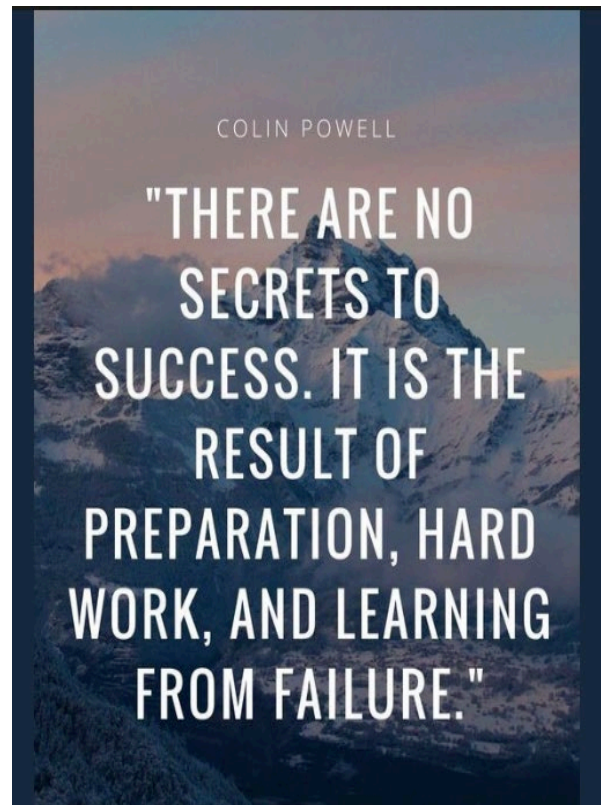
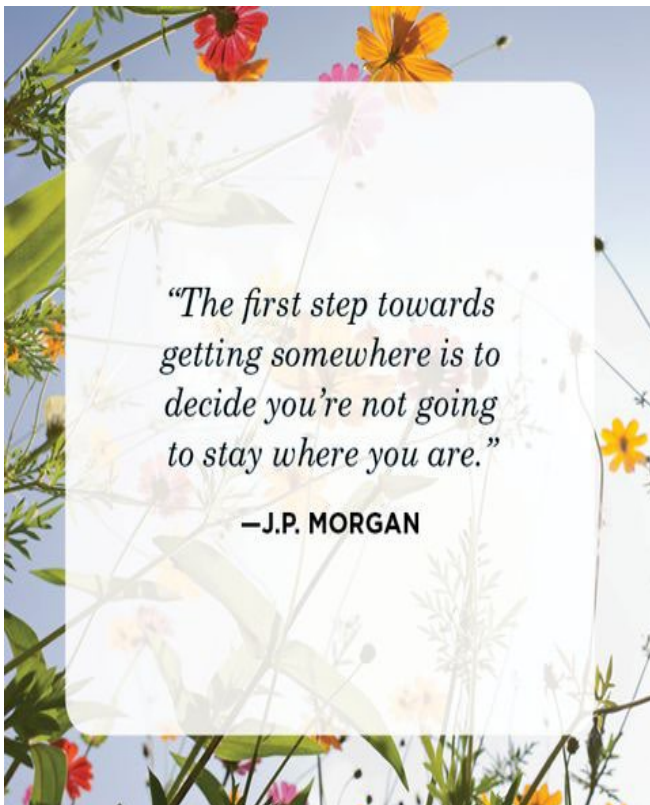




**Year 9**

**Knowledge Organiser**

**Cycle 3 – 2023/24**



# CREATIVE

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- **Art**
- **Drama**
- **Music**

## Cycle 3 in Art will focus on: In the News

### Key vocabulary and definitions

<b>Assemblage</b>	A work of art made by grouping together found or unrelated objects
<b>Combines</b>	A name Rauschenberg gave to his work, which was a combination of painting with collage, found materials and objects
<b>Transfer</b>	A method of transferring a drawing or a printed image to another surface
<b>Photomontage</b>	Photomontage is the process of making an image by cutting and rearranging two or more photographs into a new image.
<b>Collage</b>	Collage describes the techniques of art in which pieces of paper, photographs, fabric, and other materials are arranged and stuck down onto a supporting surface
<b>Texture</b>	Texture is used to describe the way something would feel to touch. You can create different texture by using a variety of mark making
<b>Current news</b>	The latest national and international news
<b>Composition</b>	Composition is the arrangement of elements within a work of art
<b>Printmaking</b>	A impression made by any method involving transfer from one surface to another

It is really important that you spell the art words correctly. Take some time to learn the spellings of these words.

This unit will draw upon skills and knowledge that have been developed in the previous year.

Looking forward to Year 10 this is an opportunity to develop your ideas inspired by the theme 'in the news,' Rauschenberg and an artist of your choice .

The cycle will conclude with a final piece showcasing your own message and your understanding of composition.



# Robert Rauschenberg

Born in Texas, America in 1925

Rauschenberg was both a painter and sculptor.

Rauschenberg was inspired by politics and the world around him at the time



He was also well known for his 'combines' where he combined objects and materials.

He also used techniques such as silk-screen printing and collage to show the world he lived in and what he cared about

He used a juxtaposition of images together, giving the feeling of flickering through TV channels or reading the newspaper, reflecting the many images we see in the media, all of the time.



It is important we develop key knowledge and skills this year so we are ready for the GCSE. Assessment objective 3 is based on annotation – recording your ideas. It makes up ¼ of the GCSE in Art & Design.

**A03 EVIDENCE**

**RECORD**

**PRESENT IDEAS**

**PRIMARY OBSERVATION**

**DRAWING, PAINTING, PRINTING, PHOTOGRAPHY, WRITING, PHOTOGRAPHY...**

**ANNOTATE**

**DIFFERENT MEDIA**

**Your intention:**

It is really important in art that you have the opportunity to express yourself and your own ideas. This project will allow you to develop this skill further.

You will have a choice of current themes: the pandemic or climate change. You will study the work of Rauschenberg and you will have the choice of one other artist, Louis Jover or Mark Powell, to combine your ideas.

Within your work you will communicate a message. How do you feel about your chosen theme? How does it affect you? What do you want to communicate to others within your work?

**Cycle 3 in Drama will focus on developing and devising drama based on different stimuli.**

Key words and definitions	
<b>Audience</b>	The viewers of the performance. Will often find themselves involved in the production.
<b>Conscious Corridor</b>	When actors walk through an alley of other actors saying thoughts and opinions to them, to help their character decide on a situation or a decision they need to make.
<b>Cross Cutting</b>	Two scenes that happen on stage at the same time.
<b>Devising</b>	To create an original performance without the use of scripts.
<b>Flashback</b>	Drama technique of showing events from the past.
<b>Evaluate</b>	The ability to recognise what was successful within a performance as offering areas for improvement.
<b>Hot seating</b>	Questioning characters whilst in role.
<b>Performance</b>	An act of presenting a play, concert or other form of entertainment.
<b>Stimulus</b>	The idea on which the 'Devised' work is based.
<b>Story telling</b>	Delivering a narrative that informs the audience.
<b>Tableaux</b>	A group of models or motionless figures representing a scene from a story or from history.
<b>Thought tracking</b>	A character speaks out loud either their own or another character's thoughts and feelings.

**Tips for creating work:**

- ✓ Be co-operative! (Take part and follow the instructions of your team members)
- ✓ Listen respectfully to others' ideas
- ✓ Share your own ideas and make contributions
- ✓ Stay in your working space
- ✓ Plan your time effectively and structure your rehearsal
- ✓ Think about where your audience will be and rehearse with this in mind
- ✓ Make sure everyone knows what they are doing
- ✓ Practice your transitions (the moments between a scene change)

**How to make a play interesting for your audience:**

Modern plays incorporate a range of different genres, performance styles and structures, each with its own characteristics.

Plays also feature an element of conflict, which does not necessarily mean a fight or argument but instead an obstacle that needs to be overcome.

**When devising a play it is important to know the following:**

Before you start devising you need to think about the context of your play, as context will help with your artistic decisions.

You also need to think about what style you want to use. The style of a play is how the work is presented on stage. This will depend on what genre you are using. The genre of a play refers to the type of story being told.

The structure is how the plot or story of a play is laid out, including a beginning, a middle and an end.

A typical dramatic structure is linear, with events occurring in chronological order. However, if you are going for a non-naturalistic style you could use a non-linear structure, with the action of the play moving forwards and back in time.

This is done through the use of flashbacks and flashforwards, to help make the play more exciting or to highlight points through contrast and juxtaposition.

### What is devising?

Devising is a process in which the whole creative team develops a show collaboratively. You are usually given a stimulus that you use to help inspire ideas to make up your own piece of drama.

Drama techniques are important to help make your piece of drama more interesting to watch. Here are some drama techniques you can use:

#### Ensemble work

Actors working together to create a piece of theatre/drama. All the actors are of equal importance, and have roughly the same amounts of time on stage.

**Ensemble movement** is when all the cast work together to **physically** create one single effect.

This approach to acting aims for an effect which is achieved by all members of the cast working together rather than emphasising individual performances.

#### Conscience Corridor/Alley

This strategy is used at a key point in a drama, and is a way of exploring thoughts of a character. It provides an opportunity to reflect in detail on the underlying issues and dilemmas of a character at that particular moment.

It can be used to:

- Help a character make a decision
- Present different thoughts and feelings going on in a character's mind
- Present the memories of a character.

#### Split scene/Cross Cutting

Split scene is a drama technique borrowed from the world of film editing.

In drama and theatre the term is used to describe two or more scenes which are performed on stage at the same time. They have to respect each other in terms of not flowing over the top of each other.

This can be done through tableaux and mime.

Usually split scenes focus on:

- Two different times
- Two different locations
- Two different opinions

#### Thought Track

Thought-tracking helps inform an audience about a character.

You see it in action when:

- A character speaks out loud about other characters' inner thoughts at a particular moment in the drama.
- A character would usually do this during a freeze frame/still-image.
- There are three different types of thought track:
  - Seeing
  - Hearing
  - Feeling

#### Flashbacks / Flash Forwards

A flashback/forward are when actors perform a scene which take place seconds, minutes, days or years before or after a dramatic moment. This is an explorative strategy to enable the audience (and actors) to know more about a characters' backgrounds, motivations and the consequences of their actions.

Adding Flashbacks or Flash Forwards creates a context and brings depth to a performance. They can be used to show what led up to a particular moment, how it might be resolved or how it may lead onto additional challenges.

Flash backs/ Forwards can be used to show key moments!

**Cycle 3** in Music will focus on: music technology and the development of **electronic dance music (EDM)**. We will also study the musical careers of important producers.

Key words and definitions	
<b>BPM</b>	Beats per minute
<b>Delay</b>	An audio effect that creates an echo
<b>Audio</b>	Sound transmitted as a signal
<b>Panning</b>	Moving sound from one ear to another
<b>Stereo</b>	Two sound sources (e.g. two ears pods)
<b>Reverb</b>	An audio effect that creates ambience
<b>Mixing desk</b>	A device used to balance sound levels
<b>DAW</b>	Digital Audio Workstation Software that enables the composer to create and edit sounds e.g. GarageBand
<b>Synthesiser</b>	An instrument that can produce sounds electronically
<b>Producer</b>	A job role that involves directing musicians through the recording process
<b>DJ</b>	A musician that uses technology such as turntables and cross faders to mix music together

This unit will draw upon skills and knowledge developed in the previous year.

We will develop our ability to understand musical styles and describe the factors that influenced their inception.

These skills will be important for developing your understanding of musical history and will prepare you for further study in KS4.

The cycle will conclude with a knowledge test based on your understanding of electronic dance music and a practical assessment to assess the skills you have developed.

It is really important that you spell the music words correctly. Take some time to learn the spellings of these words.



Mixing desk



Turntable



EDM has also had a strong influence on gaming over the last two decades.

Synthesisers became cheaper and more effective in the 1980s. As a result their popularity with pop and rock bands increased.



House music was developed by DJs in Chicago during the 1980s.



Avicii (1989-2018)

Today there are many sub-genres of EDM including Drum & Bass and Dubstep

Club and rave culture developed throughout the 1990s

Electronic dance music became popular in Europe with techno music developing in Germany

House had a large impact on pop music. Musicians like Madonna and Janet Jackson began to incorporate features of house music into their pop songs.

... Tim Bergling (stage name Avicii) was a Swedish DJ and dance music producer. He had several hit records including *Wake Me Up* and *Hey Brother*. His album *True* peaked at number 2 in the UK charts. Avicii was signed to *Island* records - the same record label that Bob Marley was signed to.

CAREERS: DJ (Disk Jockey)

- Plays recorded music to an audience
- DJs work in a variety of situations including *radio stations, clubs* and *live music events* such as music festivals or weddings.
- A DJ needs strong communication skills and needs to be able to organise a varied playlist and audience.
- Alison Wonderland (right) is a successful DJ in Australia.



