

Structures - Bridges

Accurate	Neat, correct shape, size and pattern with no mistakes.
Arch bridge	A bridge which is built with a curved arch.
Beam bridge	A bridge which is built with horizontal beams and vertical pillars.
Bench hook	A tool which hooks onto the edge of the workbench. It's used to hold woodwork still when sawing.
Compression	A squashing force caused when parts of a structure are pushed together.
Coping saw	A saw with a narrow D-shaped metal blade, used for cutting curves in wood.
File	A tool used to smooth down rough edges on wood or metal materials.
Mark out	To measure and mark where a piece of material needs to be cut or shaped.
Reinforce	To make a structure or material stronger, especially by adding another material or element to it.
Sand paper	Strong paper with sand on one side to smooth or polish woodwork.
Set square or Try square	A right-angle triangular plate, wood or metal tool used for drawing lines at 90°, 45°, 60°, or 30°.
Shape	The form of an object.
Structure	Something which stands, usually on its own.
Suspension bridge	A bridge which is supported by vertical cables and suspended by cables which run between pillars that are connected onto either end of the bridge.
Tenon saw	A saw with a flat blade, used for cutting wood in straight lines or angles.
Tension	A stretching force caused by two parts of a structure being pulled apart.
Truss bridge	A bridge which is built from a series of triangular beams.

Key facts

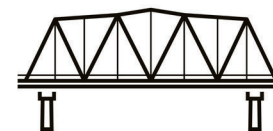
Forces can change the **shape** of objects, they can also make objects begin to move, speed up or slow down.



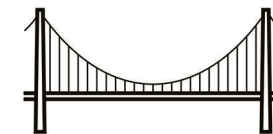
push

pull

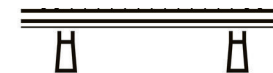
Pulls and pushes are both forces.



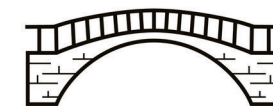
Truss bridge



Suspension bridge



Beam bridge



Arch bridge

Gravity is a force which pulls everything towards the centre of the Earth. The weight of something is the force that the Earth's gravity is having on it.



Textiles - Stuffed toys

Accurate	Neat, correct shape, size and pattern with no mistakes.
Annotate	To add notes to explain your plan or design.
Appendage	Something attached to a larger or more important thing.
Blanket-stitch	A sewing technique that joins two pieces of fabric together.
Design criteria	To help designers focus their ideas and test the success of them.
Detail	The small features of an object.
Evaluation	When you look at the good and bad points about something, then think about how you could improve it.
Fabric	A natural or man-made woven or knitted material, that is made from plant fibres, animal fur or synthetic material.
Sew	To join or fasten by stitches made using a needle and thread.
Shape	The form of an object.
Stuffed toy	A shape of outer fabric sewn together and filled with flexible material. They are also known as plush toys or stuffed animals.
Stuffing	Soft material used to fill cushions and stuffed toys.
Template	A stencil made of metal, plastic, or paper, used for making many copies of a shape or to help cut material accurately (e.g. biscuit cutter).

Did you know?

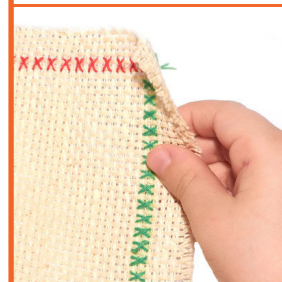
The teddy bear was invented in honour of Theodore Roosevelt, the 26th US President, in November, 1902.



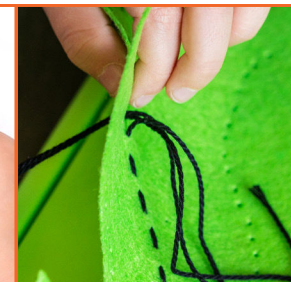
! Be very careful when threading the needle through the fabric, watch your fingers and ask an adult if you're unsure.

Key facts

There are different **techniques** to use in a design such as **cross-stitch**, **running-stitch**, **blanket-stitch** and **appliqué**.



Cross-stitch



Running-stitch



Blanket-stitch



Appliqué a type of textiles work where small pieces of cloth are sewn or stuck in a pattern onto a larger piece.



The **blanket-stitch** is used to reinforce the edge of a **fabric** material or to securely join two pieces of **fabric** together.



