



Key Vocabulary

design problem	A problem that needs solving through research and design.
design brief	Specifies all the core details need for the product.
product	an article or substance that is manufactured and sold.
research	investigation into and study of materials and sources in order to establish facts and reach new conclusions.
mood board	an arrangement of images, materials, pieces of text, etc. intended to evoke or project a particular style or concept.
Initial ideas	The first sketches of how a product might look.
annotate	add notes to (a text or diagram) giving explanation or comment.
order of work	A document that outlines a process for completing a task.
Stable / Stability	Not likely to give way or overturn, firmly fixed. The state of being stable
Free Standing	Not attached to or supported by another structure. Not relying on or linked to anything else, independent
Strength	The capacity of an object or substance to withstand great force or pressure
Landscape	Horizontal in stature
Portrait	Vertical in stature
Durable	able to withstand wear, pressure, or damage; hard-wearing.

Potted History of Frames

Picture frames date back to the 2nd century A.D. We know this due to a discovery made in an Egyptian tomb at Hawara, of a Fayum of a Mummy Portrait still preserved inside a wooden frame. The ancient Egyptian and Greeks, used frames to divide scenes and ornamentation either along part of a decorative wall of around large sculptures made from pottery.

Early frames were actually made from one piece of wood. The area to be painted was carved out leaving a raised frame. Later the engaged frame was produced, where moulding strips were attached to a flat piece of wood giving the same raised frame effect as carving from one piece.

During the Italian renaissance, the Medici family created the first portable frame using this method. The picture frame continued to evolve and in 1515 through to 1547 as art became the forefront of daily life and began to flourish. Frames began to be designed and manufactured by many furniture and picture frame builders and thus became available and distributed to a wider market than before.

Subsequently, over the years' picture frames have continued to evolve and also had a glass panel added (a fairly recent idea) to help keep the art preserved.



Equipment and tools

Hack saw	
Bench Hook	
Hot Glue Gun	
Butt Joint	
PVA glue	

Construction and Joining Techniques

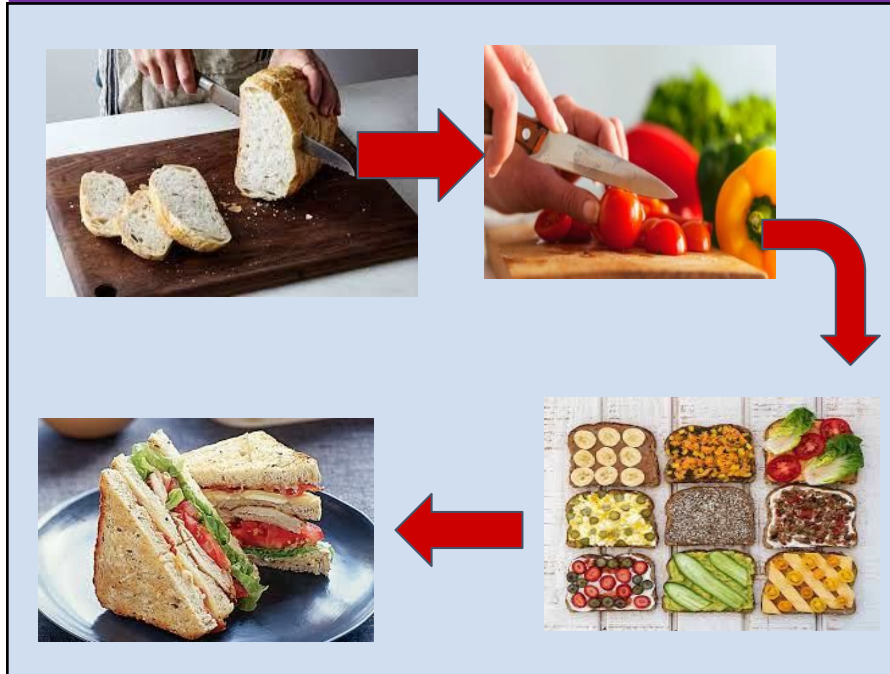
Cutting wood - Mini Hacksaw/ Reciprocating Saw. Long even strokes, same pressure.  
 Butt Joint – to join two ends of wood at 90°  
 Glue – not any glue will do Hot Glue will stick almost any wood and card, but terrible to use if you want to paint. Hot glue is also good for filling gaps. For good joints put a long line of glue, press together and run tip of glue gun along both sides of joint.  
 PVA Glue – best for small parts that will need painting.