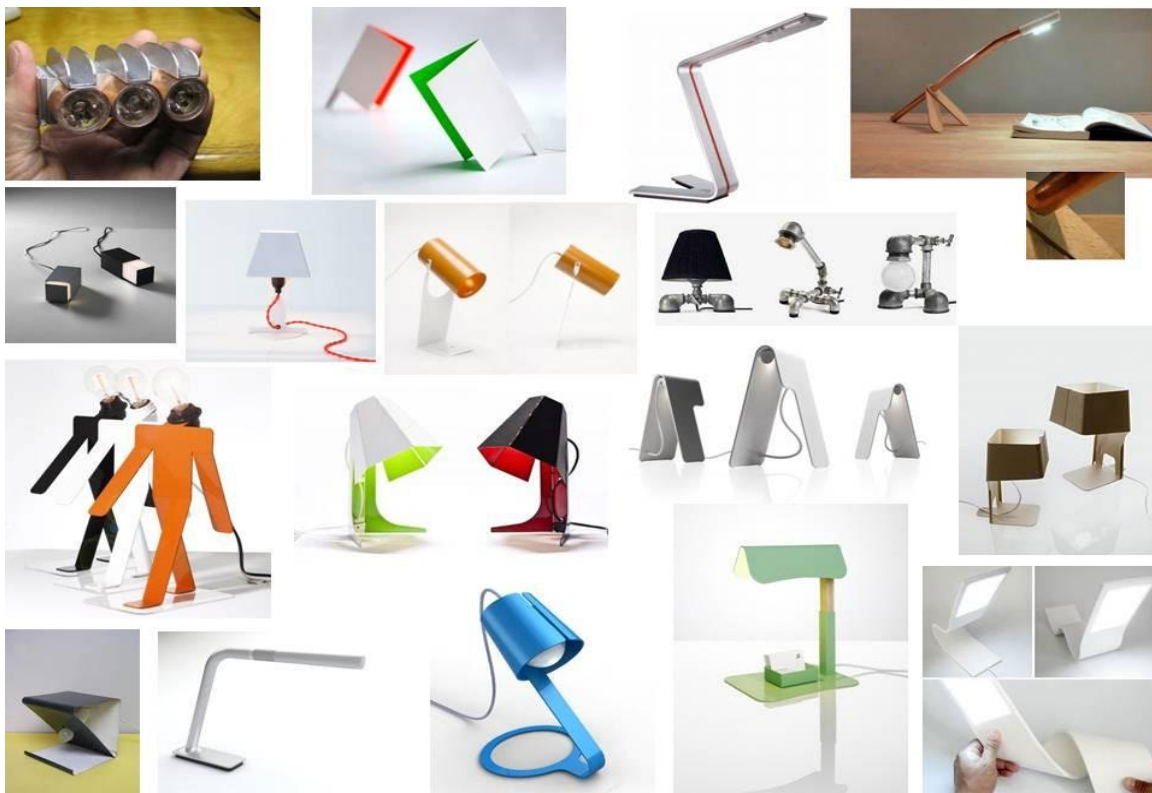


# DESIGN & TECHNOLOGY

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- **Design & Technology**
- **Food & Nutrition**

# Year 9 Cycle 3 – Design and Technology Knowledge Organiser



<b>A</b>	is for	<b>Aesthetics</b>	
<b>C</b>	is for	<b>Cost</b>	
<b>C</b>	is for	<b>Customer</b>	
<b>E</b>	is for	<b>Environment</b>	
<b>S</b>	is for	<b>Size</b>	
<b>S</b>	is for	<b>Safety</b>	
<b>F</b>	is for	<b>Function</b>	
<b>M</b>	is for	<b>Material</b>	

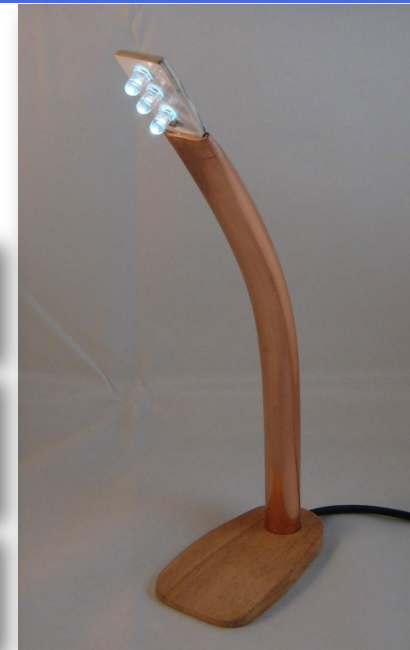
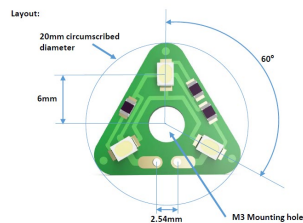
The 3 LED Star is a board designed for low power lighting, such as desk lamps or accent lights.

The board is designed such that it is well within the of the supply rating of a computer USB port (under 100mA)

The triangular shaped PCB has been sized to fit inside a 20mm diameter, and is provided with a single, central mounting hole.



NOTE: Care should be taken when soldering to the + and - pads so that the surface mount LEDs are not inadvertently damaged



## Pipe Bending

Is a metal forming process used to permanently form pipes or tubing into the shape of a die. Straight tube can be formed using a bending machine to create a variety of single or multiple bends and to shape the piece into the desired form. This process can be used to form complex shapes out of different types of **ductile** metal tubing. However, if the metal tube is not bent properly it will collapse leaving the wall of the pipe wrinkled and deformed. When bent the metal is **work hardened**.



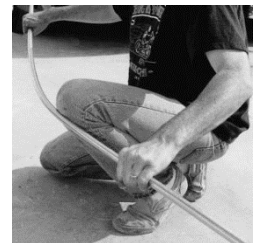
## Rotary benders

Here we can see a hand held rotary bender. You simply place the pipe in the rounded channel. Fit the grooved straight block on the outer edge. Use the lever handles to apply pressure against the straight block. Now continue levering so that it gradually draws the pipe around the circular block, bending the pipe as it goes. Bend to the desired angle, then release the handles to remove the pipe.



## Flexible Springs

The simplest method of bending a pipe is to use a flexible spring inserted into a pipe to support the pipe walls during manual bending. The spring stops the pipe from collapsing inside. They have diameters only slightly less than the internal diameter of the pipe to be bent. The spring is pushed into the pipe until its centre is roughly where the bend is to be. The pipe is generally held against the flexed knee, and the ends of the pipe are pulled up to create the bend. They are less cumbersome than rotary benders, but are not suitable for bending short lengths of piping.



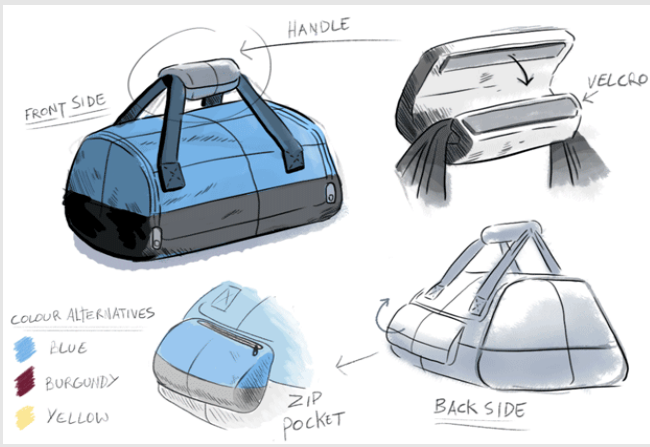
# Communication of design ideas

During this topic you will learn different ways that designs can be communicated and modelled.

## Sketching & Annotation

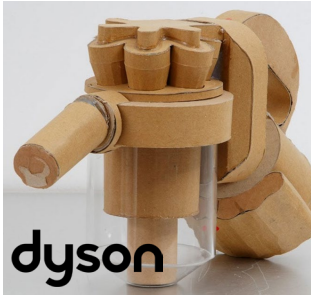
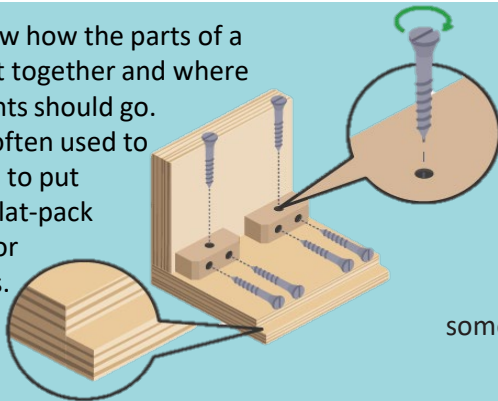
Sketching is a great way of getting initial design ideas down quickly on paper. More detailed sketches can be made for more advanced designs and to specify particular details, such as product dimensions and materials.

Annotation can be added at any point to **show key parts, sizes, materials, components and construction**. The use of shading, colour and different viewpoints can be an easy way of communicating initial ideas.



## Communication techniques

These show how the parts of a product fit together and where components should go. They are often used to show how to put together flat-pack furniture or model kits.



## Computer modelling

Products can be digitally modelled in detail and viewed from any angle. CAD allows for extensive testing under various specific conditions, such as air pressure, forces and temperature, these are called simulations.



## Exploded view

These show how a product can be assembled and how the separate parts fit together, with dotted lines showing where the parts slide into place.

Exploded diagrams can take the place of detailed written instructions, meaning they can explain the construction of something without the barrier of different languages. They are widely used as instructions for self-assembly furniture.

## 3D Modelling

Modelling involves making simplified versions of the design that can be tested against the design specification too see if the basic design concept is likely to work.

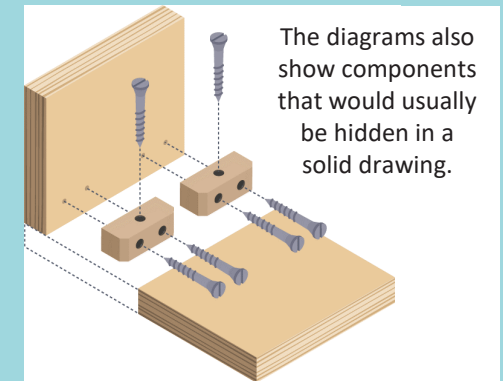
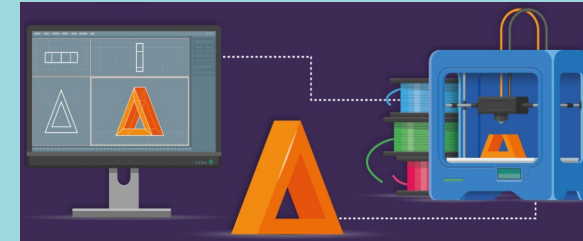
Models should ideally be made of low cost materials that are similar to the materials intended for the final product.

Making a model allows designers to visualise and test how a product looks and performs in 3D.

Prototypes can be full size or a smaller scale version. Materials used include paper, fabric, cardboard, Styrofoam or HIPS.

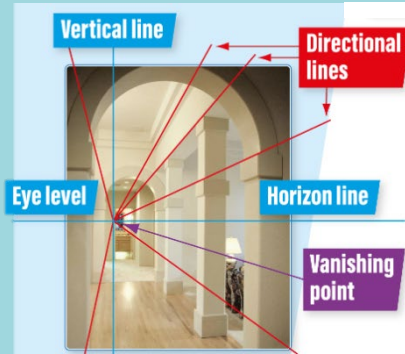
## 3D printing

3D printing is a form of manufacturing using thin layers of a material to build a physical object.



The diagrams also show components that would usually be hidden in a solid drawing.

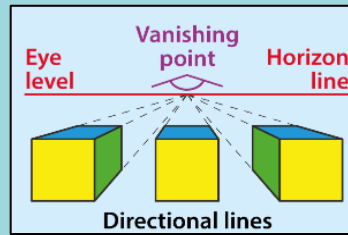
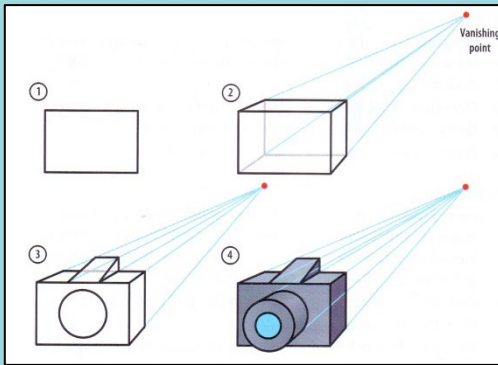
## Perspective drawings



Perspective drawings provide a realistic representation of how objects are seen. As in real life, the further into the distance an object is, the smaller it appears.

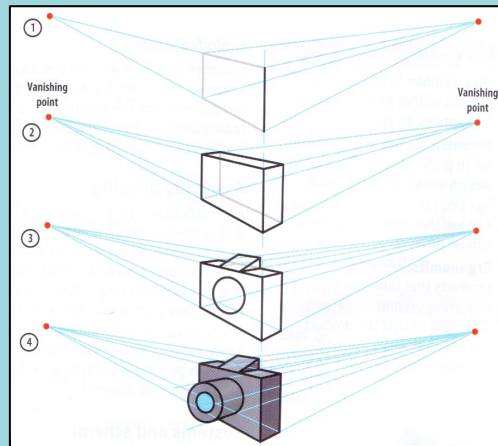
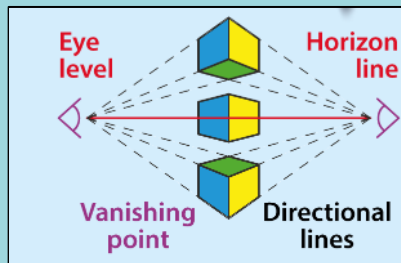
If you stand at one end of a corridor and look down it, you will notice the walls and ceiling appear to converge (meet at a point).

