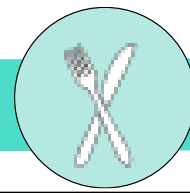
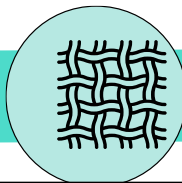
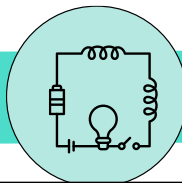
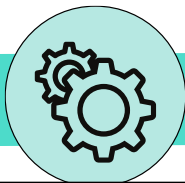


## Reception

Unit of work	Design	Make	Evaluate
Structures- Junk modelling	<ul style="list-style-type: none"> <li>• Making verbal plans and material choices.</li> <li>• Developing a junk model</li> </ul>	<ul style="list-style-type: none"> <li>• Improving fine motor/scissor skills with a variety of materials.</li> <li>• Joining materials in a variety of ways (temporary and permanent).</li> <li>• Joining different materials together.</li> <li>• Describing their junk model, and how they intend to put it together.</li> </ul>	<ul style="list-style-type: none"> <li>• Giving a verbal evaluation of their own and others' junk models with adult support.</li> <li>• Checking to see if their model matches their plan.</li> <li>• Considering what they would do differently if they were to do it again.</li> <li>• Describing their favourite and least favourite part of their model.</li> </ul>
Cooking and nutrition- Soup	<ul style="list-style-type: none"> <li>• Designing a soup recipe as a class.</li> <li>• Designing soup packaging.</li> </ul>	<ul style="list-style-type: none"> <li>• Chopping plasticine safely.</li> <li>• Chopping vegetables with support.</li> </ul>	<ul style="list-style-type: none"> <li>• Tasting the soup and giving opinions.</li> <li>• Describing some of the following when tasting food: look, feel, smell and taste.</li> <li>• Choosing their favourite packaging design and explaining why.</li> </ul>
Textiles- Bookmarks	<ul style="list-style-type: none"> <li>• Discussing what a good design needs.</li> <li>• Designing a simple pattern with paper.               <ul style="list-style-type: none"> <li>• Designing a bookmark.</li> <li>• Choosing from available materials.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Developing fine motor/cutting skills with scissors.</li> <li>• Exploring fine motor/threading and weaving (under, over technique) with a variety of materials.</li> <li>• Using a prepared needle and wool to practise threading.</li> </ul>	<ul style="list-style-type: none"> <li>• Reflecting on a finished product and comparing to their design</li> </ul>



## Year 1

## Unit of work

## Design

## Make

## Evaluate

Cooking and nutrition-  
Smoothies

- Designing smoothie carton packaging by hand.
- Learning where and how fruits and vegetables grow.

- Chopping fruit and vegetables safely to make a smoothie.
- Juicing fruits safely to make a smoothie.
- Identifying if a food is a fruit.

- Tasting and evaluating different food combinations.
- Describing appearance, smell and taste.
- Suggesting information to be included on packaging.
- Comparing their own smoothie with someone else's.

## Textiles: Puppets

- Using a template to create a design for a puppet

- Cutting fabric neatly with scissors.
- Using joining methods to decorate a puppet.
- Sequencing steps for construction

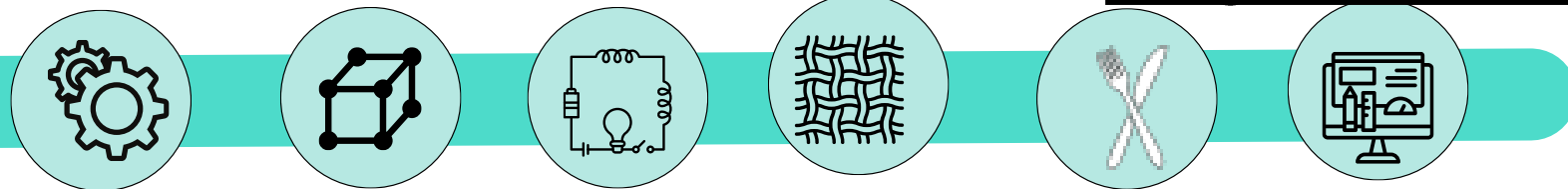
- Reflecting on a finished product, explaining likes and dislikes.