### Key Vocabulary

Hygiene	The practice of keeping clean to stay healthy and prevent disease.
cutting	Divide or make something smaller using a sharp tool like a knife.
nutrition	The study of food and how it works in your body
Texture	How something feels when it is touched.
slicing	Cutting a narrow piece or portion of food.
layer	A thickness of something that is spread over a surface.
diet	The type of food that is eating by a person or organism.
vegetables	Parts of plants people eat
filling	A mixture of food to fill certain kinds of food dishes.

### Making a sandwich



### The sandwich business

#### The Subway® Story

The Subway® story began in 1965 when 17-year-old Fred DeLuca asked his family friend, Dr. Peter Buck, a nuclear physicist, for advice on how to pay his college tuition.

The partners opened their first restaurant in Bridgeport, Connecticut, in August of 1965, where they served freshly made, customisable and affordable sandwiches to local guests. Today, Subway® has grown to become one of the world's largest restaurant brands, serving customisable and signature sandwiches, wraps and salads to millions of guests, across more than 100 countries in nearly 37,000 restaurants every day

### Food and Safety Hygiene

**Are you safe?**

When is it important to wash your hands?

Is the kitchen, work surfaces and food equipment clean?

How should raw and cooked food be handled and stored?

How would you know how long these foods last?

How can you make sure that microbes do not multiply quickly?

Where should raw meat be kept in a fridge?

Where should these foods be stored?

Enjoy your food!

What should you do before you cook?

### Nutrition

**Food Groups**

**Fruit and Vegetables.** Aim to eat 5 a day! Dried, frozen and tinned fruit and vegetables count as well as fruit juices.

**Bread, rice, potatoes and pasta and other starchy foods.** These are important for giving us energy.

**Milk and dairy foods.** These are important for strong teeth and bones.





**Meat, fish, eggs, beans and other non-dairy sources of protein.** These are very important for helping us grow and build muscles.

**Foods and drinks high in fat and/or sugar.** These are important, too, but you should only eat a little bit!



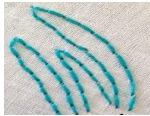
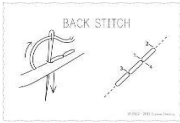
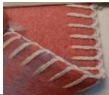



### A potted History of the sandwich

Acknowledging the fact that combinations of bread/pastry filled with meat or cheese and dressed with condiments have been enjoyed since ancient times, Food historians generally attribute the creation of the sandwich, as we know it today, to **John Montagu, 4th Earl of Sandwich**. During his excursions in the Eastern Mediterranean, he saw grilled pita breads and small canapes and sandwiches served by the Greeks and Turks during their mezes, and copied the concept for its obvious convenience. There is no doubt, however, that the Earl of Sandwich made this type of light repast popular among England's gentry, and in this way, his title has been associated with the sandwich ever since.

### Key Vocabulary

Aida cloth	<b>Aida fabric</b> is a popular choice for an easy-to-count pattern to help nail that final design.	
Embroidery	Ornamental needlework.	
Pattern	A model or design used as a guide in needlework and other crafts.	
Embroidery Floss	A mercerized cotton thread composed of 6 individual threads or piles which can be separated.	

### Stitches and their uses

running stitch			The most basic and most commonly used stitch. Creates a secure and permanent bind.
back stitch			Form lines and are most often used to outline shapes and to add fine detail. It can attach two pieces of fabric strongly and permanently.
blanket stitch			Used to reinforce the edge of thick materials. Also, a decorative stitch used to finish an unhemmed blanket.
cross stitch			Traditionally used for decorating household items.

### Making a scented sachet

Scented sachets add scent to your drawers. Scents range from simple one-note fragrances, like cedar or lavender, to more complex floral bouquets. We will be making our own drawer sachets by filling a small cotton or muslin drawstring bag with dried herbs or your favourite potpourri. You can then place the sachet in the back of the drawer, and replace it regularly, when the scent fades.










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research	investigation into and study of materials and sources in order to establish facts and reach new conclusions.
Final Design	Sketches of how a product should look when it has been made.
annotate	add notes to (a text or diagram) giving explanation or comment.
closed question survey	Survey with closed-ended questions ie. pre-populated answer choices for the respondent to choose.
components	a part or element of a larger whole, especially a part of a machine or vehicle.
circuit	a complete and closed path around which a circulating electric current can flow.
series	electrical circuits or components arranged in a single pathway (one after the other no branches) through which electricity can flow.
order of work	A document that outlines a process for completing a task.