The horizontal, vertical and directional lines can be extended back but will always meet at the vanishing point, which is on the horizon line.



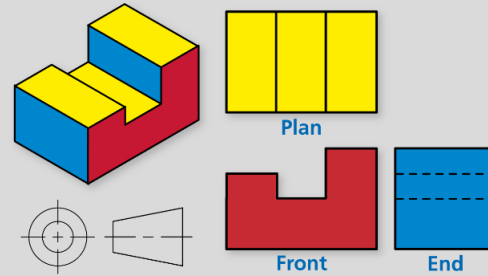
Shows an object as it appears directly in front of the viewer. All lines lead to the one vanishing point.

Provides a more realist view by using two vanishing points on either side of the object.



## Two-point perspective

## Orthographic drawings



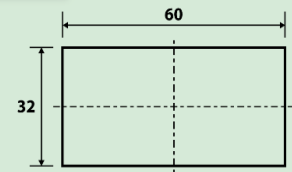
The plan view is drawn at the top, the front view is directly below this and the end view is positioned next to the front view.

Orthographic drawings are often used in manufacturing because they provide detailed information about the design.

### Orthographic Drawing Conventions

Key	
Outlines	—————
Projection/ construction lines	—————
Centre lines	- - - - -
Hidden details	· · · · ·
Dimension lines	←————→

For clarity, lines and dimensions must conform to British Standards.



## Computer Aided Design

CAD is commonly used by designers to **create design ideas, develop and model** 2D and 3D products and manipulate before manufacturing.  
e.g. 2D design, Autodesk Inventor (3D)



## Computer Aided Manufacturing

CAM uses **Computer numerical control (CNC)** to create CAD designs. The CAD software creates coordinates for every part of the design, and the CAM machine then interprets the coordinates to manufacture the design.  
e.g. Laser cutter, 3D printer, CNC router and CNC lathes

Metals are usually produced from rocks mined from the earth, called ore.  
Metals can be divided into two groups - **ferrous metals** and **non-ferrous metals**

## Ferrous Metals

The word ferrous comes from a latin word *ferrum*, meaning iron. Ferrous metals are metals which **contain iron**. Most ferrous metals are prone to **rusting** and are **magnetic**, which are properties of iron.

## Non-ferrous Metals

Non-ferrous metal is a group of metals that **do not contain iron** and are therefore not magnetic and do not rust.

## Metal surface finishes

Prevents corrosion of metals by creating a barrier and enhances the aesthetics (appearance) of metals. E.g. paint, plastic dip coating and lacquering.

During this topic you will learn the types, properties and uses of metals.

Key word	Definition
<b>Hard/ Hardness</b>	The ability to resist deformation, indentation and wear and tear.
<b>Malleable/Malleability</b>	The ability to be pressed or bent into shape, and hold that new form.
<b>Ductile/Ductility</b>	The ability to reshape the metal by stretching.
<b>Thermal conductivity</b>	The ability to transfer heat through the material.
<b>Electrical conductivity</b>	The ability to allow electricity to pass along it.
<b>Tough/Toughness</b>	The resistance to indentation or scratching.

## Alloys

Pure metals are made up from only one chemical element, such as aluminium or copper.









An alloy is a metal which contains more than one metal or non-metal elements. This is usually done to improve the properties of the metal. Alloys can be ferrous or non-ferrous, depending whether they contain iron.

E.g. Brass is a non-ferrous alloy

**Copper + Zinc = Brass**

Stainless steel is a ferrous alloy

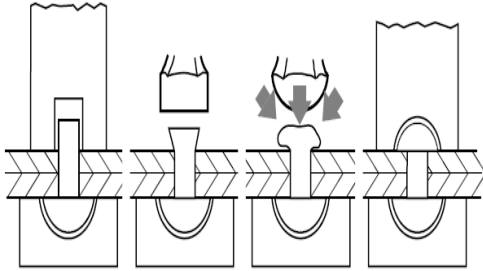
**Iron + Carbon + Chromium = Stainless steel**

Non-ferrous metal	Properties	Ferrous metal	Properties
<b>Aluminium</b> 	Lightweight, corrosion resistant, malleable, tough, high electrical and thermal conductivity.	<b>Cast Iron</b> 	Iron + Carbon (2-4%) Hard skin but brittle, soft core. Good in compression Poor corrosion resistance
<b>Copper</b> 	Tough, corrosion resistant, high electrical and thermal conductivity	<b>Mild Steel (low carbon steel)</b> 	Iron + Carbon (0.25%) Malleable, ductile, tough. Poor corrosion resistance
<b>Zinc</b> 	Corrosion resistant, ductile. Used mainly for plating (covering) metals like steel and iron.	<b>Stainless Steel</b> 	<b>Alloy</b> – Iron + Chromium and other elements. Corrosion resistant Hard, tough.
<b>Brass</b> 	Alloy – Copper, Zinc Corrosion resistant, good thermal and electrical conductivity.	<b>High Speed Steel</b> 	<b>Alloy</b> – Iron + Carbon + Tungsten Brittle, hard.

### Modifying the properties of metals

Annealing is a process that softens metal to make it more malleable and ductile so that it can be worked on again. It involves heating the metal to a specific heat temperature then allowing it to cool slowly. The process can be carried out repeatedly whenever the metal becomes hard and brittle again.

### The riveting process



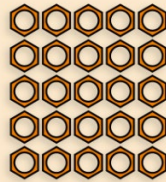
The rivet set is used for setting or pressing together metal plates so that the rivet is pulled all the way into the rivet hole. The hole in the rivet set should be the same diameter as the rivet being used. The rivet snap (dolly) supports the head of a snap or round headed rivet during the process of riveting. A second dolly is used to finish the snap or round head to the correct shape. A combined set and snap incorporates both pieces of equipment in one tool. They are available in a range of sizes to match the rivet's diameter.

### Planning, cutting and shaping

When cutting shapes from materials, try to determine the best way to organise the shapes so that as many as possible can be cut from the least amount of material, here are two examples:

Arrange shape efficiently and close together. Reduces amount of waste material between each shape.











#### Nesting



#### Tessellation

Used for shapes that fit perfectly together with no space between them. Waste material is kept to the edge.

During this topic you will learn new tools for shaping metal and production planning.

1. 	2. 
3. 	4. 
5. 	6. 
7. 	8. 
9. 	10. 

Tool name	Use	Tool name	Use
1. <b>Metal vice</b>	To hold work whilst cutting/ filing.	6. <b>File/s</b>	Removes fine amount of material from work.
2. <b>Hacksaw</b>	Cutting straight lines in metal.	7. <b>Ball pein hammer</b>	Use to shape metal/ or use with centre punch.
3. <b>Tin snips</b>	Cutting straight lines in sheet metal.	8. <b>Steel rule</b>	Measuring material in mm.
4. <b>Dividers</b>	Marking circles or arcs on materials.	9. <b>Centre punch</b>	Make an indent in metal before drilling.
5. <b>Engineers Square</b>	Marking perpendicular lines on a material.	10. <b>Scriber</b>	Use to mark out lines/ design on metal.



## Environmental Health Officer (EHO)

### The EHO



If a business prepares or serves food it must be registered it using either the food business registration service on [GOV.UK](http://GOV.UK) or via the local authority website.

The Environmental Health Officer's (EHO) role is to inspect premises in order to ensure the food a establishment produces is safe to eat.

### FOOD HYGIENE RATING



At the end of their visit, in England, Wales, and Northern Ireland, they will present the establishment with a score from the

Food Hygiene Rating scheme of 0 - 5. The scheme is standardised across England and Wales to maintain a consistent assessment of safety standards. Any business should be able to achieve a "5 - very good" rating.

Scotland has its own equivalent system but will either issue a "pass" or "improvement required" rating.

If an establishment is perceived as high risk, officers will inspect it every 6 months. If it is low risk, EHO officers may visit every 5 years. The risk depends on the type of business (for example, restaurants are higher risk than a shop selling packaged food), and the level of concern a business has caused from past inspections.

## Allergens

Some people may develop an allergy to peanuts or to the gluten in wheat. If they eat foods containing these, they may become very ill, and possibly die.

### The 8 most common food allergies include:

- Cow's milk
- Eggs
- Tree Nuts
- Peanuts
- Shellfish
- Wheat
- Soy
- Fish

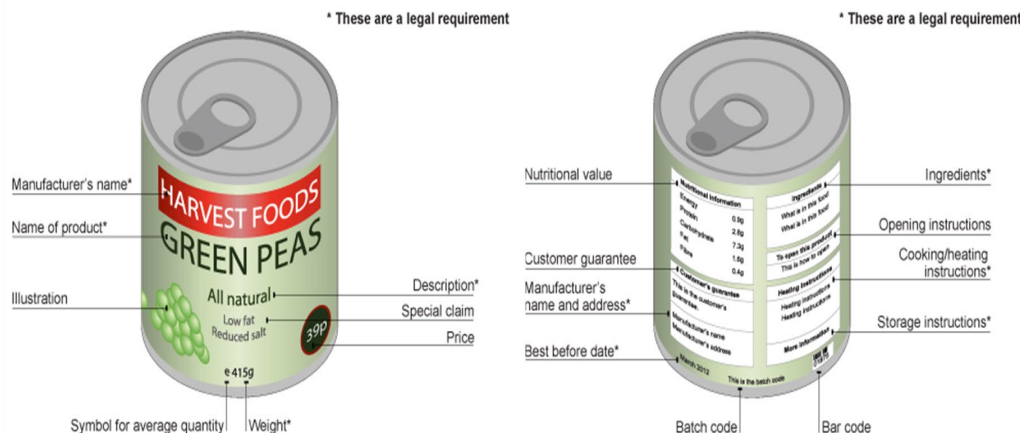


Symptoms can occur anywhere from a few minutes after exposure to a few hours later, and they may include some of the following:

- Swelling of the tongue, mouth or face
- Difficulty breathing
- Low blood pressure
- Vomiting
- Diarrhea
- Hives
- Itchy rash

In more severe cases, a food allergy can cause anaphylaxis. Symptoms, which can come on very quickly, include an itchy rash, swelling of the throat or tongue, shortness of breath and low blood pressure. Some cases can be fatal.

## Food Labelling Regulations (1996)



### COW'S MILK

Milk, Milk powder, Cheese, Butter, Margarine, Yogurt, Cream, Ice cream



### SHELLFISH

Shrimp, Prawns, Crayfish, Lobster, Squid, Scallops

## Food Sources of common allergens

Like a tree nut allergy, peanut allergies are very common and can cause severe and potentially fatal allergic reactions. However, the two conditions are considered distinct, as a peanut is a legume. Nevertheless, those with peanut allergies are often also allergic to tree nuts too. While the reason people develop a peanut allergy isn't known, it is thought that people with a family history of peanut allergies are most at risk.

### TREE NUTS

Brazil nuts  
Almonds  
Cashews  
Macadamia nuts  
Pistachios  
Pine nuts  
Walnuts





## COMMON CAUSES OF FOOD SPOILAGE



### WHAT FOOD SPOILAGE LOOKS LIKE



Odour - break down of proteins (rotten egg smell)



Sliminess - tissue breakdown



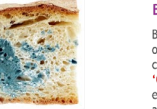
Gas Formation - swollen packaging



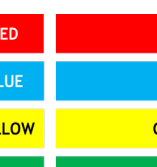
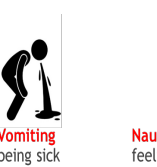
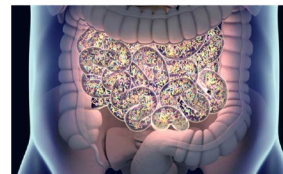
Sourness - production of acid, sour milk



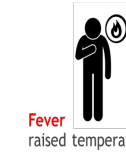
Discolouration - green/blue molds on foods like bread, fruits and vegetables.



**BACTERIA**  
Bacteria are microscopic organisms which are commonly referred to as 'GERMS'. They found everywhere including on and in people, on food, in water, soil and air. Some are good for us, and some are bad!



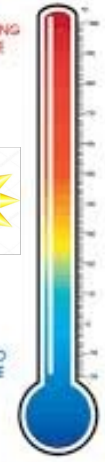
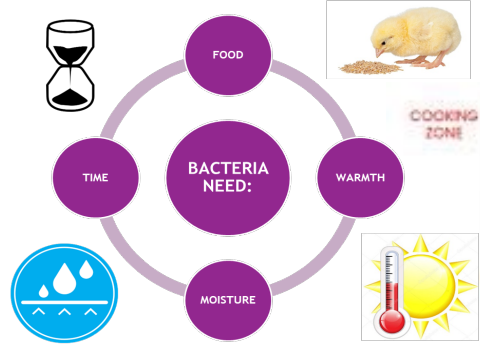
### Symptoms



RED	RAW MEAT
BLUE	RAW FISH
YELLOW	COOKED MEATS
GREEN	SALAD AND FRUIT PRODUCTS
BROWN	VEGETABLE PRODUCTS
WHITE	BAKERY AND DAIRY PRODUCTS



## Bacteria need 4 things to grow:



- 100 °C Boiling Water  
bacteria will be destroyed
- 75 °C Cooking/Reheating
- 63 °C Minimum Hot Holding
- 37 °C Body Temperature  
ideal temperature for bacteria to grow
- 8 °C Food Storage  
store food at this temperature or below
- 5 °C Fridge Temperature
- 18 °C Freezer Temperature  
bacteria won't grow but may not die

All the above temperatures are guidelines only

Food Poisoning Bacteria
Salmonella
Clostridium Perfringens
Staphylococcus Aureus
Campylobacter
E-coli
Listeria
Bacillus Cereus

### AT RISK GROUPS



## Personal Hygiene



# ENGLISH

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Cycle 3 in English will focus on exploring the theme of Diversity. You will study a variety of poets and focus on pivotal poems in order to explore historical and contemporary global issues.

