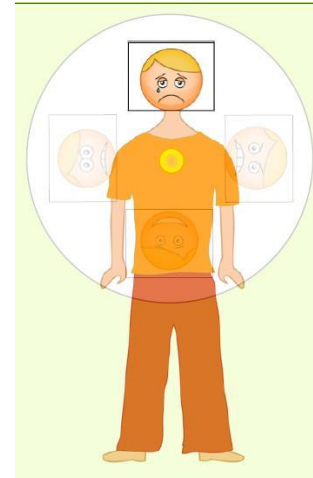


## Knowledge Organiser Year 1 Design and Technology: Once upon a Time : Concept Technical Skills

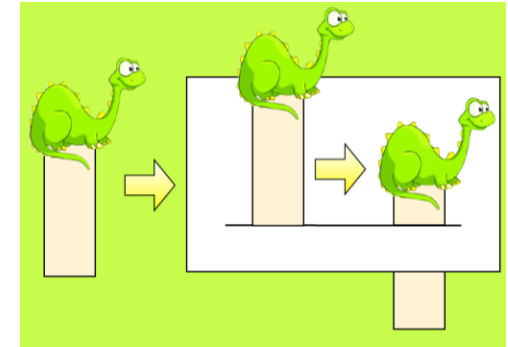
Key Vocabulary	
Mechanism	A system of parts that work together
Landscape	Paper or card with the long side at the top
Portrait	Paper or card with the short side at the top
Design	A plan or drawing produced before it is made
Imagination	An action forming new ideas, images or concepts
Product	The result of the design
Slider	A mechanism that allows movement
Lever	A rigid bar resting on a pivot, used to move a specific load
Pivot	A central point or pin on which a mechanism turns
Make	Putting parts together
Evaluate	Assess the design and product



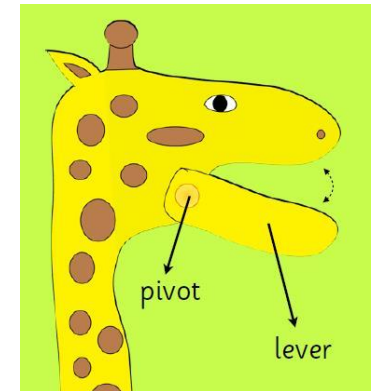
Wheel Mechanism



Moving pictures in a book



Slider



Using split pins



# Knowledge Organiser Year 1 Design and Technology : Where do I live? : Schools

## Concept: Technical skills

Key Vocabulary	
<b>Measure</b>	To weigh ingredients or count ingredients.
<b>Mix</b>	To combine ingredients by stirring them together
<b>Cut</b>	To divide something like butter into pieces by using using a knife.
<b>Beat</b>	To stir a mixture quickly to put air into the mixture
<b>Ingredients</b>	Ingredients are the things that are used to make something, especially all the different foods you use when you are cooking a particular dish.
<b>Scotch Pancakes</b>	A flat spongy cake made by dropping a spoonful of batter on a griddle. (a flat pan)
<b>Soda bread</b>	A kind of bread made with baking soda and not yeast.
<b>Welsh Cakes</b>	<b>Welsh cakes</b> are made from flour, butter/lard, currants, eggs, milk, and spices such as cinnamon and nutmeg. They are cut into circles.
<b>Scones</b>	A kind of bread that is baked in the oven. They can be cut into circles or triangles. You eat them with jam and cream.



Scone  
England



Welsh Cake  
Wales



Scotch Pancake  
Scotland



Soda bread  
Northern Ireland

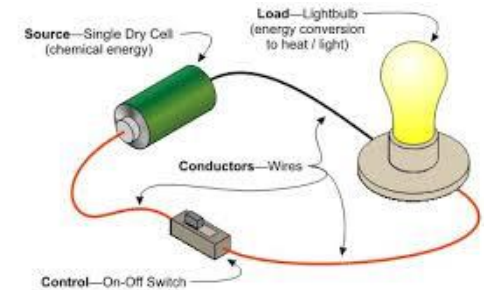
# Knowledge Organiser Year 1 Design Technology: Pirates and Mermaids Concept:

## Application

<b>Key Vocabulary</b>	
<b>Free standing Structure</b>	A free standing structure stands on its own foundations or base without any attachment to anything.
<b>Stable structure</b>	A structure that is not likely to give way or over turn is pushed or pulled.
<b>Strong structure</b>	A structure which is able to be pushed or pulled without collapsing.
<b>Stiff</b>	Something that is not easy to bend or change shape.
<b>Electrical Circuit</b>	An electrical circuit is a complete path around which electricity can flow. It must include a source of electricity, such as a battery.
<b>Electrical Bulb</b>	A device that produces light from electricity.
<b>Pulley</b>	A wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object.
<b>Mechanism</b>	The parts by which a machine or object operates.
<b>Mod Roc</b>	Plaster bandage used for modelling



