

Reception

Unit of work

Technical

Additional

Structures- Junk modelling

- To know there are a range to different materials that can be used to make a model and that they are all slightly different.
- Making simple suggestions to fix their junk model.

NA

Cooking and nutrition- Soup

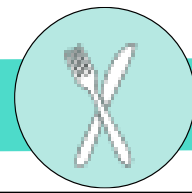
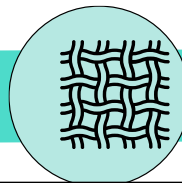
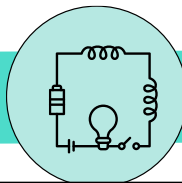
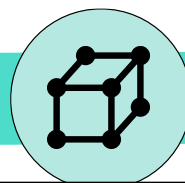
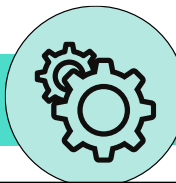
- To know that soup is ingredients (usually vegetables and liquid) blended together.
- To know that vegetables are grown.
- To recognise and name some common vegetables.
- To know that different vegetables taste different.
- To know that eating vegetables is good for us.
- To discuss why different packages might be used for different foods.

NA

Textiles- Bookmarks

- To know that a design is a way of planning our idea before we start.
- To know that threading is putting one material through an object.

NA



Year 1

Unit of work

Technical

Additional

Cooking and nutrition-
Smoothies

- To know that a blender is a machine which mixes ingredients together into a smooth liquid.
- To know that a fruit has seeds and a vegetable does not.
 - To know that fruits grow on trees or vines.
- To know that vegetables can grow either above or below ground.
- To know that vegetables is any edible part of a plant.

NA.

Textiles: Puppets

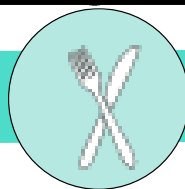
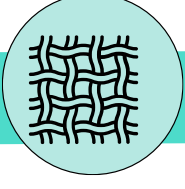
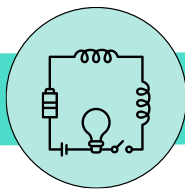
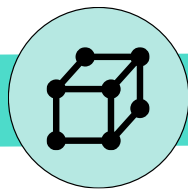
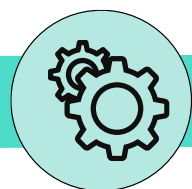
- To know that 'joining technique' means connecting two pieces of material together.
- To know that there are various temporary methods of joining fabric by using staples, glue or pins.
- To understand that different techniques for joining materials can be used for different purposes.
- To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.
- To know that drawing a design idea is useful to see how an idea will look.

NA

Structures- Constructing a
windmill

- 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 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.



Year 2

Unit of work

Technical

Additional

Structures-
Baby bear's
chair

- To know that shapes and structures with wide, flat bases or legs are the most stable.
- To understand that the shape of a structure affects its strength.
- 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.

- To know that natural structures are those found in nature.
- To know that man-made structures are those made by people.

Cooking and
nutrition-
healthy wrap

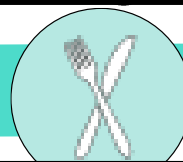
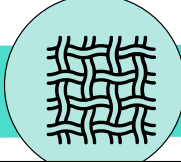
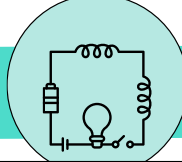
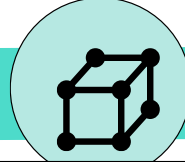
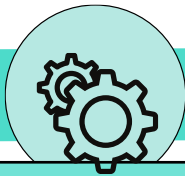
- To know that 'diet' means the food and drink that a person or animal usually eats.
- To know what makes a balanced diet.
- To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar.
- To know that I should eat a range of different foods from each food group, and roughly how much of each food group.
- To know that 'ingredients' means the items in a mixture or recipe.
- To know how to cut, grate, snip and spread to prepare foods.
- To know how to review and give a score to evaluate.