Structures-  
Constructing a  
windmill

- Learning the importance of a clear design criteria.
- Including individual preferences and requirements in a design.

- Making stable structures from card.
- Following instructions to cut and assemble the supporting structure of a windmill.
- Making functioning turbines and axles which are assembled into a main supporting structure.
- Finding the middle of an object.
- Puncturing holes.
- Adding weight to structures.
- Creating supporting structures.
- Cutting evenly and carefully

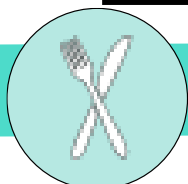
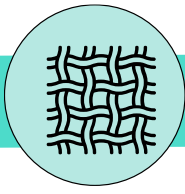
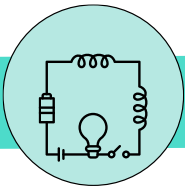
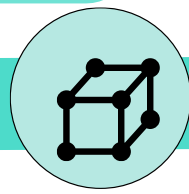
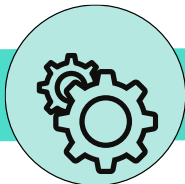
- Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't.
- Suggest points for improvements



## Year 2

Unit of work	Design	Make	Evaluate
Structures- Baby bear's chair	<ul style="list-style-type: none"> <li>Generating and communicating ideas using sketching and modelling.</li> <li>Learning about different types of structures, found in the natural world and in everyday objects.</li> </ul>	<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> <li>Building a strong and stiff structure by folding paper.</li> </ul>	<ul style="list-style-type: none"> <li>Exploring the features of structures.</li> <li>Comparing the stability of different shapes.</li> <li>Testing the strength of own structures.</li> <li>Identifying the weakest part of a structure.</li> <li>Evaluating the strength, stiffness and stability of own structure.</li> </ul>
Cooking and nutrition- healthy wrap	<ul style="list-style-type: none"> <li>Designing three wrap ideas.</li> </ul>	<ul style="list-style-type: none"> <li>Chopping foods safely to make a wrap.</li> <li>Constructing a wrap that meets a design brief. <ul style="list-style-type: none"> <li>Grating foods to make a wrap.</li> </ul> </li> <li>Snipping smaller foods instead of cutting.</li> <li>Spreading soft foods to make a wrap. <ul style="list-style-type: none"> <li>Identifying the five food groups.</li> <li>Learning about balanced diet.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Describing appearance, smell and taste.</li> <li>Taste and evaluating different food combinations.</li> <li>Describing the information that should be included on a label.</li> </ul>
Mechanisms- Fairground wheels	<ul style="list-style-type: none"> <li>Conducting simple surveys or discussions to gather opinions on what others need or like in a design. <ul style="list-style-type: none"> <li>Knowing that a survey is used to find out what people like.</li> </ul> </li> <li>Using a simple design brief that outlines the intended use, target user, and key features of the product, to create simple design criteria. <ul style="list-style-type: none"> <li>Knowing that a design brief helps to decide what to make.</li> </ul> </li> <li>Knowing that design criteria are the steps for making a product successful.</li> <li>Creating ideas with design criteria in mind.</li> <li>Referring to specific parts of existing products when generating ideas.</li> <li>Knowing that the design criteria help when thinking of ideas.</li> <li>Using labels to explain parts of a design, label materials, etc.</li> <li>Using labels to explain parts of a design, label materials, etc.</li> <li>Knowing that drawings can help explain how something works. <ul style="list-style-type: none"> <li>Knowing that a label explains part of a drawing.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Choosing materials, ingredients or components from a wider range of materials, ingredients or components.</li> <li>Explaining their choices based on the properties of materials and components.</li> <li>Knowing some properties of materials like hard, soft, flexible, waterproof, strong etc. <ul style="list-style-type: none"> <li>Following and recalling simple safety instructions.</li> </ul> </li> <li>Knowing that some tools are sharp like scissors and knives.</li> <li>Choosing known geometric shapes when making.</li> <li>Beginning to shape objects to improve how they work. <ul style="list-style-type: none"> <li>Knowing the names of some geometric shapes: triangle, pyramid, square, cube, circle, sphere.</li> </ul> </li> <li>Considering balance in their finishing, like evenly spaced decoration.</li> </ul>	<ul style="list-style-type: none"> <li>Discussing a range of existing products and saying what they like and dislike about them.</li> <li>Evaluating existing products against design criteria.</li> <li>Evaluating their ideas and creations against simple design criteria.</li> <li>Knowing that design criteria help to decide if their product is a success.</li> <li>Suggesting improvements to their peers' designs and products.</li> <li>Knowing that improve means to make something better.</li> <li>Knowing that their suggestions can improve someone else's work.</li> </ul>