Lighthouse model



Electrical circuit



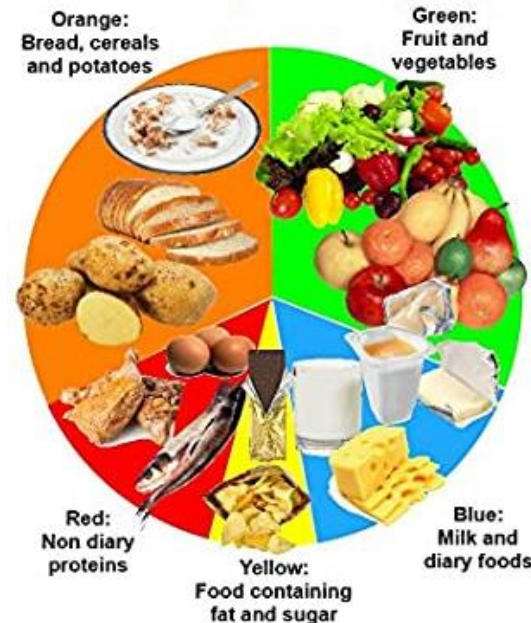
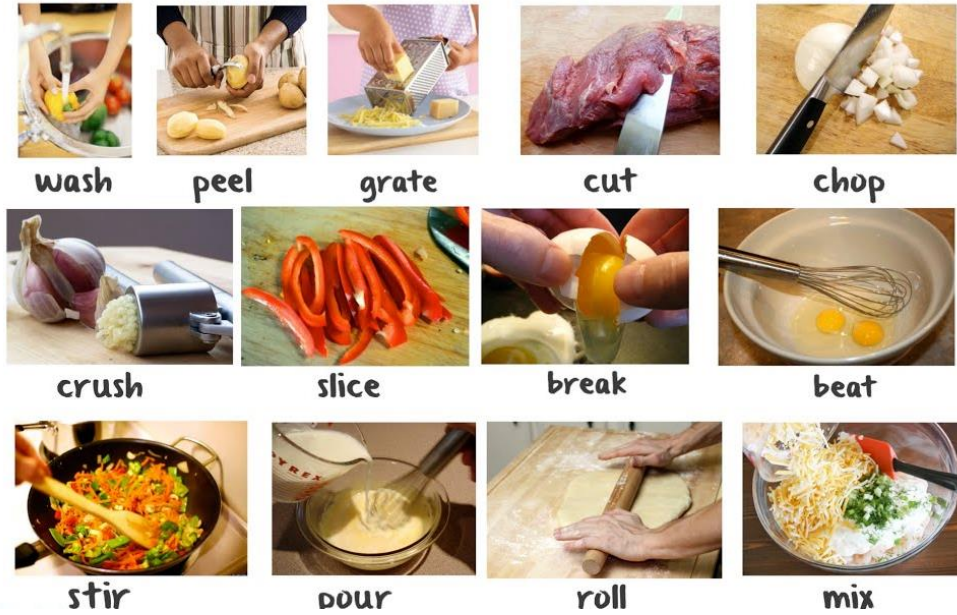
Pulley

# Knowledge Organiser Year 2 Design Technology: Picnic Food Concept: Nutrition

## Key Vocabulary

<b>Cut</b>	To divide into pieces using a knife or sharp object.
<b>Peel</b>	Remove the outer skin or surface of a fruit or vegetable.
<b>Grate</b>	Shred food into small pieces using a grater.
<b>Farmed Food</b>	Food that has been grown on a farm.
<b>Food Groups</b>	A group of foods that has similar benefits to the body. The main food groups are carbohydrates, fruits and vegetables, proteins, fats and dairy products.
<b>Ingredients</b>	The different foods that are combined in a recipe to make a new food.
<b>Varied Diet</b>	Eating a range of foods from across different food groups.
<b>Hygiene</b>	Keeping objects clean in order to prevent disease.
<b>Finger Food</b>	Food that can be picked up and eaten without need a knife and fork.