NA.

Mechanisms-
Fairground
wheels

- To know everyday objects have mechanisms.
- To know many things that move have parts inside to help them work.
 - To know mechanisms usually limit unwanted movement.
 - To know everyday objects utilise wheels and axles.
 - To know wheels must be able to turn to work effectively.
 - To know axles allow wheels to turn without falling off.

- To know the features of a fairground wheel include the wheel, frame, pods, a base an axle and an axle holder.



Year 3

Unit of work

Technical

Additional

Textiles-
Egyptian collars

- To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces.
- To know that when two edges of fabric have been joined together it is called a seam.
- To know that it is important to leave space on the fabric for the seam.
- To understand that some products are turned inside out after sewing so the stitching is hidden.

NA

Mechanical
systems-
Pneumatic toys

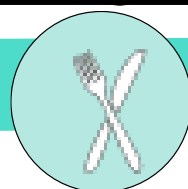
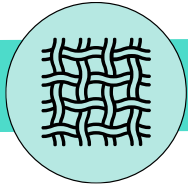
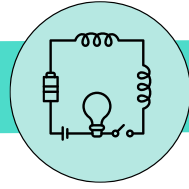
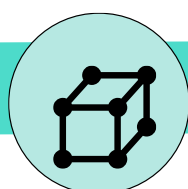
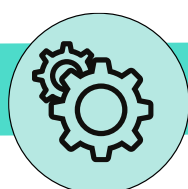
- Beginning to understand how mechanisms work.
- Recognising pneumatic systems in everyday objects (e.g. car boot, adjustable chair.)

- To know that a problem or need is something that a designer can help to solve.
- To know that extra information on drawings or diagrams can help the user understand a design or idea.
 - To know that thumbnail sketches are less detailed quick sketches.
 - To know that a cross-sectional diagram shows the inside of a product.
- To know that an exploded diagram shows how the parts of a product fit together.
- To know that different pieces of equipment will be used at different stages in a plan.
 - To know that different tools and equipment have different dangers.
 - To know that scissors are useful for cutting out complex shapes.
 - To know that designers and inventors create products.
- To know that choices of materials and equipment can affect the final product.
- To know that feedback is ideas and suggestions from other people that can help improve their work.
 - To know that they can choose to use feedback or not.
- To understand that a mechanical system can allow us to move something more easily.
- To know that mechanical systems have more than one mechanism that moves to make them work.
- To know that mechanical systems are often hidden in products to make them look more appealing.
 - To know that pushing air can be used to move a mechanism.
- To know that pivots can be used to create more movement in the mechanical system.
- To know that a combination of mechanisms can improve a product.

Structures-
Constructing
castles

- To understand that wide and flat based objects are more stable.
- To understand the importance of strength and stiffness in structures.

- To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose.
 - To know that a façade is the front of a structure.
- To understand that a castle needed to be strong and stable to withstand enemy attack.
- To know that a paper net is a flat 2D shape that can become a 3D shape once assembled.
 - To know that a design specification is a list of success criteria for a product.



Year 4

Unit of work

Technical

Additional

Electrical systems-
Torches

- To understand that electrical conductors are materials which electricity can pass through.
- To understand that electrical insulators are materials which electricity cannot pass through.
- To know that a battery contains stored electricity that can be used to power products.
- To know that an electrical circuit must be complete for electricity to flow.
- To know that a switch can be used to complete and break an electrical circuit.

- To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens.
- To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison.