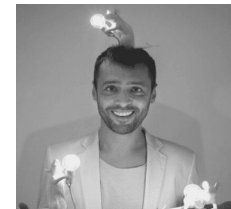
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**Mouse Designer**


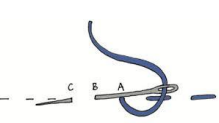



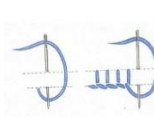




Marcantonio Raimondi Malerba was born in 1976 in Massa Lombarda, Italy. He attended the Art Institute and the Academy of Fine Arts. Marcantonio works in the theatre scene and collaborates with architects on various projects. He creates unique pieces of design in parallel with a production of art. Man and Nature are his favourite themes, interpreting both dynamics and beauties of Nature and he loves thinking about his work as a direct continuation of what he used to do as a child, playing with everything he finds, daydreaming, and making his imaginary world alive. “I never give up irony; the irony is a serious matter. If a good idea is even fun, I cannot resist to realise it”.

**Key Vocabulary**

Felt	A textile product that is produced by matting, condensing and pressing fibres together.
Embroidery	ornamental needlework.
Pattern	A model or design used as a guide in needlework and other crafts.
embroidery Floss	A mercerized cotton thread composed of 6 individual threads or piles which can be separated.
Pouch	A small flexible bag typically carried in a pocket or attached to a belt

**Stitches and their uses**

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**Bag Designer - Sarah Haran**

Sarah was COO of a computer software firm for 18 years until she realised there wasn't a high quality handbag available that could take you from day to night with ease, that was beautiful, practical *and* functional, so she took matters into her own hands and designed her own! Fast forward a few years, and her hobby is now her business, with thousands of women across the UK (and other parts of the world), wearing Sarah Haran on their arm!

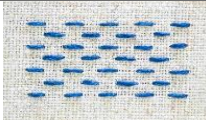
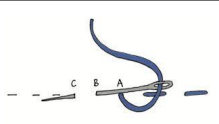

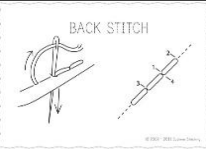

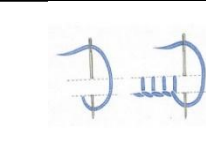



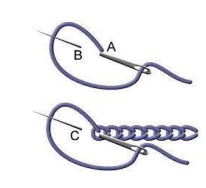
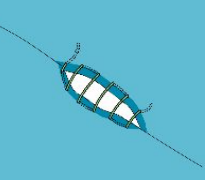
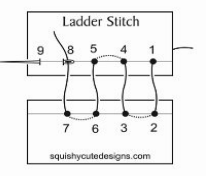
The Dahlia 2-in-1 Tote was Sarah's first born bag, and to this day it continues to be her bestseller. The magic of the Dahlia, that makes it the crème de la crème of handbags, is that the front Ivy pouch is interchangeable, as is the tassel and handbag strap! This clever interchangeable concept means you can create a variety of different looks with just 1 bag to take you from day to night with ease, simply by adding different elements to the bag to give it a whole new look. Although she started out with one tote bag, their range now boasts everything from a backpack to a bucket bag and everything in between! The difference to other bags is that you can change the look of each and every bag in the range and have hours of fun creating different combinations.










Key Vocabulary	
Felt	a textile material that is produced by matting, condensing and pressing fibers together
applique	ornamental needlework.
pattern	a model or design used as a guide in needlework and other crafts.
cotton	thread made from cotton fibre.
embroidery floss	A mercerized cotton embroidery thread composed of 6 individual threads or piles, which can be separated.
final design	annotated diagrams to show the product being made.
annotate	add notes to (a text or diagram) giving explanation or comment.
closed question survey	Survey with closed-ended questions ie. pre-populated answer choices for the respondent to choose.
components	a part or element of a larger whole, especially a part of a machine or vehicle.
order of work	A document that outlines a process for completing a task.

Stitches and their uses			
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cross stitch			Traditionally used for decorating household items.
chain stitch			Good to work on seams and combine with embellishments. Chain stitches are also used in making tambour lace, needle lace, macramé, and crochet.
ladder stitch			Primarily used to close seams on stuffed items after the stuffing is added and there is no access to the back of the fabric. It can also be used to repair split seams or to alter clothing.