## Cooking verbs



# Knowledge Organiser Design Technology Year 2: Textiles

## Concept: Design, Evaluate and Make

### Key Vocabulary

<b>construct</b>	Means to build, make, form, assemble, set up or put up something.
<b>structure</b>	Construct or arrange according to a plan.
<b>design</b>	<i>(verb)</i> Decide upon a look and function of a building (or other object) by making a detailed drawing of it.
<b>evaluate</b>	<i>(verb)</i> Form an idea based on the findings and how something has performed.
<b>engineer</b>	A person who designs, builds, or maintains engines, machines or structures.
<b>template</b>	A shaped piece of rigid material used as a pattern for processes such as cutting out, shaping or drilling.
<b>textile</b>	A type of cloth or woven fabric.
<b>thread</b>	A long, thin strand of cotton, nylon or other fibres used in sewing or weaving.
<b>running stitch</b>	A simple needlework stitch consisting of a line of small even stitches which run back and forth through the cloth without overlapping.
<b>join</b>	A place or line where two or more things are connected or fastened together.
<b>technique</b>	Is a way of carrying out a particular task.



**Isambard Kingdom Brunel - Engineer**

Born: 9th April 1806

Died: 15th September 1859

Brunel is probably best remembered for the construction of a network of tunnels, bridges and viaducts for the Great Western Railway.

In 1833, he was appointed their chief engineer and work began on the line that linked London to Bristol.

As well as bridges, tunnels and railways, Brunel was responsible for the design of *several famous ships*.

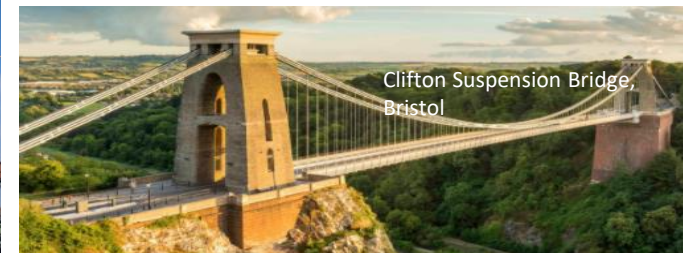


The Royal Albert Bridge, Cornwall

Brunel was also responsible for the redesign and construction of many of Britain's major docks, including *Bristol, Cardiff and Milford Haven*.



SS Great Britain



Clifton Suspension Bridge, Bristol

# Knowledge Organiser Design Technology Year 2: The Great Fire of London

## Concept: Design, make and evaluate

### Key Vocabulary

<b>construct</b>	Means to build, make, form, assemble, set up or put up something
<b>structure</b>	Construct or arrange according to a plan
<b>build</b>	Construct something by putting parts or materials together over a period of time
<b>technique</b>	Is a way of carrying out a particular task
<b>design</b>	<i>(verb)</i> Decide upon a look and function of a building (or other object) by making a detailed drawing of it
<b>sculpt</b>	Create or represent something by carving, casting or other shaping techniques
<b>evaluate</b>	<i>(verb)</i> Form an idea based on the findings and how something has performed
<b>lever</b>	A simple machine where you place a long bar onto a pivot point. You apply force in one direction and the pivot point re-directs the force in another direction.
<b>slides</b>	To move or cause to something to move smoothly along a surface in continual contact with it
<b>axle</b>	A bar or shaft on which a wheel or wheels turn
<b>architect</b>	A person who designs buildings and also supervises their construction

### The Great Fire of London.

In 1666, a devastating fire swept through London, destroying 13,200 houses, 87 parish churches, The Royal Exchange, Guildhall and St. Paul's Cathedral.



**St Paul's  
Cathedral (old)**



**St Paul's Cathedral as it  
stands today**

### Sir Christopher Wren

One of the most highly acclaimed architect in history. He was responsible for rebuilding 52 churches in the City of London after the Great Fire of London in 1666, including the masterpiece St Paul's Cathedral, completed in 1710.



# Knowledge Organiser Year 3 DT: Super Sized Jewellery

## Concept: Design, Make, Evaluate (textiles)

Key Vocabulary	
Jewellery	Small decorative items or ornament worn for personal adornment such as rings, brooches, earring, necklaces.
Supersized	Greatly increased in size beyond what is usual: extremely large in size.
Sketch	A rough quickly drawn design or outline without much detail. Used as a preparation for a more detailed piece of work.
Modroc	A plaster bandage used for modelling, crafting or casting.
Join	To fix or fasten different object together.
Fabric	Cloth that is woven or knitted.
Prototype	An original model which is then further developed or improved.
Design	A plan or model for the construction of an object.
Evaluate	To study carefully and judge the results of a process.



From original design sketch to finished product.

# Knowledge Organiser Year 3 DT: Scone Design

Concept: Nutrition

Key Vocabulary	
Scone	A small unsweetened or lightly sweetened cake made from flour, fat, and milk and sometimes having added fruit
Knead	Push the dough away from you with the heel of your palm, fold it over itself with your fingers, and pull it back.
Nutrition	Nutrition is the study of food and how it works in your body. Nutrition includes all the things that are in your food, such as vitamins, protein, fat, and more.
Sweet	Sweet food has the flavor or taste of sugar or honey.
Savoury	Savoury food does not have the taste of sugar, but has a fuller flavour.
Food safety	Food safety is about handling, storing and preparing food to prevent infection and help to make sure that our food keeps enough nutrients for us to have a healthy diet.
Clotted cream	A thick cream made by heating full fat cows milk and then leaving it to cool in a shallow pan, as it cools the cream rises to the top in thick lumps.