Digital World: Mindful
moments timer

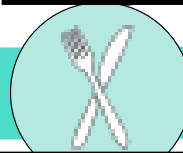
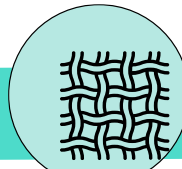
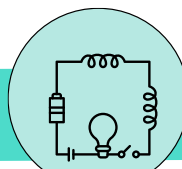
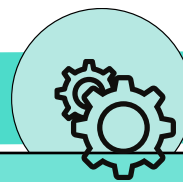
- To understand what variables are in programming
- To know some of the features of a Micro:bit.
- To know that an algorithm is a set of instructions to be followed by the computer.
- To know that it is important to check my code for errors (bugs).
- To know that a simulator can be used as a way of checking your code works before installing it onto an electronic device

- To understand the terms 'ergonomic' and 'aesthetic'.
- To know that a prototype is a 3D model made out of cheap materials, that allows us to test design ideas and make better decisions about size, shape and materials.
- To know that an exhibition is a way for companies to showcase products, meet potential new customers and gather feedback from users.

Cooking and nutrition-
Adapting a recipe

- To know that the amount of an ingredient in a recipe is known as the 'quantity.'
- To know that safety and hygiene are important when cooking.
- To know the following cooking techniques: sieving, measuring, stirring, cutting out and shaping.
- To know the importance of budgeting while planning ingredients for a recipe.
- To know that products often have a target audience.

NA



Year 5

Unit of work

Technical

Additional

Textiles-
Waistcoats

- To understand that it is important to design clothing with the client/ target customer in mind.
- To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric.
- To understand the importance of consistently sized stitches.

NA

Mechanical
systems-
Gears and
Pulleys

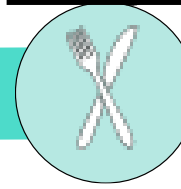
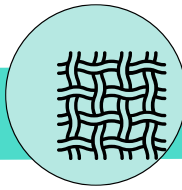
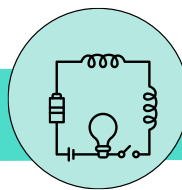
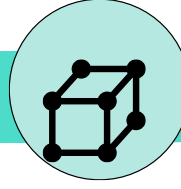
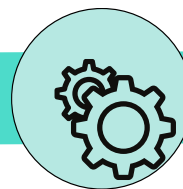
- That mechanical systems that use gears in everyday objects (eg bicycle, clock).
- That gears and pulleys allow us to transfer movement and force from one part of a mechanical system to another.
- That gears allow us to increase the output of a mechanism

- That market research is a way of collecting information about problems or needs.
 - That constraints are things that might stop our ideas being successful.
- That original and innovative ideas are different from what has been made before.
 - That annotations are detailed labels and comments on diagrams.
 - That risks are things that might happen.
 - That hot glue creates a strong bond quickly.
 - That is often better to choose safer equipment.
- That sustainability means thinking about the materials that were used to make a product and how the product was made.
 - That their final product can still be improved by different materials or techniques.
 - That evaluating their designs in detail will help them understand its successful and less successful parts.
 - That feedback should be positive, helpful and specific.
- That explaining how they used feedback to improve their design can help them create better products in the future.

Digital
world-
Monitoring
devices

- 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.

- 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.
 - To know the 6Rs of sustainability.
- To understand what a virtual model is and the pros and cons of traditional vs CAD modelling.



Year 6

Unit of work	Technical	Additional
Cooking and nutrition- Come dine with me	<ul style="list-style-type: none"> • 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). 	NA.
Digital world- Navigating the world.	<ul style="list-style-type: none"> • 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.. 	<ul style="list-style-type: none"> • To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. • To know that 'multifunctional' means an object or product has more than one function. • To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.
Electrical systems- Steady hand game	<ul style="list-style-type: none"> • To know that batteries contain acid, which can be dangerous if they leak. • To know the names of the components in a basic series circuit, including a buzzer. 	<ul style="list-style-type: none"> • To know that 'form' means the shape and appearance of an object. • To know the difference between 'form' and 'function'. • To understand that 'fit for purpose' means that a product works how it should and is easy to use. • To know that form over purpose means that a product looks good but does not work very well. • To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. • To understand the diagram perspectives 'top view', 'side view' and 'back'.