a steady hand game - identifying and naming the components required.</li> <li>• Drawing a design from three different perspectives.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Constructing a stable base for a game.</li> <li>• Accurately cutting, folding and assembling a net.</li> <li>• Decorating the base of the game to a high quality finish.</li> <li>• Making and testing a circuit.</li> <li>• Incorporating a circuit into a base.</li> <li>• Generating ideas through sketching and discussion.</li> <li>• Modelling ideas through prototypes.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Testing own and others finished games, identifying what went well and making suggestions for improvement.</li> </ul> |                                                                                                                                                                                                                                                                         |
| Vocabulary | <ul style="list-style-type: none"> <li>• assemble</li> <li>• battery</li> <li>• battery pack</li> <li>• benefit</li> <li>• bulb</li> <li>• bulb holder</li> <li>• buzzer</li> <li>• circuit</li> <li>• circuit symbol</li> <li>• component</li> <li>• conductor</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• design criteria</li> <li>• evaluation</li> <li>• fine motor skills</li> <li>• fit for purpose</li> <li>• form</li> <li>• function</li> <li>• gross motor skills</li> <li>• insulator</li> <li>• LED</li> <li>• user</li> </ul> |



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|                        |                                                                                                                                                                                                                                                                                 |  |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                        | <ul style="list-style-type: none"> <li>• copper</li> <li>• design</li> </ul>                                                                                                                                                                                                    |  |
| Cross curricular links | <p>Maths<br/>Using net templates to create the base of their game</p> <p>Science<br/>Drawing circuit diagrams, naming components and their functions</p> <p>Art &amp; design<br/>Exploring one line drawings</p> <p>Computing<br/>Recapping rules for safe online searching</p> |  |
| Key people             |                                                                                                                                                                                                                                                                                 |  |

|                                                            |
|------------------------------------------------------------|
| <b>Year 6</b>                                              |
| <b>Spring 2</b>                                            |
| <b>Come dine with me</b>                                   |
| <b>Lesson 1: complementary flavours (optional)</b>         |
| <b>WALT:</b> To explain the use of complementary flavours. |



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#### **Success criteria:**

- I can identify the five basic tastes.
- I can match complementary flavours.
- I can explain why certain flavours work well together.

#### **Lesson 2: 3 ingredients; 3 courses**

**WALT:** To research and design a three-course meal.

#### **Success criteria:**

- I know how to research a recipe by ingredient.
- I understand that not all courses complement one another.
- I can list the ingredients I need for my chosen recipe.
- I can read the method and list the equipment I need for my chosen recipe.

#### **Lesson 3: ingredients and skills (optional)**

**WALT:** To explain recipe choices.



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### Success criteria:

- I can identify and use preparation techniques needed for a recipe.
- I can explain the combinations of ingredients in a recipe.
- I can seek guidance when something is unfamiliar.

### Lesson 4: To start

**WALT:** To apply culinary skills and knowledge.

### Success criteria:

- I can prepare ingredients and follow a recipe safely and sensibly.
- I can describe the farm to fork process for a given ingredient using a storyboard.
- I can contribute a recipe page to a class cookbook using imperative verbs, adjectives and illustrations.

### Lesson 5: The main course

**WALT:** To apply culinary skills and knowledge.

### Success criteria:



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I can prepare ingredients and follow a recipe safely and sensibly.

I can describe the process of farm to fork for a given ingredient using a storyboard.

I can contribute an attractive and easily understood recipe page to a class cookbook using imperative verbs, adjectives and illustrations.

#### **Lesson 6: Dessert**

**WALT:** To apply culinary skills and knowledge.

#### **Success criteria:**

I can prepare ingredients and follow a recipe safely and sensibly.

I can describe the process of farm to fork for a given ingredient using a storyboard.

I can contribute an attractive and easily understood recipe page to a class cookbook using imperative verbs, adjectives and illustrations.

Knowledge

- To know that 'flavour' is how a food or drink tastes.
- To know that many countries have 'national dishes' which are recipes associated with that country.
- To know that 'processed food' means food that has been put through multiple changes in a factory.
- To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides.
- To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).

skills

**Design**





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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                   |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"> <li>• Writing a recipe, explaining the key steps, method and ingredients.</li> <li>• Including facts and drawings from research undertaken.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Following a recipe, including using the correct quantities of each ingredient.</li> <li>• Adapting a recipe based on research.</li> <li>• Working to a given timescale.</li> <li>• Working safely and hygienically with independence.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Evaluating a recipe, considering: taste, smell, texture and origin of the food group.</li> <li>• Taste testing and scoring final products.</li> <li>• Suggesting and writing up points of improvements when scoring others' dishes, and when evaluating their own throughout the planning, preparation and cooking process.</li> <li>• Evaluating health and safety in production to minimise cross contamination.</li> </ul> |                                                                                                                                                                                                                   |
| Vocabulary             | <ul style="list-style-type: none"> <li>• balance</li> <li>• bitter</li> <li>• bridge method</li> <li>• complement</li> <li>• cookbook</li> <li>• cross-contamination</li> <li>• enhance</li> <li>• equipment</li> <li>• farm to fork</li> <li>• flavours</li> <li>• ingredients</li> <li>• method</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• pairing</li> <li>• preparation</li> <li>• recipe</li> <li>• research</li> <li>• salty</li> <li>• sour</li> <li>• storyboard</li> <li>• sweet</li> <li>• umami</li> </ul> |
| Cross curricular links | <b>Science</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                   |