**Traditional Scones are eaten with:**  
**Jam**  
**Clotted cream**



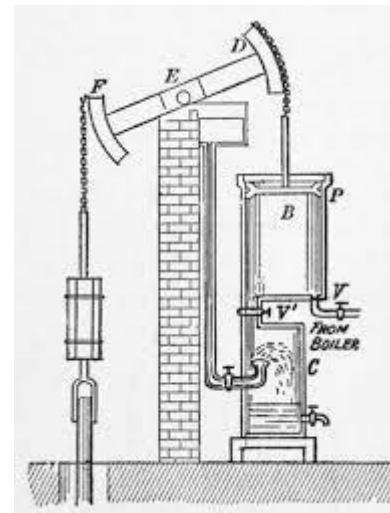
The difference between cream tea in Devonshire and **Cornwall** comes down to how it is served. Both versions serve the same items: tea, scones, jam, and clotted cream. In Devon, the scones are split in two and topped with cream followed by jam. In Cornwall, the split scones are topped with jam and then cream.



# Knowledge Organiser Year 3 DT: Mining Technology Concept: Design, Make, Evaluate

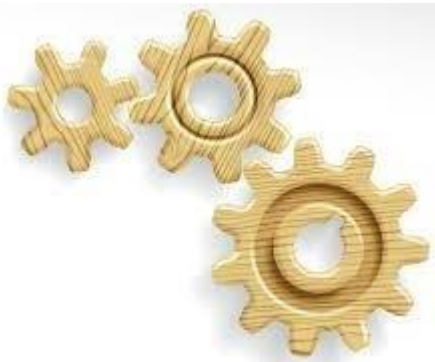
## Key Vocabulary

Mechanism	A mechanism is a mechanical device used to perform a task.
Lever	A lever is a long rigid body balanced on a point. If one side is pushed down, the other will rise.
Pulley	A wheel on a fixed axle which has a rope or cable around it. They are used to reduce the time and energy used to lift heavy objects.
Gear	Gears are wheels with teeth that slot together. When one gear turns, so does the next. They can be used to increase the power of a turning force.
Engine	An engine is used to change energy into movement that can be used.
Machine	A machine is a device that does a physical task such as moving or lifting objects.



**A beam engine used in a mine.**

The steam from the engine forces the beam to move. This then lowers and raises the cable on the left.



## Gears

### Simple Machines

a basic tool that is used to do work

**inclined plane**

a flat surface with one end higher than the other



ramp dump truck slide

**wedge**

an object that is thick at one edge, tapered to a thin edge at the other



axe knife nail fork

**screw**

an inclined plane that is wrapped around a cylinder



drill jar lid spiral staircase

**lever**

a straight bar that pivots on or around a fulcrum



first class second class third class  
seesaw crowbar bat

**wheel & axle**

a wheel attached to a bar so that they rotate together



doorknob roller skates toy car

**pulley**

a chain, belt, or rope wrapped around a wheel



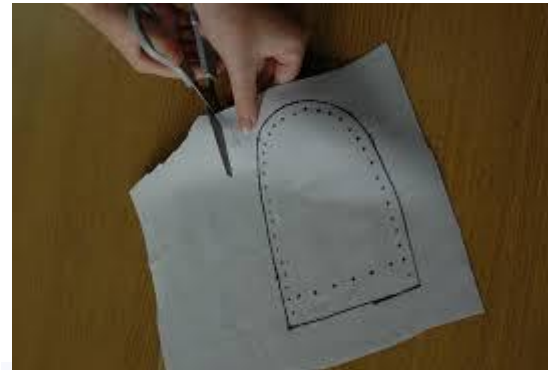
mini blinds flagpole drapes

# Knowledge Organiser Year 4 DT: Roman Purses (Textile) Concept: Design, Make, Evaluate

Key Vocabulary	
Textile	A type of cloth or woven fabric
Template	A shaped piece of rigid material used as a pattern for processes such as cutting out and shaping.
Running Stitch	A simple needlework stitch consisting of a line of small even stitches which run back and forth through the cloth without overlapping.
Drawstring	A string in the seam of the material of a garment or a bag, which can be pulled to tighten or close it.
Felt	a cloth made of wool and fur often mixed with natural or synthetic fibers through
Purpose	The reason for which a product is created and used.