## Year 3

## Unit of work

## Design

## Make

## Evaluate

Textiles-  
Egyptian collars

- Designing and making a template from an existing cushion and applying individual design criteria.

- Following design criteria to create a cushion or Egyptian collar.
- Selecting and cutting fabrics with ease using fabric scissors.
  - Threading needles with greater independence.
  - Tying knots with greater independence.
  - Sewing cross stitch to join fabric.
  - Decorating fabric using appliqué.
- Completing design ideas with stuffing and sewing the edges (Cushions) or embellishing the collars based on design ideas (Egyptian collars).

- Evaluating an end product and thinking of other ways in which to create similar items.

Mechanical  
systems-  
Pneumatic toys

- Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences.
  - Taking part in structured idea blasting sessions.
- Coming up with more ideas and considering the feasibility of their ideas in the classroom.
- Developing drawing and sketching skills with a focus on clarity and simplicity.
- Developing designs by adding detail and justifications about materials, tools, methods.
- Beginning to recognise the benefit of a range of diagram types or prototypes to communicate ideas. (eg. sketches, cross-sectional diagram, thumbnail sketches and exploded diagrams).

- Selecting equipment required for a series of tasks based on the plan. Explain why each piece is suitable for each stage.
- Suggesting simple safety rules based on their understanding of tool dangers.
  - Participating in discussions about classroom safety procedures.
  - Cutting out more complex shapes accurately.
  - Handle different sizes and types of scissors with confidence.
- Using PVA glue to join corrugated card and light wood (e.g. balsa wood).
  - Choosing shapes to suit the function of a product.
  - Painting or colouring precisely to improve the finish.
- Making facades from a range of materials. • Sealing edges with tape to cover gaps in joins.

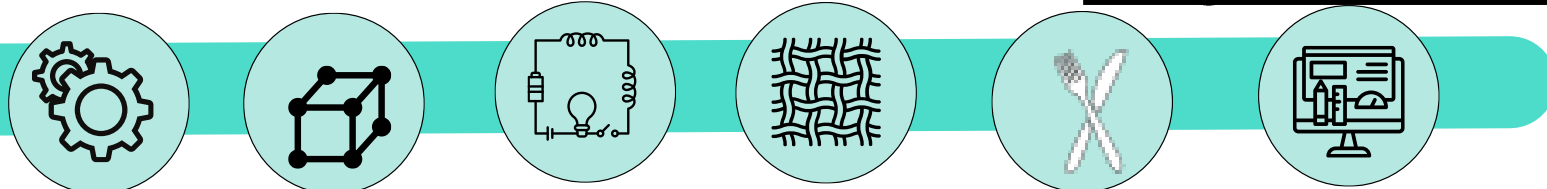
- Analysing why specific products, designers or inventors are successful.
- Evaluating their designs by comparing them against design criteria and considering feedback from peers to suggest improvements.
- Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements.
- Reflecting on feedback to decide if and how it could be used to improve future iterations.

Structures-  
Constructing  
castles

- Designing a castle with key features to appeal to a specific person/purpose.
- Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours.
- Designing and/or decorating a castle tower on CAD software.