Applique	
Appliqué	<p>Cut out the pieces of fabric to make your design. Sew onto your bag, trousers etc using running stitch and blanket stitch.</p> 
Reverse applique	<p>Cut the shape of your design out of the top piece of fabric then sew a contrasting colour below. You can do this as many times as you would like but make sure that you have cut away some of the top fabric so that you can see the new fabric below.</p>  




Textile Artist	
	<p>Billie Zangewa (born: 1973 in Blantyre, Malawi) is a half Malawian, half South African artist who hand sews silk fabrics to create collage tapestries, and who now lives in Johannesburg. Since 2004, her art has featured in international exhibitions including at the Paris Art Fair at the Grand Palais in Paris</p>



### Key Vocabulary

Bread	Food made of flour, water and yeast.
Dough	A thick malleable mixture of flour and liquid used for baking.
Knead	Work moistened flour into dough or paste with the hands by squeezing.
Bake/ cook	Cook food in an oven.
Yeast	Raising agent, producing CO2 gases which makes the bread rise. Correct conditions needed to grow – food, warmth, moisture and time.
proving/ fermenting	The dough is left to rise. This is called proving . The yeast is produces carbon dioxide gas, which causes the dough to rise.
Knocking back	To create an evenly textured bread the dough is kneaded to release some of the gas. It is left to rise again.

### Types of Yeast

	Fresh yeast, sometimes called cake yeast or compressed yeast, is a block of fresh yeast cells that contains about 70% moisture and is commonly used by baking professionals. It's pale beige in color, soft and crumbly with a texture similar to a soft pencil eraser, and has a stronger yeast smell than dry yeast.
	Active Dry Yeast. A yeast common in supermarkets. It's made by removing the water in live yeast and grinding it into fine granules. The biggest myth surrounding active dry yeast is that it needs to be "proofed" by dissolving it in warm water with a pinch of sugar; if it foams and bubbles, it's alive, active, and ready to be used. Active dry yeast is produced in a such a way that it can be added directly to the bread dough with the dry ingredients.
	Sometimes called "bread machine yeast," this type of yeast is ground into finer granules than active dry yeast, so it dissolves quickly in the dough. While you can proof instant yeast if you want to, it's not necessary; just like active dry yeast, can be added in with the dry ingredients.

### Food and Safety Hygiene



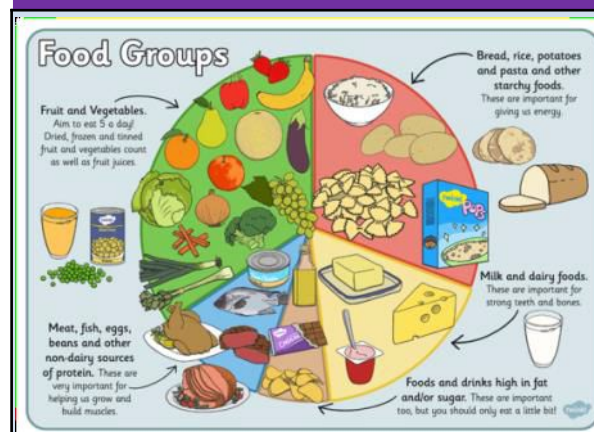
**Are you safe?**

- When is it important to wash your hands?
- Is the kitchen, work surfaces and food equipment clean?
- How should raw and cooked food be handled and stored?
- How would you know how long these foods last?
- How can you make sure that microbes do not multiply quickly?
- Where should raw meat be kept in a fridge?
- Where should these foods be stored?
- What should you do before you cook?
- Enjoy your food!

**What should you do before you cook?**

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### Nutrition







**Food Groups**

- Fruit and Vegetables.** Aim to eat 5 a day! Dried, frozen and tinned fruit and vegetables count as well as fruit juices.
- Bread, rice, potatoes and other starchy foods.** These are important for giving us energy.
- Milk and dairy foods.** These are important for strong teeth and bones.
- Foods and drinks high in fat and/or sugar.** These are important for helping us grow and build muscles, but you should only eat a little bit!
- Meat, fish, eggs, beans and other non-dairy sources of protein.** These are very important for helping us grow and build muscles.

### The History of bread

The earliest bread was made around 8000 BC in the Middle East, specifically Egypt. The quern was the first known grinding tool. Grain was crushed and the bakers produced what we now commonly recognize in its closest form as chapatis (India) or tortillas (Mexico). The Egyptians were skilled beer brewers and it's thought that their brewing expertise combined with the warm climate, produced the world's first sourdough...through their adding wild yeast to the bread mixture. Romans invented water-milling around 450 BC and as such, they took bread to what was subsequently regarded as an art form. Interestingly, the richer Romans considered whiter bread as higher quality and more suited to the educated and wealthy. In British medieval times, bread baking became a status symbol. The upper classes preferred fine, white loaves, while those of poorer status were left with the rye, bran and coarser breads.