Templates (below) are placed onto fabric as a guide for cutting. This ensures that fabric is cut to the desired size accurately.



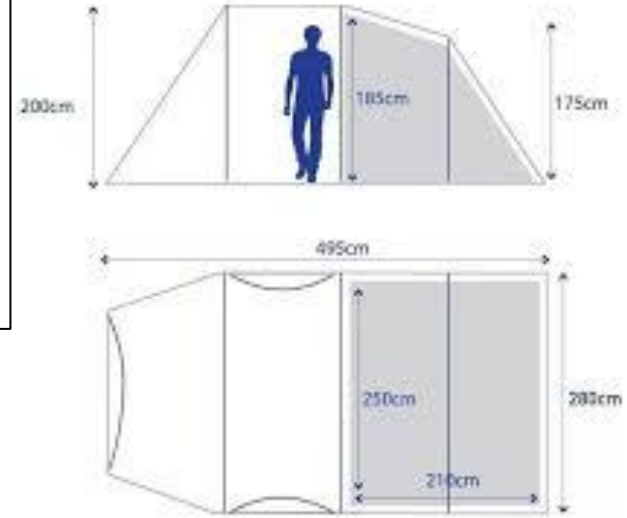
Examples of purses and coin pouches



# Knowledge Organiser Year 4 DT: Survival Structures Concept: Design, Make, Evaluate

Key Vocabulary	
<i>Assemble</i>	To fit together all of the individual parts of a product.
<i>Strong</i>	Able to withstand force, pressure or wear.
<i>Stiff</i>	Not easily bent or changed in shape.
<i>Rigid</i>	Not flexible (similar to stiff)
<i>Reinforce</i>	To strengthen or support an object by adding more material.
<i>Alteration</i>	A change that has been made to a product or object.
<i>Quality</i>	The standard of an object's properties when compared to others.
<i>Mark Out</i>	To indicate where cuts to a material should be made.
<i>Measure</i>	To identify the length using a measure tool e.g. a tool

An annotated diagram should include measurements. It is also good practice to draw your design from different angles to give a clear picture of your design.



Shelterbox is a Cornish charity whose mission is to provide emergency shelter to families who have lost their home to disaster, enabling them to rebuild their lives.

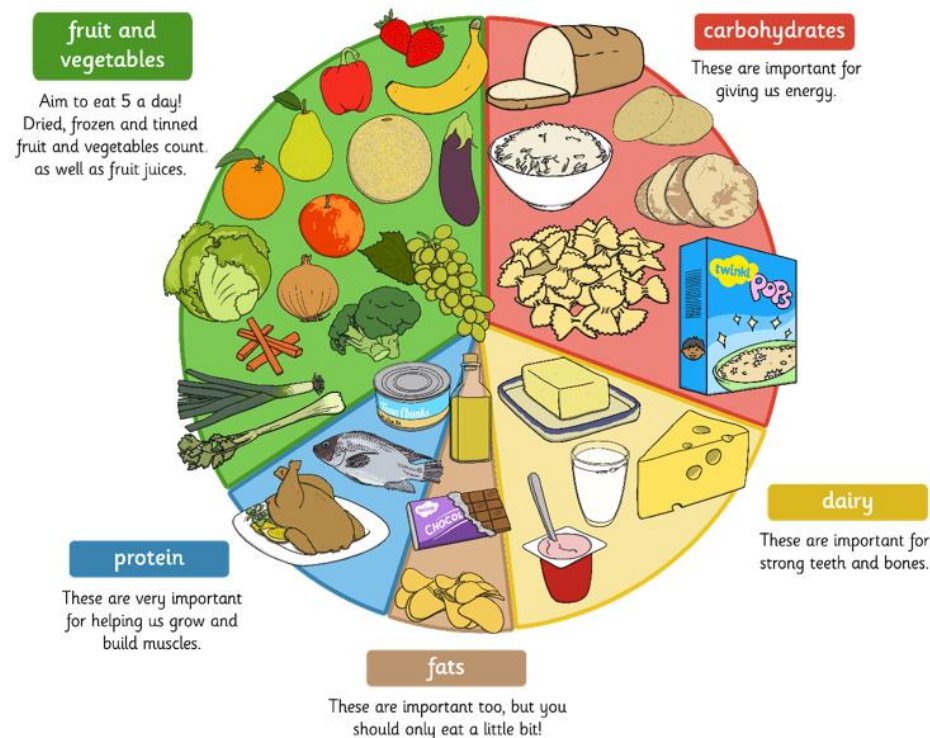
Shelters come in all different shapes and sizes. Their purpose is to withstand and protect from the outside elements e.g. weather.