*Key words for analysing language and imagery*

<b>Theme</b>	Repeated ideas within a poem – i.e. love/conflict.
<b>Tone</b>	The mood created in the poem.
<b>Metaphor</b>	A comparison of two things for effect.
<b>Extended metaphor</b>	When a metaphor is developed and continued more than once in the poem.
<b>Personification</b>	When an object/thing is given human characteristics.
<b>Oxymoron</b>	A phrase that contradicts itself.
<b>Connotations</b>	Feelings or ideas associated with a word.
<b>Graphic imagery</b>	Vivid or violent pictures created by words

*Key words for analysing structure*

<b>Form</b>	How a poem is structured or organised on the page.
<b>Stanza</b>	A group of lines (sometimes wrongly called a verse).
<b>Quatrain</b>	Four lines in a stanza
<b>Couplet</b>	Two lines in a stanza
<b>Juxtaposition</b>	Contrasting ideas placed side by side.
<b>Anaphora</b>	When the first word of a stanza is the same across different stanzas.
<b>Volta</b>	A turning point in a poem.
<b>Enjambment</b>	A sentence or phrase that runs onto the next line – no punctuation at the end of a line.
<b>Caesura</b>	Punctuation in the middle of a line.

**Sound is used by poets to mimic and reinforce tone and themes – for example using plosive sounds to create a harsh tone linked to a theme of destruction.**

**When you identify sounds in poems – think: is it harsh, calming, sinister and how does this link to the message of the poem?**

**Combined together, language, structure and sound techniques form layers like an onion that the poet wants the reader to unpeel to reveal the meaning.**

*Key words for analysing sound*

<b>Alliteration</b>	Words beginning with the same sounds (usually same letters).
<b>Sibilance</b>	Repeated ‘s’ sounds in a poem.
<b>Plosive sounds</b>	Repeated ‘p’ and ‘b’ sounds in a poem.
<b>Fricative sounds</b>	Repeated ‘f’ and ‘v’ sounds in a poem.
<b>Meter</b>	Meter is the <u>rhythm</u> of syllables in a line of <u>verse</u> or in a <u>stanza</u> of a poem.
<b>Iambic Pentameter</b>	iambic pentameter is a rhythmic pattern that uses 10 syllables in each line like five heartbeats: da DUM da DUM da DUM da DUM da DUM

Key words and definitions	
<b>Diversity</b>	The practice or quality of including or involving people from a range of different social and ethnic backgrounds and of different genders, sexual orientations, etc
<b>Poetry</b>	Literary work in which the expression of feelings and ideas is given intensity by the use of distinctive style and rhythm.
<b>Spoken Word</b>	Poetry intended for performance.
<b>Racism</b>	Prejudice or discrimination against a person or people on the basis of their racial or ethnic group.
<b>Sexism</b>	Prejudice, stereotyping, or discrimination, typically against women, on the basis of gender
<b>Ageism</b>	Discrimination on the grounds of a person's age
<b>Homogenous</b>	Of the same kind.
<b>Heterogenous</b>	Diverse in character or content.
<b>Collective</b>	Done by people acting as a group.
<b>Individual</b>	Of or for a particular person.
<b>Radical</b>	advocating complete political or social change
<b>Cathartic</b>	Providing psychological relief through the open expression of strong emotions.

How do I annotate a poem?

- To effectively annotate a poem you need to:**
- **Underline** any words you do not understand – you can look them up later.
  - Highlight and label any **linguistic devices**.
  - Write down the effect of these devices.
  - Ask yourself: is there anything interesting about the structure of this poem?
  - Note down any **images** that are created in your head.

How do I analyse a poem?

- To successfully analyse a poem think about:**
- **The language:** are there any linguistic devices? Who point of view is the poem written – 1<sup>st</sup> or 3<sup>rd</sup> person? What themes and overall ideas are present in the poem – which words portray this?
  - **The structure:** Does the poem have a rhyme scheme? Does it use enjambment? How many stanzas are there? Does the poem have a rhythm when you read it?
  - **How does the poem make you feel?** What is the overall tone?
  - **What is the poet’s message?** What is the poet trying to say about the subject they are discussing?

# HUMANITIES

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- **Geography**
- **History**
- **RE**

Cycle 3 in Year 9 Geography will focus on the topic of global issues. You will look at a variety of issues that are affecting people and environments today around the world answering the enquiry question – are human actions damaging the environment?

Global issue: E-waste

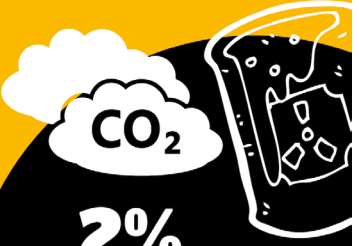
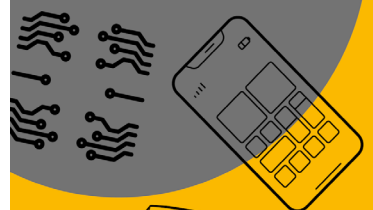
# E-WASTE STATS

that you need to know...

**50**  
million tonnes of e-waste created globally.\*



**26%**  
of which was estimated to be created by the IT industry in 2018.\*



**2%**  
of the world's CO2 production is created through IT development.\*\*

By 2040, this number is expected to reach\*

**14%**

**70%**  
of hazardous landfill waste originates from precious metals and rare materials found in IT products.\*

Something has to change.  
Make a difference with IT.  
[alinternetworks.com](http://alinternetworks.com)

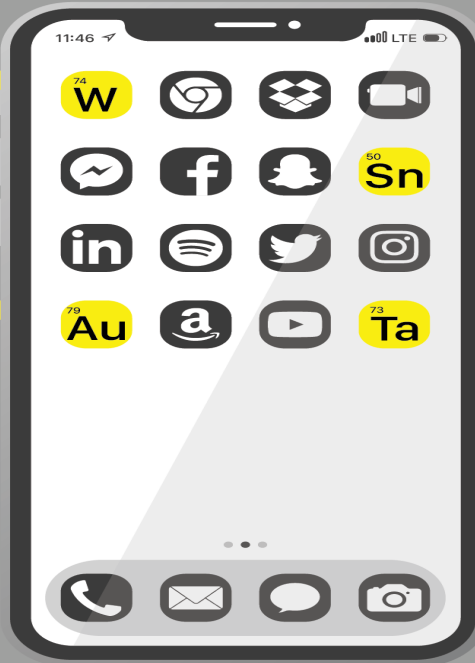
The **Tragedy of the Commons** describes a situation where shared resources are overused, and eventually depleted, posing risks to everyone involved.

You can thank **tungsten** for keeping your phone cool with its role in heat sinks, as well as quiet thanks to its use in vibrator components.

Because of its efficient electrical conductivity and resistance to corrosion, **gold** is used in connectors, switch and relay contacts, connecting wires and strips, and soldering joints.

Global issue:

Conflict minerals and mobile phones



Nearly all electronics use **tin** in solder to protect components from corrosion.

**Tantalum** is used for capacitors as well as in Surface Acoustic Wave (SAW) filters to improve audio quality.

**E-waste:**  
Electronic waste or e-waste describes discarded electrical or electronic devices



**WARNING**

**MAY CONTAIN CHILD LABOUR**

IS YOUR SMART PHONE HUMAN RIGHTS SMART?

**AMNESTY INTERNATIONAL**

\*Source: A New Circular Vision for Electronics (PACE; WEF, 2019). \*\*Approximate. Source: Assessing ICT global emissions footprint: trends to 2040 & recommendations (Journal of Cleaner Production: Lofti, B, Ahmed, E, 2017).

Global issue:  
Pollution

Types of Pollution

ScienceFacts.net



Air Pollution



Water Pollution



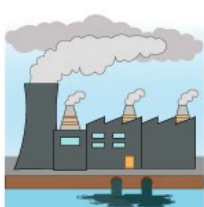
Soil Pollution



Light Pollution



Noise Pollution



Thermal Pollution



Radioactive Pollution

Global issue:  
Sustainability

**Sustainability**  
[sə-ˈstā-nə-ˈbi-lə-tē]

The ability to maintain or support a process continuously over time.

Investopedia

Global issue:  
Plastic Pollution

Plastic Can Take 500 Years To Bio-Degrade In The Ocean

Estimated number of years for selected items to bio-degrade in a marine environment\*



\* Exact time varies by product type and marine conditions. Cigarette butts and grocery bags are an upper estimate.  
@StatistaCharts Sources: NOAA, Woods Hole Sea Grant

statista

A Few Facts About Plastic Pollution

Enough plastic is thrown away each year to circle the Earth **4 times!**

**ONE MILLION** sea birds & 100,000 marine mammals are killed annually from plastic in our oceans

**35 BILLION** plastic water bottles are thrown away every year

Plastic constitutes approximately **90%** of all trash floating on the ocean

The average American throws away approximately

**185 LBS**

of plastic per year.

**50%** of the plastic we use, we use **JUST ONCE** and throw away.

Facts found on ecowatch.com

Global issue:  
Overfishing

**OVERFISHING**  
is the reduction in fish numbers in a body of water due to excessive fishing.

**17%** of fish stocks are currently overexploited

**52%** are fully exploited

**7%** are depleted

**24%** are not yet at full capacity

Source: United Nations

## Cycle 3 in History will focus on: Afghanistan

In this unit you will learn about Afghanistan, focusing on how foreign intervention has shaped Afghanistan from the mid-1800s to the present day.

Key words / events and definitions	
<b>Ethnic</b>	Relating to a population subgroup (within a larger national group) with a common cultural or national tradition
<b>Hierarchy</b>	A system in which members of society are ranked according to status or authority.
<b>Nomadic</b>	Living the life of a nomad, wandering.
<b>Bazaar</b>	A market in a Middle Eastern country.
<b>Emir</b>	Commander or general.
<b>Shah</b>	King or ruler of a country.
<b>Reform</b>	Make changes in order to improve it.
<b>Communism</b>	Political belief with no private ownership.
<b>Constitution</b>	Set of rules leaders need to stick by.
<b>Islamist</b>	A supporter of Islamic militancy or fundamentalism.
<b>Fundamentalism</b>	A form of religion that sticks strictly to what is written in their holy book e.g. Christians- the Bible, Muslims - the Quran.
<b>Mujahideen</b>	Islamist rebel groups that fought against the Soviets in Afghan-Soviet
<b>Coup</b>	A violent seizure of power.
<b>Taliban</b>	Fundamentalist Islamic militia group.



### Key Facts

**1838-42:** British forces invade, install King Shah Shujah. He is assassinated in 1842. British and Indian troops are massacred during retreat from Kabul.

**1878-80:** Second Anglo-Afghan War. A treaty gives Britain control of Afghan foreign affairs.

**1919:** Emir Amanullah Khan declares independence from British influence.

**1953:** General Mohammed Daud becomes prime minister. Turns to Soviet Union for economic and military assistance. Introduces social reforms, such as abolition of purdah (practice of secluding women from public view).

**1973:** Mohammed Daud seizes power in a coup and declares a republic. Tries to play off USSR against Western powers.

**1978:** General Daud is overthrown and killed in a pro-Soviet coup. The People's Democratic Party comes to power but is paralysed by violent infighting and faces opposition by US-backed mujahideen groups.

**1979:** December - Soviet Army invades and props up communist government.

**1985:** Mujahideen come together in Pakistan to form alliance against Soviet forces. Half of Afghan population now estimated to be displaced by war, with many fleeing to neighbouring Iran or Pakistan.

**1989:** Last Soviet troops leave.

**1996:** Taliban seize control of Kabul and introduce hard-line version of Islam, banning women from work, and introducing Islamic punishments, which include stoning to death and amputations.

**2001:** September - Ahmad Shah Masood, leader of the main opposition to the Taliban - the Northern Alliance - is assassinated.

**2001:** October - US-led bombing of Afghanistan begins following the September 11 attacks on the United States. Anti-Taliban Northern Alliance forces enter Kabul shortly afterwards.

**2005:** September - Afghans vote in first parliamentary elections in more than 30 years.

**2009:** March - US President Barack Obama unveils new strategy for Afghanistan and Pakistan. An extra 4,000 US personnel will train and bolster the Afghan army and police and there will be support for civilian development.

**2011:** January - President Karzai makes first official state visit to Russia by an Afghan leader since the end of the Soviet invasion in 1989.

**2013:** June - Afghan army takes command of all military and security operations from NATO (North Atlantic Treaty Organisation) forces.