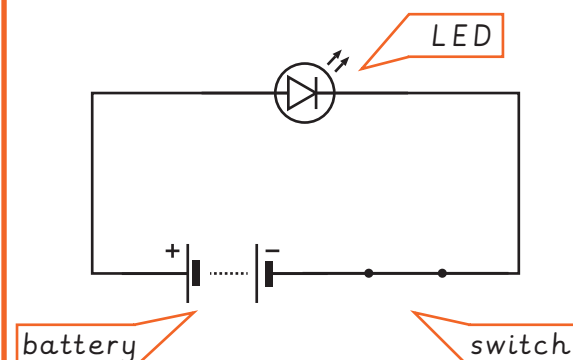
Electrical Systems - Greeting cards

Battery	A cell or connected group of cells which store electrical energy.
Buzzer	A component which makes a loud noise as electricity passes through it.
Circuit	A collection of components which make an electrical system.
Component	One of several parts of which something is made.
Conductor	A material that allows electricity or heat to pass along it or through it.
Copper	A metal material that is one of the best conductors of heat and electricity. It is often used to make wires and pipes.
Design	To make, draw or write plans for something.
Design criteria	To help designers focus their ideas and test the success of them.
Function	How an object or product operates or works.
Graphite	A conductive, black carbon material that is used to make pencil leads.
Innovative	Introducing or using new ideas or ways of doing something.
Insulator	A material that doesn't allow electricity or heat to pass along or through it.
LED	A light emitting diode which lights up as electricity passes through.
Modify	Changing something to improve or fix it.
Parallel circuit	An open circuit where the current follows two or more paths.
Series circuit	A closed circuit where the current only follows one path.
Switch	A component which opens and closes to turn the circuit on or off.
Target audience	A particular group of people who the product is aimed at.
Test	To find out whether something works as it should.
Wire	A conducting material which transfers electricity within a circuit.

Key facts

Electricity needs a complete **circuit** to flow around.
Switches work by closing the gap in a circuit.
Bulbs, cells, buzzers, motors and **switches** are all types of **components**.

Series Circuit Diagram



More circuit symbols

wire	_____
switch open	_____●_____
switch closed	_____●_____●_____

Did you know?



Electricity travels at the speed of light.
 That's more than 186,000 miles a second!

Food - What could be healthier?

Beef	Meat that comes from a cow.
Cross-contamination	Cross-contamination is how bacteria can spread. It happens when liquid from raw meats or germs from unclean objects touch cooked or ready-to-eat foods.
Farm	Land or water used to produce crops or raise animals for food.
Method	Following a process or list of instructions.
Packaging	The packet which holds a product safe, ready to be sold and has information on about the product.
Research	The collecting of information about a subject.
Welfare	The health and happiness of a person or animal.

Key facts

A balanced diet consists of measured amounts of different foods to keep us healthy. Use the **NHS Eatwell Guide** to see how much you should eat from each food group.

The different food groups are **dairy**, **fruits** and **vegetables**, **protein**, **carbohydrates**, **fats** and **sugars**.

Eating the right mix of nutrients will help your body grow and develop, many foods have labels which tell you the amount of each nutrient it has.

It is important to know how to avoid cross-contamination to keep safe when preparing and cooking different foods.

In farming, it is important that the animals are cared for properly during their lifetime. There are ethical rules which ensure that the animals receive a good level of welfare.



Always ask an adult's permission before cooking in the kitchen. Remember to wear an apron and wash your hands.

The Farm to Fork Process



1. Food production
(e.g. animals or plants)



2. Processing
(e.g. factory)



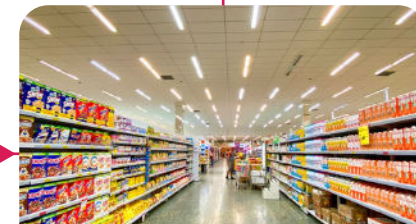
3. Packaging



4. Transport to the shop
(e.g. lorry)



6. Customers purchase
and consume



5. Shop shelves

7. Waste

Mechanical Systems - Pop-up book

Aesthetic	How an object or product looks.
CAD	Computer-aided-design. To use the computer to design a product, diagram or drawing.
Caption	A short piece of writing under a picture that describes or explains the picture.
Design	To make, draw or write plans for something.
Design brief	A description of what you are going to design and make and how it will work.
Design criteria	To help designers focus their ideas and test the success of them.
Exploded-diagram	A diagram which shows all of the parts of a product, including the internal and external parts.
Function	How an object or product operates or works.
Input	Input is the motion used to start a mechanism.
Linkage	A set of bars linked together to form a mechanism.
Mechanism	A system of parts working together.
Motion	The movement an object makes when controlled by an input or output (e.g. left, right, up, down).
Output	Output is the motion that happens as a result of starting the input.
Pivots	A shaft or pin on which something turns.
Prototype	A simple model that lets you test out your idea, showing how it will look and work.
Sliders	A part of a mechanism which allows an object to move from side-to-side (e.g. left-to-right).
Structure	Something which stands, usually on its own.
Template	A stencil made of metal, plastic, or paper, used for making many copies of a shape or to help cut material accurately (e.g. biscuit cutter).

Key fact

Input is the **motion** used to start a **mechanism**. **Output** is the **motion** that happens as a result of the **input**.



Think of a see-saw, when you sit on your side of the see-saw (**input**) your friend goes up on the other side. (**output**)

Did you know?



Did you know that the first children's pop-up books were invented in the 1700s? That's over 300 years ago! Lothar Meggendorfer was a well-known pop-up author in the 1800s.