## Knowledge Organiser Year 4 DT: Food Technology Concept: Nutrition

Key Vocabulary	Things we already know
Nutrition	The study of nutrients in food and how the body uses them.
Healthy	In a good physical condition.
Energy	Strength to be able to move and grow.
Saturated Fats	Types of fats, considered to be less healthy, that should only be eaten in small amounts.
Unsaturated fats	Fats that give you energy, vitamins and minerals.
Food group	Is a collection of food that share similar nutritional value. There are 5 main food groups.
Vitamins and minerals	Essential nutrients found in different types of foods.
Seasonality	Is the time of year when a food type is at its best in terms of flavour or harvest.

Some foods are required when they are out of season so producers grow them in hot houses/green houses in the UK. Alternatively, the food is produced abroad and sent to the UK.



- Living things need food to grow and to be strong and **healthy**.
- Plants can make their own food, but animals cannot.
- To stay **healthy**, humans need to exercise, eat a **healthy** diet and be hygienic.
- Animals, including humans, need food, water and air to stay alive.

# Knowledge Organiser Year 5

## DT: Textiles Concept: Design, Make, Evaluate

### Key Vocabulary

Aesthetics	The quality of an item's appearance relation to its beauty or artistic quality.
Template	A shaped piece of rigid material used as a pattern for processes such as cutting out or shaping.
Textile	A type of cloth or woven fabric.
Seam	Where two pieces of material are sewn together
Seam Allowance	An excess measure of material included to make up for any material lost in sewing process and enable the seam to exist
Running Stitch	Simple stitch consisting of a line of small even stitches
Overstitch	Simple stitch consisting of the thread going over the edge of the fabric, used to stop a fabric from fraying.
Tie Off	Leave a tail, make a loop, sew through loop not once but twice. (To secure the thread at the end of sewing).

### Tips for Threading a Needle

1. Put white behind the needle
2. Cut thread with sharp scissors
3. Cut thread at an angle



4. Stiffen thread with water, saliva or beeswax



5. Use a needle threader



6. Use tweezers



from the spruce



**Templates are used to ensure accurate cutting of materials.**



An effective bag will be practical as well as aesthetically pleasing

# Knowledge Organiser Year 5

## DT: Theatre Snacks Concept: Nutrition

### Key Vocabulary

<b>Nutritious</b>	Food that contains substances that a person needs to grow and be healthy is considered nutritious.
<b>Seasonality</b>	The season in which food is grown . For example, British strawberries come into season on the summer.
<b>Appearance</b>	How a product looks. A snack should be visually appealing to the customer as well as nutritious.
<b>Taste</b>	The sensation of flavours perceived by your tongue. Flavours which compliment each other give a balanced taste.
<b>Texture</b>	How a food feels to touch of when being eaten. Some foods have a crispy texture whereas others may be chewy.
<b>Aroma</b>	How a food smells.
<b>Hygiene</b>	Hygiene refers to the process of keeping surface and food clean through safe preparation of food to limit food diseases.
<b>Savoury</b>	Foods that are salty or spicy rather than sweet.



Healthy snacks should contain little or no added sugar. They often use fresh fruit and vegetables and may have a carbohydrate base of grains, oats or seeds.



### Good Carbs

More fiber, minerals & vitamins, Low glycemic index, Feel full on fewer calories



Whole-grain



Oatmeal



Green vegetables



fruits

### Bad Carbs

Low fiber & nutrients, High glycemic index, Lots calories needed to make you full



Refined grains



Sugary cereals



Soda & sugary drinks



Candies & cookies



# Knowledge Organiser Year 5

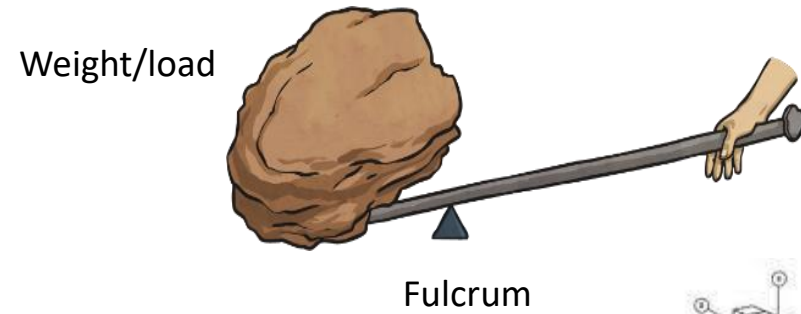
## DT: Catapults Concept: Design, Make, Evaluate

Key Vocabulary	
Prototype	A first form of a product from which later, more finalized forms are developed.
Test	A procedure designed to establish the quality of a product.
Refine	Make changes to a design to improve the produce and remove unwanted elements.
Precision	Being exact and accurate with measurements, cuts and other skills when creating a product.
Functionality	How well a product is suited to its intended purpose and use.
Component	A smaller part of a larger product.
Mechanism	A system of parts which work together in a machine. Examples include levers, pulleys and gears.
Lever	A solid bar attached at a single pivot point.