**2017:** August - US President Donald Trump says he's sending more troops to fight a resurgent Taliban.

**2019:** September - Protracted peace talks between the Taliban and the United States break down.

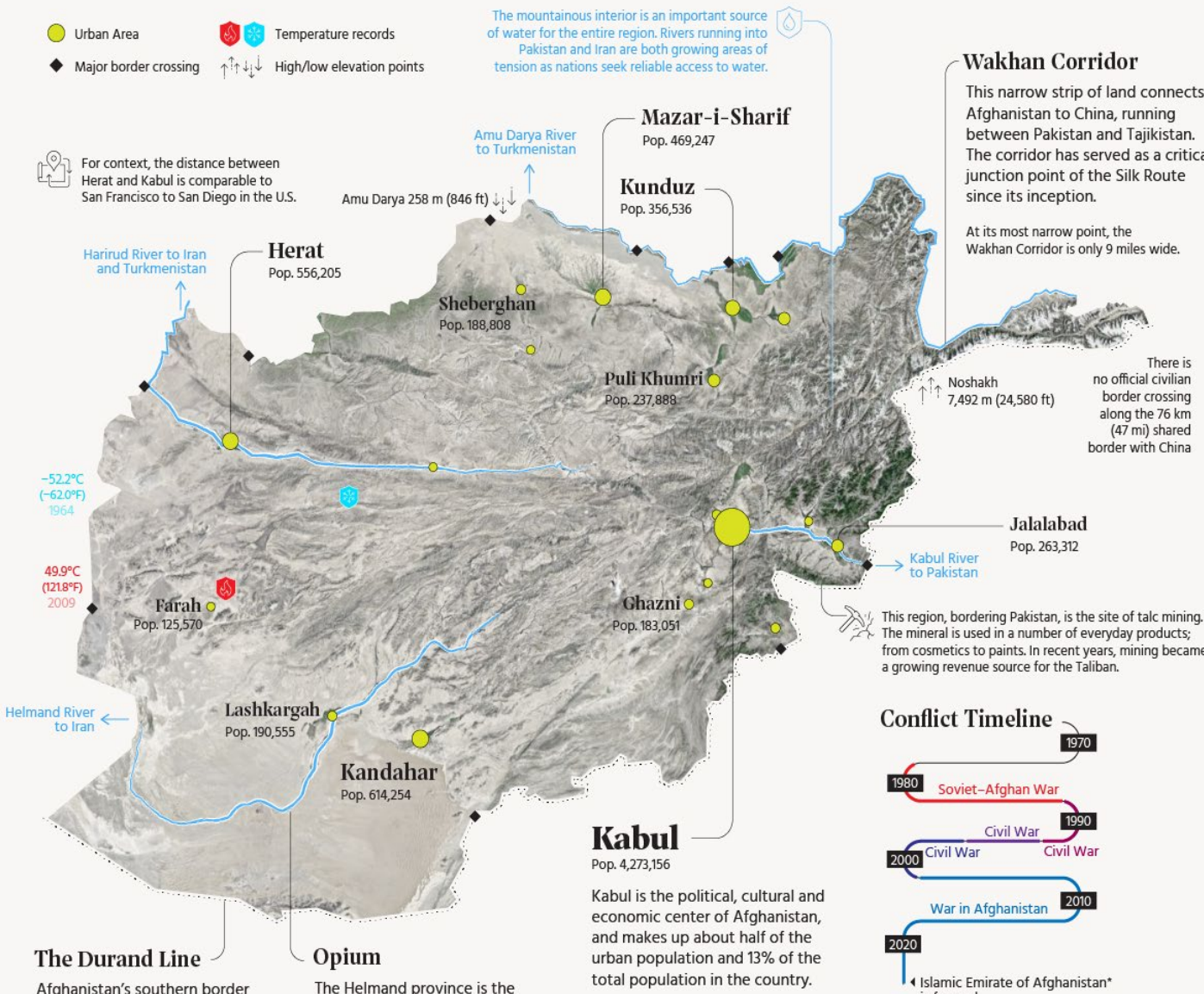
**2021:** United States and other NATO forces leave Afghanistan after twenty years. The Taliban return to power.





# Afghanistan

GDP (nominal)	\$19.9B	117 of 195	Land Area	652,864 km <sup>2</sup> (252,072 sq mi)
Population	32,890,171	43 of 195	Pop. Density	48/km <sup>2</sup> (125/sq mi)



### Wakhan Corridor

This narrow strip of land connects Afghanistan to China, running between Pakistan and Tajikistan. The corridor has served as a critical junction point of the Silk Route since its inception. At its most narrow point, the Wakhan Corridor is only 9 miles wide.

### Conflict Timeline



### The Durand Line

Afghanistan's southern border was established in the late 19th century as a buffer zone between British and Russian interests in the region.

### Opium

The Helmand province is the center of opium production in the country. Opium has traditionally been a major revenue source for the Taliban.

### Kabul

Kabul is the political, cultural and economic center of Afghanistan, and makes up about half of the urban population and 13% of the total population in the country.

\*Unrecognized by any government as of August 17, 2021



Key Ideas



**What is the First cause?**

The cosmological argument is an attempt to prove the existence of God by the fact that things exist. It assumes that things must have a cause, and that the chain of causes can only end by a supernatural event. ... The first cause is claimed to be God.



**What is the Design Argument?**

Some Christians believe that it is possible to prove the existence of God by observing the nature of the world we live in. The world shows signs of ORDER and things working to achieve a PURPOSE. This, they believe, is evidence of DESIGN. In other words, God is the DESIGNER of an ordered and purposeful world. William Paley supported this argument by way of ANALOGY. He drew a similarity between the world and an old-fashioned pocket watch. He argued that if you went for a walk and stumbled across a pocket watch in a field you would know that a skilful watchmaker must have designed it. Similarly, he believed that the world shows evidence of order and purpose which must have a designer. This designer must be God.

Problem: If the world is designed by an omnipotent God, then why is there so much evil and suffering in the world?

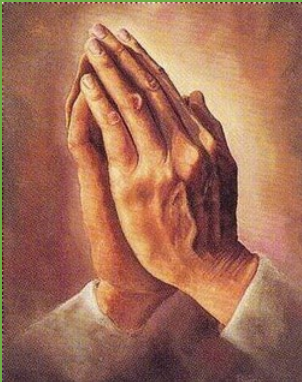


**Why does evil and suffering exist**

The existence of evil and suffering is a significant problem for religious people who have tried to understand and explain their presence.

If someone is not religious, then evil is just part of our world and has to be accepted - there is nothing we can do about it. However, for religious people there are significant questions:

- Religions such as Christianity claim that God made everything. Does that mean He also made evil?
- Religion teaches that God is good, so why does God allow evil to exist?
- If God is powerful enough to create the world, why does He not stop evil and suffering? Is He not powerful enough?
- If God is all powerful, does that mean He does not love us enough to stop evil and suffering?
- If evil exists, does God really exist?



**What are religious experiences**

Religious experience, specific experience such as wonder at the infinity of the cosmos, the sense of awe and mystery in the presence of the sacred or holy, feeling of dependence on a divine power or an unseen order, the sense of guilt and anxiety accompanying belief in a divine judgment, or the feeling of peace that follows faith in divine forgiveness. Some thinkers also point to a religious aspect to the purpose of life and the destiny of the individual.

**Scientific truth vs Religious truth**

Scientific truths focus on “what” and “how” questions.

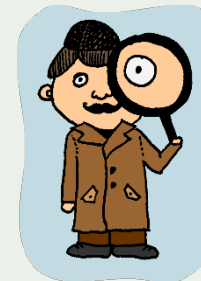
It relies on observation and testing of hypotheses.

However, religious truths tend to focus on “why” questions.

It relies on belief and information from Holy Books to support it.

However, religious truths tend to focus on “why” questions.

It relies on belief and information from Holy Books to support it.



Key words / events and definitions	
<b>First cause</b>	An argument for the existence of God that God was the first part in a chain reaction which set about the beginning of the world.
<b>Atheism</b>	Believing that God does not exist
<b>Omnibenevolent</b>	The belief that God is all-good
<b>Omnipotent</b>	The belief that God is all-powerful
<b>Omniscient</b>	The belief that God knows everything that has happened and everything that is going to happen.
<b>Free will</b>	The idea that humans are free to make their own choices
<b>Miracle</b>	Something which seems to break a law of science and makes you think only God could have done it
<b>Moral evil</b>	Actions done by humans which cause suffering
<b>Design argument</b>	The universe seems to be designed. Anything that is designed must have a designer. Therefore God must exist because only God could have designed the Universe.
<b>Natural evil</b>	Things which cause suffering but have nothing to do with humans

## Arguments against the existence of God:

### *The Big Bang Theory and Evolution*

The **Big Bang theory** is a scientific approach to answering the question of how the world began. In answering this question, the Big Bang theory removes the need for a creator.

Put simply, the theory states that around 14 billion years ago all matter and energy in the universe was at a point of infinite density and temperature. It then expanded rapidly. Eventually stars, galaxies and planets formed. This expansion was the beginning of time and continues to this day.

The Big Bang theory is supported by evidence that space is expanding, including the redshift of light from distant galaxies and the existence of cosmic background radiation in all directions.

### Evolution

In 1859 Charles Darwin published a book called *On the Origin of Species*. This book was based on his studies of creatures he had encountered on his travels to many overseas locations, including the Galapagos Islands. He put forward the theory that all living creatures that exist today, including human beings, have evolved from primitive life forms over a period of millions of years.

# ICT

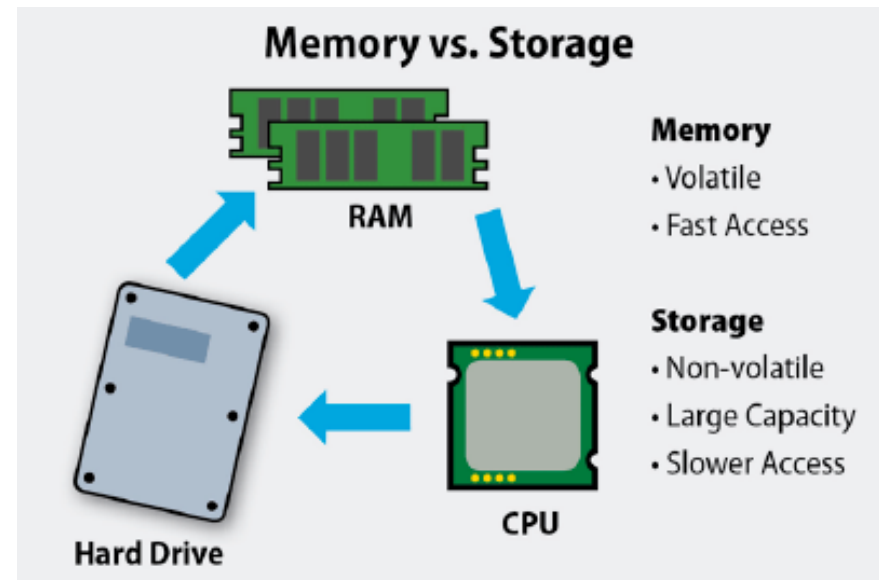
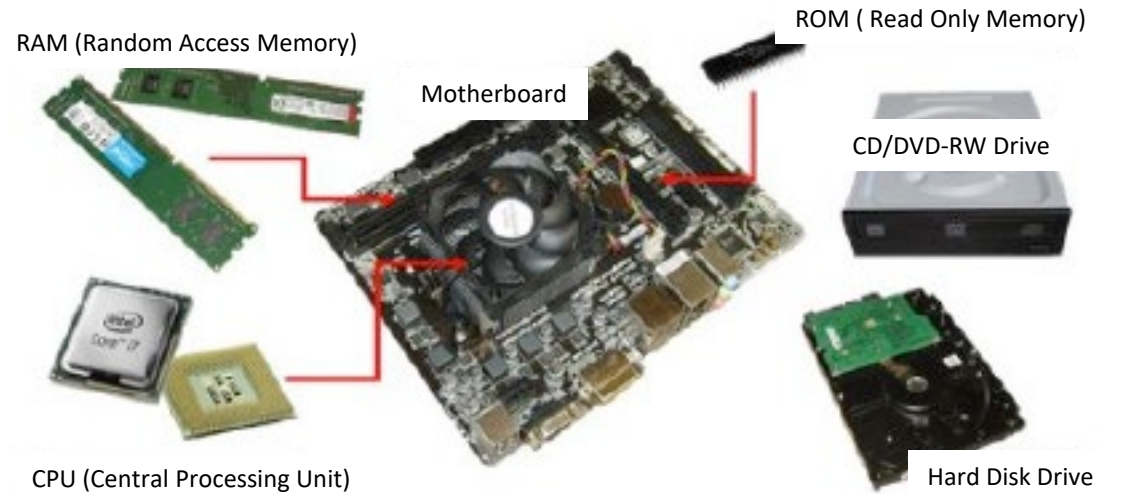
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# Cycle 3 in Computer Science will focus on computer systems, hardware, software and binary language

## Key words and definitions

<b>Computer system</b>	A computer system is a set of integrated devices that input, output, process, and store data and information.
<b>Input devices</b>	A device used for inputting data into a computer system, e.g. mouse, keyboard, camera, scanner.
<b>Output devices</b>	A device used for outputting data from a computer system, e.g. printer, speakers, monitor, headphones.
<b>Peripherals</b>	A peripheral device connects to a computer system to add functionality. Examples are a mouse, keyboard, monitor, printer and scanner.
<b>CPU</b>	Stands for <b>central processing unit</b> . It is referred to as the brains of the computer. It carries all calculations to run the computer system.
<b>Storage</b>	This hardware component stores all data for the computer system. There are two types of storage, they are volatile and non-volatile.
<b>Embedded systems</b>	An integrated controller in a mechanical system that is designed to run limited specific functions, e.g. washing machine, microwave, TV remote.
<b>Binary code</b>	The language of computers, uses 0 and 1 to represent every character and instruction for a computer to carry out.
<b>Operating System</b>	The software that supports a computer's basic functions.