**Key Vocabulary**

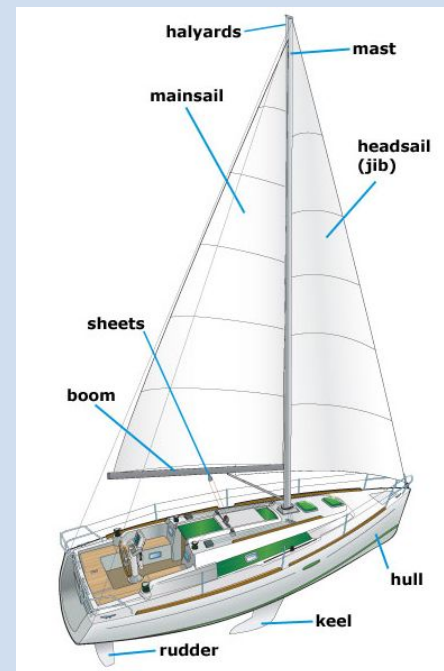
Unpowered/Human powered boats	Unpowered boats include rafts and floats meant for one-way downstream travel.	
Sailboats	These are propelled solely by means of sails.	
Motorboats	These are propelled by mechanical means, such as engines.	
Hull	The main structural component of the boat and provides buoyancy.	
Gunnel	This makes up the sides of the boat, offers protection from water and makes the boat harder to sink	
Deck	The roughly horizontal, chambered structures spanning the hull of the boat.	
Cabin	An enclosed space on a boat is referred to as a cabin.	
Sole	The "floor" of a cabin.	
Bulkheads	The vertical surfaces dividing the internal space.	
Bow	The front (or fore end) of a boat.	
Starboard	The right side (facing forward).	
Port	The left side.	
Streamlined	Designed or arranged in a way that makes movement easier through air or water: a streamlined shape/appearance.	

**A history of boats**

The oldest recovered boat in the world, the Pesse canoe, found in the Netherlands, is a dugout made from the hollowed tree trunk of a Pinus sylvestris that was constructed somewhere between 8200 and 7600 BC. This canoe is exhibited in the Drents Museum in Assen, Netherlands.



Boats have a wide variety of shapes, sizes and construction methods due to their intended purpose, available materials or local traditions.



Human-powered boats include canoes, kayaks, gondolas and boats propelled by poles like a punt. A ship often has several decks, but a boat is unlikely to have more than one, if any. Nearly every boat is given a name by the owner.



**Stitches and their uses**

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Ladder stitch			Primarily used to close seams on stuffed items after the stuffing is added and there is no access to the back of the fabric. It can also be used to repair split seams or to alter clothing.

**Key Vocabulary**

dye	a colored substance that colours a material by chemically bonding to the substrate to which it is being applied
pigment	a colored substance that does not chemically bond to the substrate to which it is being applied
natural	Created from nature (plants, minerals or invertebrates) not chemically produced.
Calico	a type of cotton cloth, typically plain white or unbleached.
Organic	relating to or derived from living matter, produced or involving production without the use of chemicals.
evaluation	Making a judgement about the suitability of the product.
annotate	add notes to (a text or diagram) giving explanation or comment.
closed question survey	Survey with closed-ended questions ie. pre-populated answer choices for the respondent to choose.
components	a part or element of a larger whole, especially a part of a machine or vehicle.
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**Stefano Panconesi (Master Dyer)**



Born in Florence and has a degree in Economic Studies (his graduation thesis was on the marketing of dye plants). He inherited from his father a life-long passion for natural dyeing. For over twenty years has promoted both the industrialization of natural dyeing and organic textiles. Through his own firm PAI and as a free-lance consultant, he has been researching natural dyes, their sources, uses and local traditions. He studied historical recipes and textile materials, and the application of dyeing techniques to the textile industry. He also knows eco-friendly, non-polluting materials and products suitable for industry. As a Global Organic Textile Standard (GOTS) inspector he is an expert in all that concerns the legal aspects of sustainability.

**Natural Dyes**



### Technical knowledge

There are lots of different tools you can use to help you when cooking. Such as:



vegetable peeler



grater



knife

It is important that you use these tools safely, by only using them when an adult is there to help you and show you how to use them safely by holding them properly etc. A recipe may list them as tools you need to help you cook something.