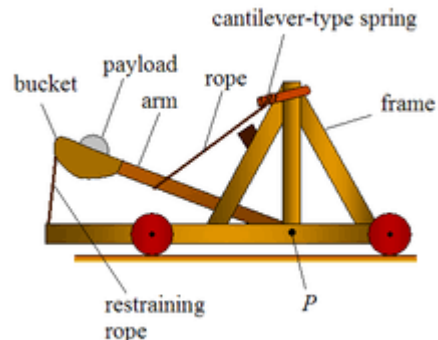
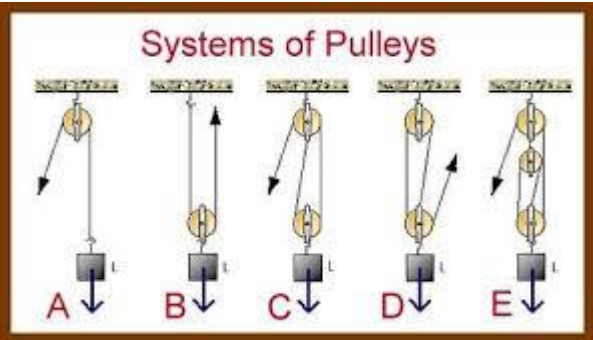
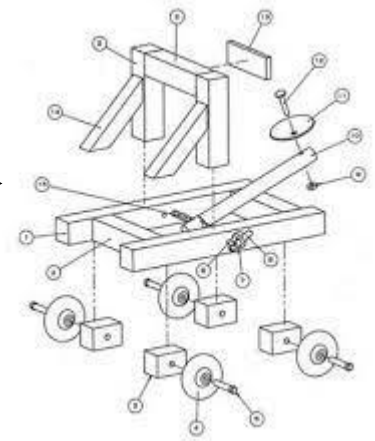
Example catapults with a lever:



A simple lever mechanism:



An exploded diagram shows all of the components within a product.



# Knowledge Organiser Year 6 D&T: Designing Torches

## Concept: Energy

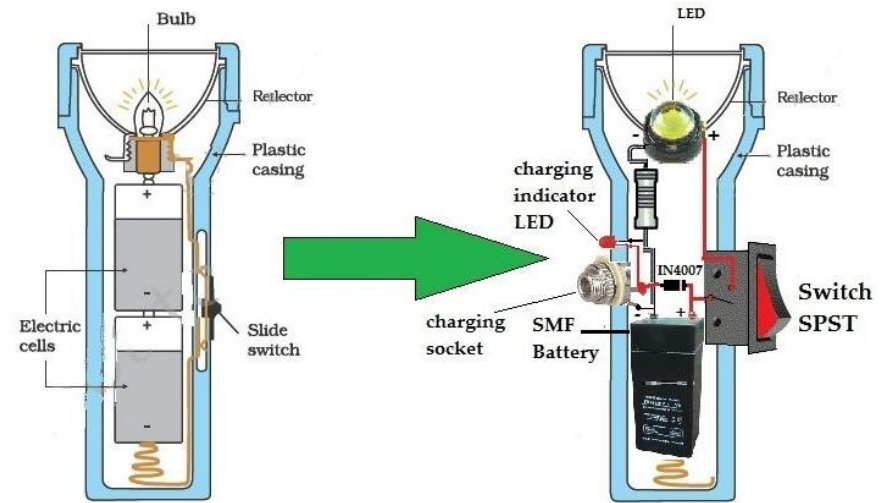
Key Vocabulary	Things we already know
<b>consumer</b>	a person who purchases a product for their own use
<b>target market</b>	a group of consumers in which a product is aimed
<b>RRP (Recommended Retail Price)</b>	the price at which the manufacturer recommends that the retailer sell their product
<b>product design</b>	the materials and processes that are used make a product
<b>profit margins</b>	the difference between the cost of making a product and the price at which it is sold
<b>design specification</b>	a list of criteria a product needs to address
<b>prototype</b>	a model that designers make to take their idea from a flat illustration on a page to a 3D item that you can look at from all angles.
<b>function</b>	how a product works
<b>purpose</b>	why a product has been made
<b>innovation</b>	new idea, design, method or function

Example torches:

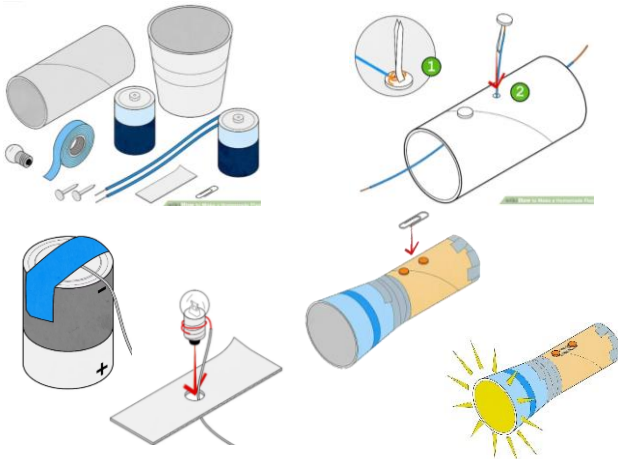


What are their functions and purposes? Who is the target consumer?

How do torches work?



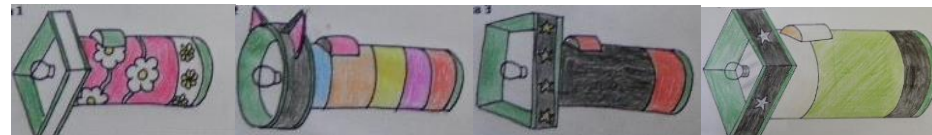
How to make a working torch:



Example prototypes:



Design ideas:





# Knowledge Organiser Year 6

## DT: Mayan Tortillas Concept: Nutrition

### Key Vocabulary

<b>Nutritious</b>	Food that contains substances that a person needs to grow and be healthy is considered nutritious.
<b>Seasonality</b>	The season in which food is grown . For example, British strawberries come into season on the summer.
<b>Traditional Recipe</b>	A long established recipe linked to a certain culture
<b>Local</b>	Local food is food that is produced within a short distance of where it is consumed due to the crops grown in the area.
<b>Adapt</b>	To adapt a recipe is to change the recipe's ingredients or quantities to gain a desired outcome.
<b>Complimentary Flavours</b>	Complimentary flavors are flavors that blend together so well that they blend into one single continuous flavor,.
<b>Food Processing</b>	the action of performing a series of mechanical or chemical operations on food in order to change or preserve it.
<b>Tortilla</b>	A tortilla is a thin, circular unleavened flatbread originally made from maize hominy meal, and now also from wheat flour.



### Tortilla Recipe

4 cups of flour  
3 teaspoon of salt  
3 teaspoon of baking powder  
2-3 cups of warm water  
4 tablespoon of lard

Mix all ingredients together and slowly add warm water to form a firm soft dough.

### Popular Tortilla Toppings

Chicken, beef, Beans, Cheese  
Lettuce, Tomato, Avocado,  
BBQ sauce, sour cream, salsa



# Knowledge Organiser Year 6

## DT: Design, packaging, evaluation Concept: Design, Make, Evaluate

### Key Vocabulary

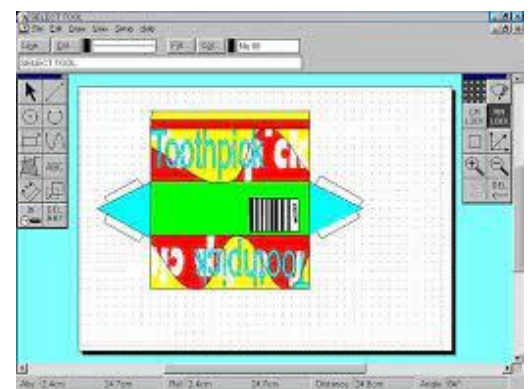
<b>Aesthetics</b>	Aesthetics refers to the way a product looks and feels.
<b>Refine</b>	Make changes to a design to improve the produce and remove unwanted elements.
<b>Functionality</b>	How well a product is suited to its intended purpose and use.
<b>Reinforce</b>	To strengthen a design so that it holds its shape even when force is placed upon it.
<b>Design Criteria</b>	Elements which must be met in order for the design to be successful for the user.
<b>Visual Appeal</b>	Visual appeal is what meets the eye. It's the colors, shapes, pictures, fonts, white space, and overall visual balance of a design.
<b>Components</b>	A smaller part of a larger product.
<b>Net</b>	A pattern that you can cut and fold to make a model of a solid shape.
<b>Resourceful</b>	having the ability to find quick and clever ways to overcome difficulties.



Nets of different packages. The nets are folded into shape to create the final package.



Computer Aided Design (CAD) can be used to aid the design process when creating packaging.



As part of the fiver challenge, you have £5 to use in order to design and create a product to sell. What will; you make?



what could YOU do with £5?