## Internal components of a computer system:



	Memory	Storage
What is it?	This is a temporary storage location for data ready to be used	This is where data is stored long term to be used in the future
Examples	RAM (random access memory)	Hard drive, DVDs, USB stick



**Embedded Systems:** This is a computer system designed to perform only a small number of specific functions. They don't need an operating system (e.g. windows) to run. They can be found in many household devices, for example, washing machine, vacuum cleaner, iron, microwave etc.

Advantages	Disadvantages
Easier to design and cheaper to produce	The software cannot be upgraded – needs to be replaced
More reliable as they only have a single task to do	If something goes wrong with the programming, they can be difficult to fix

Converting binary code

Write out the binary number into the below grid.

<b>128</b>	<b>64</b>	<b>32</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>

Where there is a 1 in the bottom box add up the numbers in the top box. The sum of these numbers is the converted denary number.

128 64 32 16 8 4 2 1

1 0 0 1 1 0 1 1

---

128 + 0 + 0 + 16 + 8 + 0 + 2 + 1

= 155

wikiHow to Convert from Binary to Decimal

# LANGUAGES

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- **French**
- **Spanish**

**Learning Cycle 3 is about celebrations. You will revise past, present, future and the perfect tense and learn to describe a special day. You will also revise food and drinks and describe clothes.**

**Key words and definitions**

<b>Subject pronouns</b>	Je (I), tu (you), il / elle (he / she), nous (we), vous (you plural), ils/ells (they M / they F)
<b>Nouns</b>	Used to identify a class of people, places or things
<b>Adjectives</b>	Used to describe a noun
<b>Adjectival agreement</b>	In French, adjectives endings have to change according to the noun they describe
<b>Comparatives</b>	Used to compare things. They make descriptions more interesting e.g. X is smaller than Y
<b>Verbs</b>	A word used to describe an action, state or occurrence, and forming the main part of the predicate of a sentence (such as hear, become, happen)
<b>To conjugate</b>	To change the ending of a verb so it fits in a sentence
<b>Infinitive</b>	A verb in its unchanged form / a verb which can be found in a dictionary / a verb which has an ER, IR or RE ending in French (jouer) / a verb which has 'to' in front of it in English (to play)
<b>Present tense</b>	Used to say what someone is currently doing (I do / I play)
<b>The near future tense</b>	Used to talk about what someone is going to do in the future (I am going to play football)
<b>The past tense</b>	Used to talk about a completed action which took place in the past

**Regular -er, -ir, -re verbs**

infinitive	present tense		perfect tense	future tense	imperfect tense
<i>regarder</i> to watch	je regarde tu regardes il/elle/on regarde	nous regardons vous regardez ils/elles regardent	j'ai regardé	je regarderai	je regardais
<i>finir</i> to finish	je finis tu finis il/elle/on finit	nous finissons vous finissez ils/elles finissent	j'ai fini	je finirai	je finissais
<i>vendre</i> to sell	je vends tu vends il/elle/on vend	nous vendons vous vendez ils/elles vendent	j'ai vendu	je vendrai	je vendais

**Translation tip:**  
DO NOT TRANSLATE "I HAVE +FOOD" WITH "J'AI" USE "JE PRENDS + FOOD"

**When to use du, de la, de l', des or just de and when to use le, la, les**

Ecrivez 8 phrases dans vos cahiers

- J'aime
- Je n'aime pas
- Je préfère
- Je déteste
- Mon frère adore
- Mes parents aiment
- Tu aimes .....
- Je ne sais pas si j'aime

- le chocolat
- le sucre
- le pain
- le vin
- le yaourt
- la confiture
- la bière
- la glace
- les fruits
- les frites
- les bananes
- les épinards
- les saucisses
- les huîtres
- les cuisses de grenouille



**Rule:**  
When talking about likes, dislikes and preferences, use **le, la, les**



**Les verbes modaux**

**Vouloir - to want**

Ex. : Je veux voir un film - I want to watch a movie

**Pouvoir - to be able to**

Ex. : Je peux sortir - I can go out

**Devoir - to have to / must**

Ex. : Je dois faire les devoirs - I must do the homework

Vouloir	Pouvoir	Devoir
Je veux	Je peux	Je dois
Tu veux	Tu peux	Tu dois
Il / Elle / On veut	Il / Elle / On peut	Il / Elle / On doit
Nous voulons	Nous pouvons	Nous devons
Vous voulez	Vous pouvez	Vous devez
Ils / Elles veulent	Ils / Elles peuvent	Ils / Elles doivent



je porte / je mets...

il porte / elle met...



Un jean slim



Un tee-shirt



Un sweat



Une robe



Une veste



Une jupe



Une chemise



Des baskets



Des chaussures



noir



gris



bleu



rouge



vert



jaune



orange



blanc



violet



rose

masc

fem

Fem plural

noire

grise

bleue

rouge

verte

jaune

orange

blanche

violette

rose

noires

grises

bleues

rouges

vertes

jaunes

orange

blanches

violettes

roses

décontracté(e)  
large  
slim  
foncé  
clair

confortable  
inconfortable  
élégant(e)

branché(e)  
démodé(e)

sportif(ve)  
pratique  
ringard(e)

joli(e)  
beau  
belle  
moche

aussi

et

avec

Time phrases + accurate tense

D'habitude = usually

De temps en temps = from time to time + present tense

Quelquefois = sometimes

Hier midi = yesterday lunchtime

Hier soir = last night/yesterday evening + past tense

Le week-end dernier = last weekend

Le week-end prochain = next weekend

Ce soir = this evening + future tense

Demain soir = tomorrow evening

The partitive article (du, de la, de l' or des) means 'some'.

de + le = du      de + l' = de l'  
de + la = de la      de + les = des

Aiming Higher



Opinions and reasons

J'aime ça parce que c'est délicieux.  
Je déteste les fruits car c'est dégoûtant.  
J'adore Noël puisque c'est une fête familiale

Opinion phrases



Pour moi ...  
A mon avis ...  
En ce qui me concerne ...  
Je pense que ...  
Je trouve que

Opinions in different tenses

C'était top !  
C'était nul!  
Ça va être formidable !  
Ça va être ennuyeux....  
C'est merveilleux !

**Learning Cycle 3 is Desconéctate – talking about holidays.  
Use these keywords and phrases alongside your Learning Cycle Vocabulary.**

Key words and definitions	
<b>Opinion verb</b>	Verbs which express likes or dislikes e.g. me gusta
<b>Infinitive</b>	A verb in its unchanged form / A verb which can be found in a dictionary / A verb which has an AR/IR/RE ending in Spanish (jugar) / A verb which has 'to' in front of it in English (to play)
<b>Present tense</b>	What I do now
<b>Past tense</b>	What I did
<b>Simple future</b>	What I am going to do
<b>Immediate future</b>	What I will do

Past	Present
<p><u>Preterite Tense:</u> <i>Fui a (I went to...)</i></p> <p><u>Imperfect tense:</u> <i>Iba a Blackpool (I used to go to Blackpool)</i></p>	<p><i>Voy a ... (I go to ...)</i></p>
	<p><b>Future</b></p> <p><u>Near Future:</u> <i>Voy a ir a Cuba (I am going to go to Cuba)</i></p> <p><u>Simple Future:</u> <i>Iré al extranjero (I will go abroad)</i></p>

Reminder of tenses ending ( I-form ) Regular verbs

**Present:** remove ending add -o

**Preterite:** remove -ar ending and add -é; remove -er/ir ending add -í

**Imperfect:** remove -ar ending and add -aba; remove -er/ir ending and add ía

**Near Future:** voy a + infinitive

**Conditional:** infinitive+ía

Grammar: Verb Tables

PRESENT

	(I)	(you)	(he/she/it)	(we)	(you pl)	(they)
-AR →	o	as	a	amos	áis	an
- ER →	o	es	e	emos	éis	en
- IR →	o	es	e	imos	ís	en

Slightly "Irregular" Verbs

	(I)	(you)	(he/she/it)	(we)	(you pl)	(they)
JUGAR	juego	juegas	juega	jugamos	jugáis	juegan
HACER	hago	haces	hace	hacemos	hacéis	hacen

Time Phrases

Siempre	Always
Todos los días	Every day
Normalmente	Normally
A menudo	Often
A veces	Sometimes
De vez en cuando	From time to time
Raramente	Rarely
Nunca	Never

These go before the verb, i.e.  
"Nunca bailo" = I **never** dance



by verbs finitives]	
	bailar
	cantar
	escuch
	hacer

## Mis vacaciones - My holidays

**¿Adónde fuiste?** Where did you go?

**Fui a ...** I went to ...

Alemania - Germany  
 Argentina - Argentina  
 Cuba - Cuba  
 Escocia - Scotland  
 España - Spain  
 Francia - France  
 Gales - Wales  
 Grecia - Greece  
 La India - India  
 Inglaterra - England  
 Irlanda - Ireland  
 Italia - Italy  
 México - Mexico  
 Pakistán - Pakistan  
 Portugal - Portugal  
 República Dominicana - The Dominican Republic  
 Las Islas Caimán - The Cayman Islands

**¿Cómo fuiste?** How did you go?

**Fui ...** I went ...

A pie - on foot  
 En autocar/ autobús - by bus  
 En avión - by plane  
 En barco - by boat  
 En bicicleta - by bike  
 En coche - by car  
 En monopatín - by skateboard  
 Ent ren - by train  
 En moto - by motorcycle  
 En helicóptero - by helicopter

**¿Con quién fuiste?** Who did you go with?

**Fui ...** I went

Con mi familia - with my family  
 Con mis padres - with my parents  
 Con mis amigos - with my friends  
 Con mis Abuelos - with my grandparents  
 Con mi novia/novia - with my boyfriend/ girlfriend

**¿Cuándo?** When?

El invierno pasado - last Winter  
 El verano pasado - last summer  
 El otoño pasado - last fall  
 La primavera pasada - last spring  
 El año pasado - last year  
 El mes pasado - last month  
 La semana pasada - last week

**¿Cómo fue?** What was it like?

**Fue ...** It was

Estupendo - fantastic  
 Genial - brilliant  
 Guay - cool  
 Aburrido - boring  
 Horrible - horrible  
 Un desastre - a disaster

**¿Qué hiciste?** What did you do?

Bailé - I danced  
 Descansé - I had a rest  
 Escuché música - I listened to music  
 Fui de excursión - I went on an outing  
 Jugué al voleibol en la playa - I played volleyball on the beach.  
 Mandé mensajes - I sent messages  
 Monté en bicicleta - I rode a bike  
 Saqué fotos - I took photos  
 Tomé el sol - I sunbathed  
 Visité monumentos - I visited monuments

**¿Qué tal lo pasaste?** What sort of time did you have?

¡Lo pasé bomba! - I had a fantastic time!  
 ¡Lo pasé fenomenal! - I had a wonderful time!  
 ¡Lo pasé guay! - I had a great time!  
 ¡Lo pasé bien! - I had a good time!  
 ¡Lo pasé mal! - I had a bad time!  
 ¡Lo pasé fatal! - I had a horrible time!

**¿Cuánto tiempo pasaste allí?**

How much time did you spend there?

**Pasé ...** I spent ...

Dos días - two days  
 Diez días - ten days  
 Una semana - one week  
 Dos semanas - two weeks  
 Un mes - a month  
 Un fin de semana - a weekend

**Important verbs in PAST tense;**

**Ser (to be) and Ir (to go)**

Yo fui - I went/was  
 Tú fuiste - You singular went /were  
 Él / ella fue- He/ she went /was  
 Nosotros/as fuimos - We went /were  
 Vosotros/as fuisteis- You plural went /were  
 Ellos/ ellas fueron - They went /were

**Palabras útiles - Useful words**

Generalmente - Usually  
 Normalmente - Normally  
 Me quedo en casa - I stay home  
 ¿Cómo? - How?, What...like?  
 ¿Adónde? - (to) where?  
 ¿Quién? - Who?, whom?  
 ¿Qué? - What?



# MATHS

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Cycle 3 in **Maths** will focus on 3 topics. **Topic 1** is calculating with fractions and percentages. You will be able to use the 4 operations with fractions and will be able to calculate simple and compound interest with percentages. **Topic 2** is compound measure. You will be able to calculate and understand speed and density formulas. **Topic 3** is calculating area and perimeter of 2D shapes including circles.