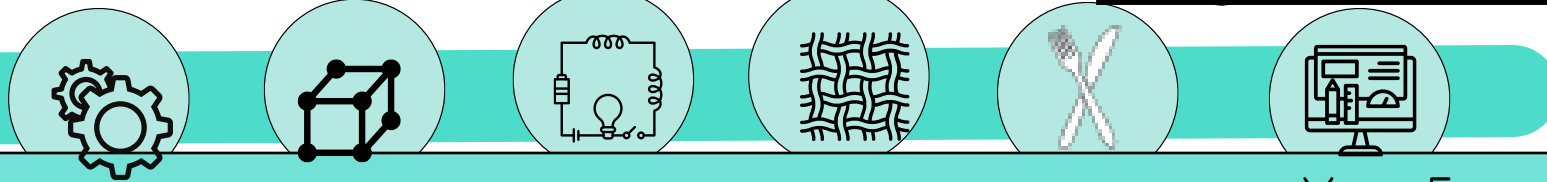
- Constructing a range of 3D geometric shapes using nets.
- Creating special features for individual designs.
- Making facades from a range of recycled materials.

- Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.
- Suggesting points for modification of the individual designs.



## Year 4

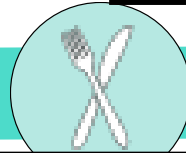
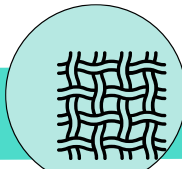
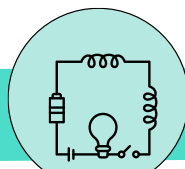
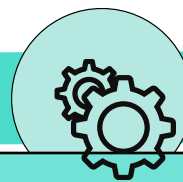
Unit of work	Design	Make	Evaluate
Electrical systems- Torches	<ul style="list-style-type: none"> <li>Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas</li> </ul>	<ul style="list-style-type: none"> <li>Making a torch with a working electrical circuit and switch.</li> <li>Using appropriate equipment to cut and attach materials.</li> <li>Assembling a torch according to the design and success criteria.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluating electrical products.</li> <li>Testing and evaluating the success of a final product.</li> </ul>
Digital World: Mindful moments timer	<ul style="list-style-type: none"> <li>Writing design criteria for a programmed timer (Micro:bit).</li> <li>Exploring different mindfulness strategies.</li> <li>Applying the results of my research to further inform my design criteria.</li> <li>Developing a prototype case for my mindful moment timer.</li> <li>Using and manipulating shapes and clipart by using computer-aided design (CAD), to produce a logo.</li> <li>Following a list of design requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Developing a prototype case for my mindful moment timer.</li> <li>Creating 3D structures using modelling materials.</li> <li>Programming a micro:bit in the Microsoft micro:bit editor, to time a set number of seconds/minutes upon button press.</li> </ul>	<ul style="list-style-type: none"> <li>Investigating and analysing a range of timers by identifying and comparing their advantages and disadvantages.</li> <li>Evaluating my Micro:bit program against points on my design criteria and amending them to include any changes I made.</li> <li>Documenting and evaluating my project.</li> <li>Understanding what a logo is and why they are important in the world of design and business.</li> <li>Testing my program for bugs (errors in the code).</li> <li>Finding and fixing the bugs (debug) in my code.</li> <li>Using an exhibition to gather feedback.</li> <li>Gathering feedback from the user to make suggested improvements to a product.</li> </ul>
Cooking and nutrition- Adapting a recipe	<ul style="list-style-type: none"> <li>Designing a biscuit within a given budget.</li> <li>Conducting market research.</li> </ul>	<ul style="list-style-type: none"> <li>Following a baking recipe.</li> <li>Understanding safety and hygiene rules.</li> <li>Adapting a recipe.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluating an adapted recipe.</li> <li>Evaluating and comparing a range of products.</li> <li>Suggesting modifications.</li> </ul>