### Key Knowledge

Here are some different types of vegetables. Where do they come from? What is the nutritional value of them?



potato



cabbage



carrot



parsnip



sweet potato



onion



peas



leek



mushroom



broccoli

### A Condensed History of Soup

The word soup derives from the Latin word *'suppa'*, which refers to bread soaked in broth. It was popularised in the 1600s by the French *'soupe'*. The word is also found in Proto-Germanic language as *'sup'*, which means 'to make liquid'.

In Xianrendong Cave, Jiangxi Province, China, the first example of a soup bowl was discovered and thought to date back to 20,000 BC. The ancient pottery showed scorch marks, which would suggest the user was making a hot soup of some kind. While this is the earliest example of a soup bowl, ancient soup makers may have simply dug a pit, lined it with animal skin or gut, filled this "pot" with water and dropped in some hot rocks. The use of hot rocks to boil water was also a known practice amongst Neanderthals.

The Roman Empire brought the recipe of Gazpacho to Southern Spain, where it became a region famous for the dish. They also created Minutal Apician, a traditional wedding soup.

Soup makers in medieval Europe continued develop soups based on a range of ingredients from meats to vegetables. They stuck to the tradition of pouring soups over toasted bread, a practice that was popular in the UK, Germany, and Greece.

In the 14th century, the course of soup changed once again, this time because of fashion! The style during 14th century Europe favoured stiff ruffs around the neck. This made eating soup by lifting the bowl to one's lips difficult. If only there was some way to carry the soup out of the bowl! Enter the soup spoon. Thanks to a change in fashion that persisted for over 200 years, the habit of eating soup with a spoon stuck and today soup spoons are a common sight in restaurants around the world. Speaking of restaurants...

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© World Nutrition Foundation 2005

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**Skills**

**Design:**

- I can use a range of information to inform my design.
- I can justify plans to someone else.
- I can use exploded diagrams to showcase my design.
- I can follow and refine plans.

**Make:**

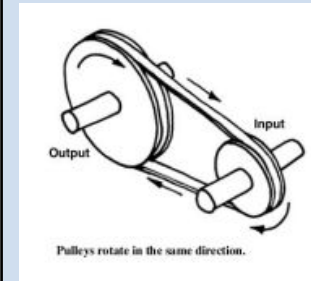
- I can use tools and materials precisely.
- I can make my product attractive and strong.
- I can choose the tools most suitable for the task.
- I can make a product that looks like my plan.

**Evaluate:**

- I can think about the aesthetic qualities of my work.
- I can think about the functionality of my work.
- I can test and evaluate the final product.
- I can say if my product is fit for purpose.
- I can evaluate what would improve it.

**Key Knowledge**

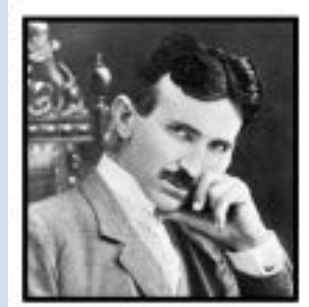
Electricity travels at the speed of light, that's 300 million metres per second! However, the electricity that flows through your home and appliances you use is much slower, about 1/100th the speed of light.



A pulley is a simple machine and comprises of a wheel on a fixed axle, with a groove along the edges to guide a rope or cable. Pulleys are used to reduce the time and energy taken to lift heavy objects.

**Nikola Tesla**

Nikola Tesla was a Serbian American inventor, best known for his contributions to the design of the modern alternating current (AC) electricity supply system. He moved to the United States in 1884 to work for Thomas Edison. They quarrelled and soon Tesla started working on his own with other people investing in his work. He invented the first alternating current (AC) motor and developed AC generation and transmission technology.

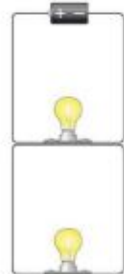
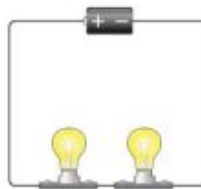


**Key vocabulary**

- Motor
- Battery
- Pulley
- Axle
- Frame
- Strength
- Rigid
- Circuit
- Speed
- Wheel
- Body

**Technical knowledge**

This is a diagram of a series circuit – the electrical current flows through every component in the circuit – the switch, hattery and hulbs.



This is a diagram of a parallel circuit – this has two or more paths for the electrical current to flow through. If one loop is disconnected then the other still has power.