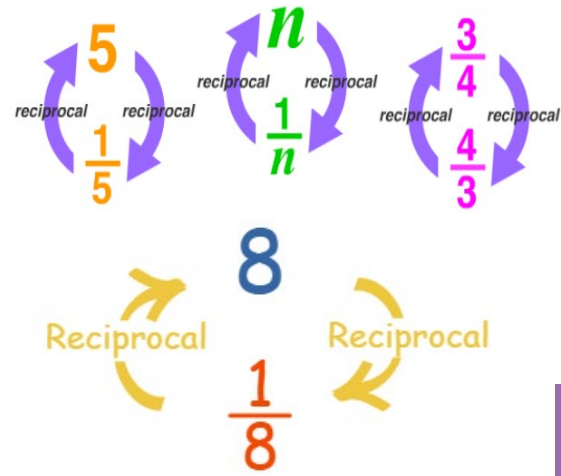
KEY WORDS AND DEFINITIONS

<b>Convert</b>	To change a value or expression from one form to another
<b>Fraction</b>	Representation of a part of a whole or, more generally, any number of equal parts
<b>Percentage</b>	A number or ratio expressed as a fraction of 100 denoted using the percent sign "%"
<b>Compound Measure</b>	Types of measure that involve two or more different units
<b>Perpendicular</b>	Lines that are at 90 degree angles to each other
<b>Parallel</b>	Lines that are always an equal distance apart
<b>Perimeter</b>	The distance around a two dimensional shape
<b>Circumference</b>	The distance around the outside of a circle
<b>Area</b>	The amount of space inside a 2D shape
<b>Prism</b>	A 3D solid which has identical faces at both ends
<b>Volume</b>	The amount of space inside a 3D shape
<b>Surface area</b>	The sum of the area of each face on a 3D shape

**Percentage Change Formula** =  $\frac{\text{Old Number} - \text{New Number}}{\text{Old Number}} \times 100$

**Topic 1**  
**Calculating with fractions and percentages**  
*Sparx:*  
 Fractions: M835, M157, M110  
 Interest: M901

The **reciprocal** of a number is 1 divided by that number



When adding and subtracting fractions you need a **common denominator** before you can carry out the calculation

$$\frac{1}{2} + \frac{1}{3} = ?$$

$$\frac{1}{2} \times 3 = \frac{3}{2} \quad \frac{1}{3} \times 2 = \frac{2}{6}$$

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

When **multiplying** fractions you need to multiply the **numerators** and multiply the **denominators**

E.g.  $\frac{3}{5} \times \frac{4}{7} = \frac{3 \times 4}{5 \times 7} = \frac{12}{35}$

When **dividing** fractions turn the second fraction upside and multiply them

E.g.  $\frac{3}{4} \div \frac{1}{3} = \frac{3}{4} \times \frac{3}{1} = \frac{3 \times 3}{4 \times 1} = \frac{9}{4}$

**Topic 2**

**Compound Measure**

*Sparx:*

SDT: U151

MDV: U910

Speed, distance and time can be calculated if you know two of the values using the SDT formula:



Distance = Speed x Time



Time =  $\frac{\text{Distance}}{\text{Speed}}$



Speed =  $\frac{\text{Distance}}{\text{Time}}$

**Example:**

A wave travels 120m in 1 minute.

S = ?

D = 120m

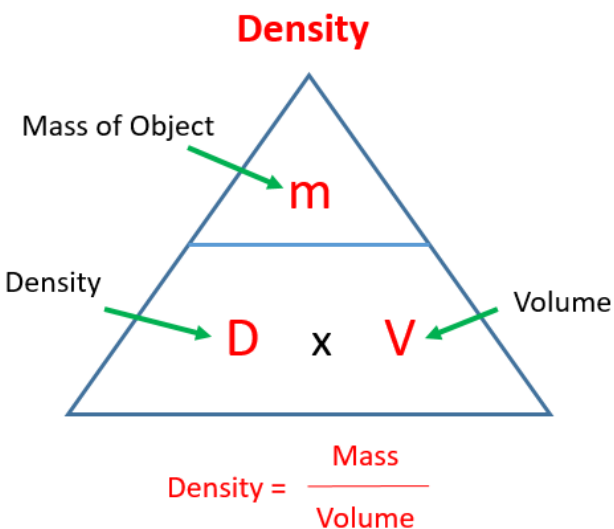
T = 1minute = 60s



Speed = distance / time  
= 120 / 60  
= 2m/s

To work out what the units are for speed, you need to know the units for distance and time.

Mass, density and volume can be calculated using the MDV formula:



**Topic 3**

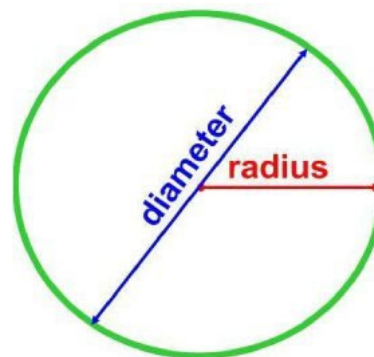
**Area and Perimeter**

*Sparx:*

2D shapes: M635, M690, M610, M390

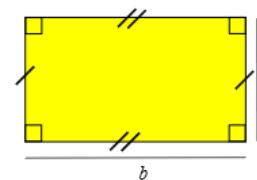
3D Shapes: M765, M722

Circles: M169, M231

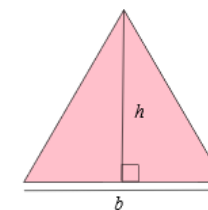


Area =  $\pi r^2$   
Circumference =  $2\pi r$

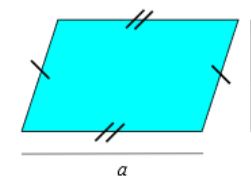
Length is measured in mm, cm, m, km etc.  
Area is measured in mm<sup>2</sup>, cm<sup>2</sup>, m<sup>2</sup>, km<sup>2</sup> etc.  
Volume is measured in mm<sup>3</sup>, cm<sup>3</sup>, m<sup>3</sup>, km<sup>3</sup> etc.



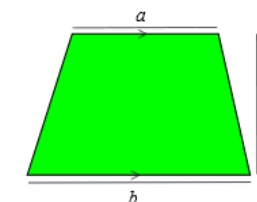
Rectangle:  
Area =  $b \times h$



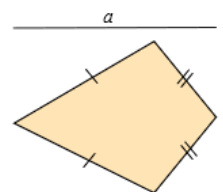
Triangle:  
Area =  $\frac{1}{2} b \times h$



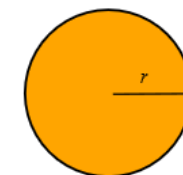
Parallelogram:  
Area =  $a \times b$



Trapezium:  
Area =  $\frac{1}{2} (a + b) \times c$



Kite:  
Area =  $\frac{1}{2} a \times b$

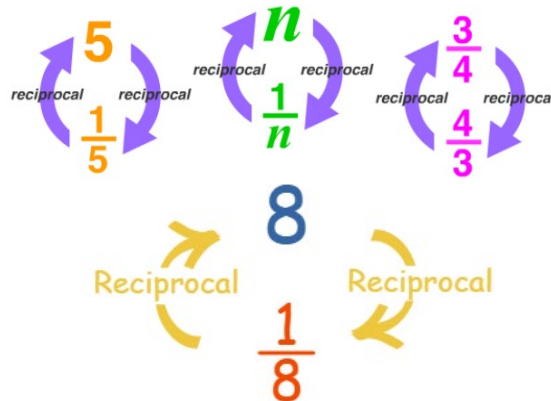


Circle:  
Area =  $\pi r^2$

Cycle 3 in **Maths** will focus on 3 topics. **Topic 1** is calculating with fractions and percentages. You will be able to calculate with fractions and reverse percentages, and will be able to calculate simple and compound interest. **Topic 2** is calculating area and perimeter of 2D shapes including circles. **Topic 3** is calculating volume and surface area of 3D shapes including, pyramids, cones and spheres.

FRACTION AND SHAPE – KEY WORDS AND DEFINITIONS	
<b>Convert</b>	To change a value or expression from one form to another
<b>Fraction</b>	Representation of a part of a whole or, more generally, any number of equal parts
<b>Percentage</b>	A number or ratio expressed as a fraction of 100 denoted using the percent sign "%"
<b>Compound Measure</b>	Types of measure that involve two or more different units
<b>Perimeter</b>	The distance around a two dimensional shape
<b>Area</b>	The amount of space inside a 2D shape
<b>Perpendicular</b>	Lines that are at 90 degree angles to each other
<b>Parallel</b>	Lines that are always an equal distance apart
<b>Circumference</b>	The distance around the outside of a circle
<b>Radius</b>	The distance from one point on a circle to the centre
<b>Diameter</b>	The distance from one point on a circle through the centre to another point on the circle
<b>Sector</b>	The area between two radiuses and the connecting arc of a circle
<b>Arc</b>	Any smooth curve joining two points on a circle
<b>Surface area</b>	The sum of the area of each face on a 3D shape

The reciprocal of a number is 1 divided by that number



When **adding** and **subtracting** fractions you need a **common denominator** before you can carry out the calculation

$$\frac{1}{2} + \frac{1}{3} = ?$$

$$\frac{1}{2} \times \frac{3}{3} = \frac{3}{6} \qquad \frac{1}{3} \times \frac{2}{2} = \frac{2}{6}$$

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

**Topic 1**  
**Calculating with fractions and percentages**  
*Sparx:*  
 Fractions: M835, M157, M110  
 Reverse %: M528  
 Interest: M901

**The Compound Interest Formula**

Amount      Interest Rate (decimal)

Time

$$A = P \left( 1 + \frac{r}{n} \right)^{nt}$$

Principal      Number of times interest is compounded per unit 't'

thecalculatorsite.com

**Percentage Change Formula** =  $\frac{\text{Old Number} - \text{New Number}}{\text{Old Number}} \times 100$

**Topic 2**

Geometry: Area and Perimeter

Sparx:

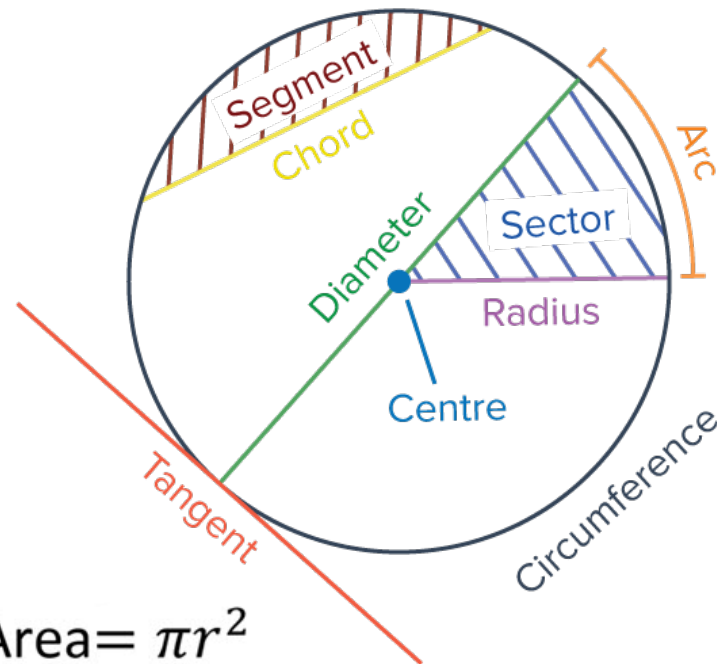
2D shapes: M635  
M690, M610, M390

3D Shapes: M765,  
M722

Circles: M169, M231

**Rectangle:** Area =  $b \times h$   
**Triangle:** Area =  $\frac{1}{2} b \times h$   
**Parallelogram:** Area =  $a \times b$   
**Trapezium:** Area =  $\frac{1}{2} (a + b) \times c$   
**Kite:** Area =  $\frac{1}{2} a \times b$   
**Circle:** Area =  $\pi r^2$

Length is measured in mm, cm, m, km etc.  
Area is measured in mm<sup>2</sup>, cm<sup>2</sup>, m<sup>2</sup>, km<sup>2</sup> etc.  
Volume is measured in mm<sup>3</sup>, cm<sup>3</sup>, m<sup>3</sup>, km<sup>3</sup> etc.