## Year 5

Unit of work	Design	Make	Evaluate
Textiles- Waistcoats	<ul style="list-style-type: none"> <li>• Designing a waistcoat in accordance to a specification linked to set of design criteria.</li> <li>• Annotating designs, to explain their decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Using a template when cutting fabric to ensure they achieve the correct shape.</li> <li>• Using pins effectively to secure a template to fabric without creases or bulges.               <ul style="list-style-type: none"> <li>• Marking and cutting fabric accurately, in accordance with their design.</li> </ul> </li> <li>• Sewing a strong running stitch, making small, neat stitches and following the edge.               <ul style="list-style-type: none"> <li>• Tying strong knots.</li> </ul> </li> <li>• Decorating a waistcoat, attaching features (such as appliqué) using thread.               <ul style="list-style-type: none"> <li>• Finishing the waistcoat with a secure fastening (such as buttons).</li> <li>• Learning different decorative stitches.</li> </ul> </li> <li>• Sewing accurately with evenly spaced, neat stitches.</li> </ul>	<ul style="list-style-type: none"> <li>• Reflecting on their work continually throughout the design, make and evaluate process.</li> </ul>
Mechanical systems- Gears and Pulleys	<ul style="list-style-type: none"> <li>• Noticing wider-reaching problems or needs in the community.</li> <li>• Identifying a wide range of needs and potential barriers through market research.</li> <li>• Writing more complex problem statements that consider multiple factors and constraints.               <ul style="list-style-type: none"> <li>• Creating more complex design criteria that require considering detailed user needs, environmental impact, materials and cost.</li> </ul> </li> <li>• Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality.</li> <li>• Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design.</li> <li>• Using a series of prototypes to refine and improve their designs.</li> </ul>	<ul style="list-style-type: none"> <li>• Consistently apply safety instructions.</li> <li>• Select appropriate scissors to handle delicate cutting tasks and challenging materials.               <ul style="list-style-type: none"> <li>• Cutting patterns and drawings accurately.</li> <li>• In supervised groups, using hot glue guns safely.</li> </ul> </li> <li>• Recognising that hot glue is useful for joining materials that need a strong bond that sets quickly.</li> <li>• Choosing PVA glue over hot glue for its safety when joining materials in less intensive projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices impact these aspects.</li> <li>• Assessing their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost.</li> <li>• Considering alternative materials, tools or techniques that could enhance the product.</li> <li>• Providing feedback that is helpful, specific, and encouraging.</li> <li>• Incorporating feedback from peers or users improve their product further, explaining the changes they made and the impact they had</li> </ul>
Digital world- Monitoring devices	<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>	<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>	<ul style="list-style-type: none"> <li>• Stating an event or fact from the last 100 years of plastic history.               <ul style="list-style-type: none"> <li>• Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices.</li> </ul> </li> <li>• Explaining key functions in my program (audible alert, visuals).               <ul style="list-style-type: none"> <li>• Explaining how my product would be useful for an animal carer including programmed features.</li> </ul> </li> </ul>





## Year 6

## Unit of work

## Design

## Make

## Evaluate

## Cooking and nutrition- Come dine with me

- Writing a recipe, explaining the key steps, method and ingredients.
- Including facts and drawings from research undertaken.

- Following a recipe, including using the correct quantities of each ingredient.
- Adapting a recipe based on research.
- Working to a given timescale.
- Working safely and hygienically with independence.

- Evaluating a recipe, considering: taste, smell, texture and origin of the food group.
- Taste testing and scoring final products.
- Suggesting and writing up points of improvements in productions.
- Evaluating health and safety in production to minimise cross contamination.

## Digital world- Navigating the world.

- Writing a design brief from information submitted by a client.
- Developing design criteria to fulfil the client's request.
- Considering and suggesting additional functions for my navigation tool.
- Developing a product idea through annotated sketches.
- Placing and manoeuvring 3D objects, using CAD.
- Changing the properties of, or combining one or more 3D objects, using CAD.

- Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo).
- Explaining material choices and why they were chosen as part of a product concept.
- Programming an N,E, S, W cardinal compass.

- Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool.
- Developing an awareness of sustainable design.
- Identifying key industries that utilise 3D CAD modelling and explaining why.
- Describing how the product concept fits the client's request and how it will benefit the customers.
- Explaining the key functions in my program, including any additions.
- Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool.
- Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch.
- Demonstrating a functional program as part of a product concept pitch.

## Electrical systems- Steady hand game

- Designing a steady hand game - identifying and naming the components required.
- Drawing a design from three different perspectives.
- Generating ideas through sketching and discussion.
- Modelling ideas through prototypes.
- Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.

- Constructing a stable base for a game.
- Accurately cutting, folding and assembling a net.
- Decorating the base of the game to a high quality finish.
- Making and testing a circuit.
- Incorporating a circuit into a base.

- Testing own and others finished games, identifying what went well and making suggestions for improvement.
- Gathering images and information about existing children's toys.
- Analysing a selection of existing children's toys.