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|            |                                                                                                                                                                                                 |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | Recognising the impact of diet on our bodies.<br><br><b>PSHE/RSE</b><br>Considering different dishes from other cultures, developing awareness of healthy eating, following basic food hygiene. |
| Key people | <b>Ainsley Harriot</b>                                                                                                                                                                          |

#### Year 6

#### Summer 2

#### Navigating the world

#### Lesson 1: navigating the world

**WALT:** To write a design brief and criteria based on a client request.

#### Success criteria:

I can write a design brief from information submitted by a client.

I can develop design criteria to fulfil the client's request.

I can consider and suggest additional functions for my navigation tool.

#### Lesson 2: programming a navigation tool



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**WALT:** To write a program to include multiple functions as part of a navigation device.

**Success criteria:**

- I can program an n, e, s and w cardinal compass.
- I can explain the key functions in my program, including any additions.
- I can explain how my program fits the design criteria and how it would be useful as part of a navigation tool.

### Lesson 3: product concept

**WALT:** To develop a sustainable product concept.

**Success criteria:**

- I can consider materials and their functional properties.
- I can understand the need for sustainability in design.
- I can develop a product idea through annotated sketches.

### Lesson 4: 3D CAD models

**WALT:** To develop 3D CAD skills to produce a virtual model.



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#### Success criteria:

- I can identify key industries that utilise 3D CAD modelling and explain why.
- I can place and manoeuvre 3D objects using computer-aided design.
- I can change the properties of or combine one or more 3D objects using computer-aided design to produce a 3D CAD model.

#### Lesson 5: product pitch

**WALT:** To present a pitch to 'sell' the product to a specified client.

#### Success criteria:

- I can explain the key functions and features of my navigation tool.
- I can explain my material choices and why they were chosen.
- I can describe how my product fits the client's request and how it will benefit the customers.

Knowledge

#### Technical

- To know that accelerometers can detect movement.
- To understand that sensors can be useful in products as they mean the product can function without human input.



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|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <p><b>Additional</b></p> <ul style="list-style-type: none"> <li>• To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request.</li> <li>• To know that 'multifunctional' means an object or product has more than one function.</li> <li>• To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| skills     | <p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Writing a design brief from information submitted by a client.</li> <li>• Developing design criteria to fulfil the client's request.</li> <li>• Considering and suggesting additional functions for my navigation tool.</li> <li>• Developing a product idea through annotated sketches.</li> <li>• Placing and manoeuvring 3D objects, using CAD.</li> <li>• Changing the properties of, or combining one or more 3D objects, using CAD.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo).</li> <li>• Explaining material choices and why they were chosen as part of a product concept.</li> <li>• Programming an N,E, S, W cardinal compass.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool.</li> <li>• Developing an awareness of sustainable design.</li> <li>• Identifying key industries that utilise 3D CAD modelling and explaining why.</li> <li>• Describing how the product concept fits the client's request and how it will benefit the customers.</li> <li>• Explaining the key functions in my program, including any additions.</li> <li>• Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool.</li> <li>• Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch.</li> <li>• Demonstrating a functional program as part of a product concept pitch.</li> </ul> |
| Vocabulary | <ul style="list-style-type: none"> <li>• application (apps)</li> <li>• biodegradable</li> <li>• boolean</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



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- cardinal compass
- client
- corrode
- design brief
- design criteria
- duplicate
- environmentally friendly
- equipment
- function
- GPS tracker
- if statement
- lightweight
- loop
- mouldable
- navigation
- pedometer
- product lifecycle
- product lifespan
- program
- recyclable
- replica
- smart
- smartphone
- sustainable design
- value
- variable



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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cross curricular links | <p><b>English</b><br/>Reading - finding key points in a clients letter to create design criteria Spoken language - presenting a pitch about their product</p> <p><b>Science</b><br/>Considering materials and their functional properties</p> <p><b>Computing</b><br/>Programming a compass (all), pedometer and a light/thermometer (extension), using CAD skills to produce a virtual model</p> <p><b>Geography</b><br/>Considering sustainability in design</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Key people             | <p><b>*Yves Béhar</b></p> <ul style="list-style-type: none"> <li>• A famous industrial designer and entrepreneur known for his work on tech products.</li> <li>• One of his projects includes the design of "August", a smart lock system that could be applied in a broader sense to navigation tools.</li> <li>• Béhar is a Swiss designer based in the USA and he founded Fuseproject, a design and branding firm.</li> <li>• His approach to design, which is very human-centered and sustainable, would be a great inspiration.</li> </ul> <p><b>*Patricia Moore</b></p> <ul style="list-style-type: none"> <li>• An American industrial designer and gerontologist, Moore is known for her advocacy in universal design, which aims to create products that are accessible to people of all abilities and ages.</li> <li>• This could be an inspiring approach when designing a multi-tool that needs to be user-friendly and functional for various users.</li> </ul> |