Area =  $\pi r^2$   
Circumference =  $2\pi r$

**Topic 3**

Geometry: 3D shapes

Sparx:

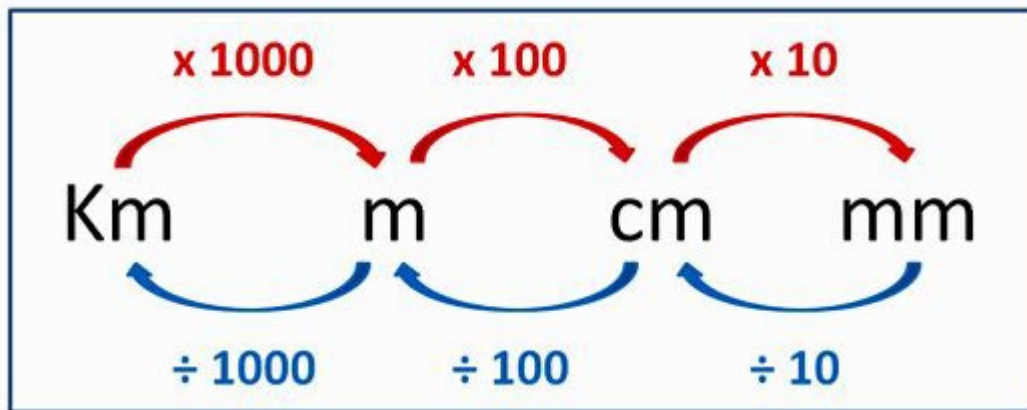
Converting: M772

Volume: M765, M722,  
U484, U617

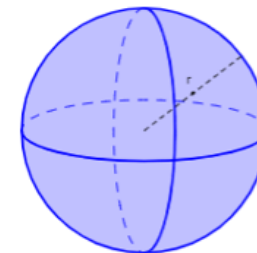
Surface area:

M534, M661, M936

Length: To convert from mm to cm you multiply by 10  
Area: To convert from mm<sup>2</sup> to cm<sup>2</sup> multiply by 10<sup>2</sup>  
Volume: To convert from mm<sup>3</sup> to cm<sup>3</sup> you multiply by 10<sup>3</sup>



**Surface Area and Volume of Sphere**



Surface Area =  $4\pi r^2$

Volume =  $\frac{4}{3} \pi r^3$



# PE

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# Cycle 3 Knowledge Organiser

QR code for basic football rules video



## Basic Rules

**Players:** Only 7 players per side, who all have different positions

**Contact rule:** You can't touch or push any player during the game as it is a non-contact sport. **This will result in a penalty pass or if they contact you whilst you are in the shooting circle, you will get a penalty shot.**

**Footwork rule:** You are not allowed to move with the ball. When catching the ball the foot that lands first must stay in contact with the floor until ball is passed. **If footwork happens a free pass is awarded.**

**Obstruction rule:** you must be 1 metre away from the player you are marking before your arms go up and over the ball. **If your defender is obstructing you before you shoot, you get a penalty shot.**

**3 seconds rule:** You can only hold the ball for 3 seconds before you pass or shoot. **If a player holds a ball to long a free pass is awarded.**

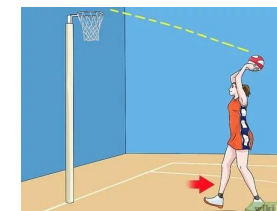
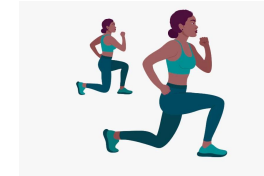
**Centre pass rule:** To start a game and after a goal is scored you go back to the centre pass and players must receive in the centre third.

**Repossession:** If a player drops the ball or bounces the ball and picks it back up again the other team gets a free pass.

**Offside rule:** If you go into a third that you are not allowed in or if any other player than GS GA GK GD go into the shooting circle the other team gets a free pass. **If offside happens a free pass is awarded.**

**How to score:** A goal is scored when a GA or GS gets the ball into the hoop from within the D.

**Out of court:** If the ball gets knocked out of the court by team A, then team B will gain the throw in.



## Leadership Skills

### Communication

Using language and terminology that others understand **E.g. Explaining how to shoot in football with key points**

### Organisation

Making sure that people are in the right place for the task set, **E.g. Sorting players into even teams so that it is fair**

### Adaptability

Making sure that the task set is appropriate for ability of those taking part. **E.g. Making something easier to help or more difficult to challenge.**

### Creativity

Ensuring practices or games aren't the same each time **E.g. Creating different rules in the game to focus on certain skills**



# SCIENCE

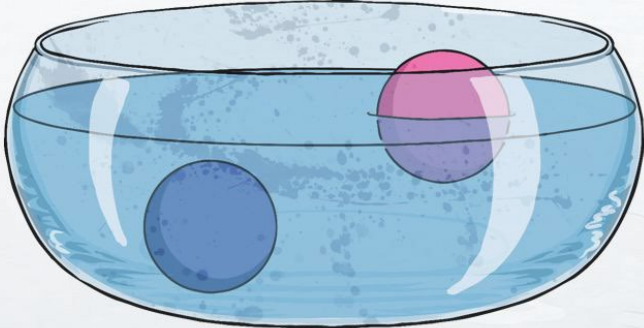
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Floating, Sinking and Density Key words and definitions	
<b>Volume</b>	Volume describes the amount of space taken up by an object or substance.
<b>Mass</b>	Mass is the amount of matter taken up by an object. Although mass is often referred to as weight and weighed in kilograms, they are not the same thing. An object's weight will vary according to gravity; its mass will not change.
<b>Density</b>	Density is the <b>mass</b> of an object or substance divided by its <b>volume</b> .

## What Is Density?

Density describes how much space an object or substance takes up. Density represents how thick or closely packed together an object of substance is. Density can vary depending on temperature and pressure.

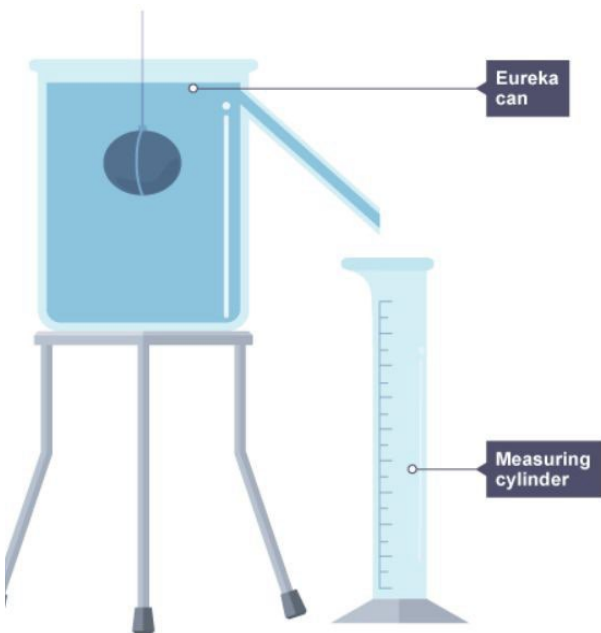
Density is the **mass** of an object or substance divided by its **volume**.



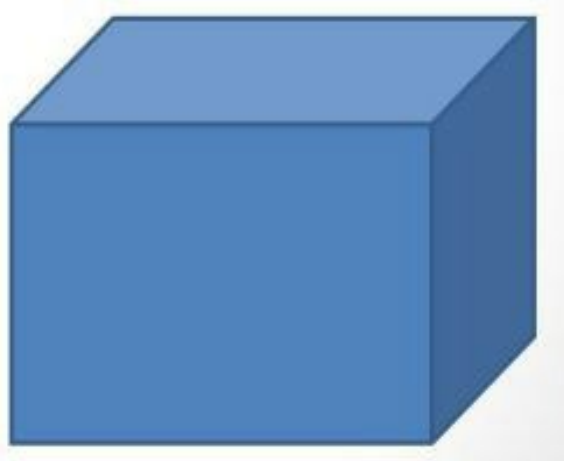

$$Density = \frac{mass}{volume}$$

$$\rho = \frac{m}{v}$$

### Measuring volume of an irregularly shaped object



### Measuring volume of a regularly shaped object Length x width x height



### Density values

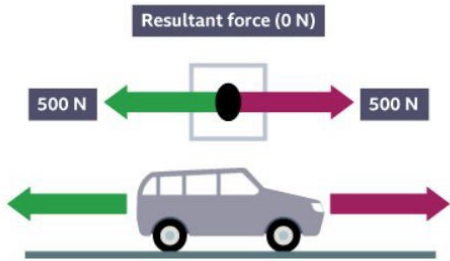
The densities of some everyday substances are:

- Steel has a density of **7.82 g/cm<sup>3</sup>**
- Water has a density of **1.00 g/cm<sup>3</sup>**
- Air has a density of **0.0013 g/cm<sup>3</sup>**

These values show that the **steel** (solid) is the most dense while the **air** (gas) is the least dense.

# Hidden Forces

Describe the motion of the car.

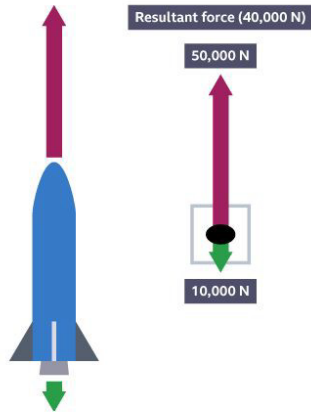


Resultant force = 500 N - 500 N

Resultant force = 0 N

There is no resultant force and the car is travelling on a motorway, this means that the car is travelling at a constant velocity.

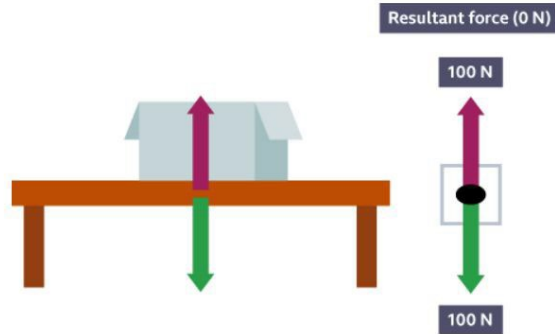
Describe the motion of the rocket.



Resultant force = 50 000 N - 10 000 N Resultant force = 40 000 N upwards

The rocket has just launched. The resultant force is acting upwards, which in the same direction as the rocket is moving, which means the rocket is accelerating upwards.

Describe the movement of the box.



Resultant force = 100 N - 100 N

Resultant force = 0 N

There is no resultant force acting on the box and the box is **at rest** on the table, meaning that the box is stationary.

## Key Points

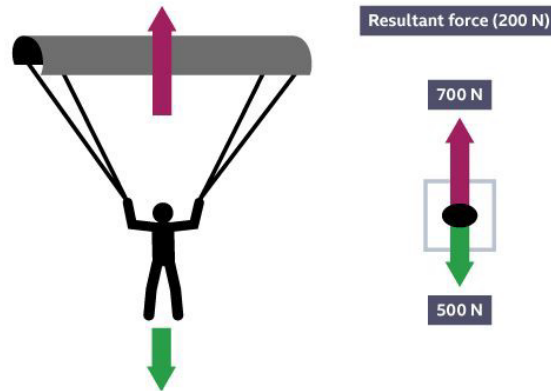
- Multiple forces act on an object at the same time.
- The size and direction of these forces determines the movement of the object.

Multiple forces act on an object at once and the resultant force that is acting on the object can be calculated.

A resultant force is **the overall force that acts on the object.**

Remember that forces are vectors.

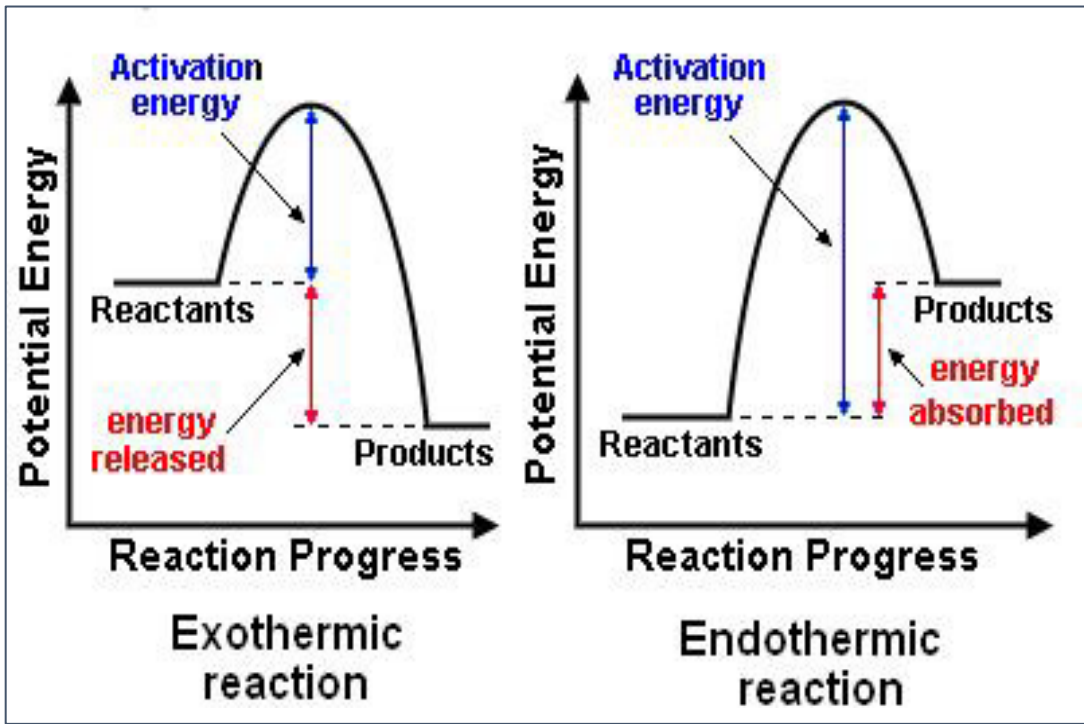
2. A sky diver has just opened her parachute. The weight of the sky diver is 500 N and the air resistance acting on her is 700 N



Resultant force = 700 N - 500 N Resultant force = 200 N upwards

The parachutist is travelling downwards, the resultant force is acting against the movement. This means that the parachutist is decelerating.





### Exothermic and Endothermic Reactions

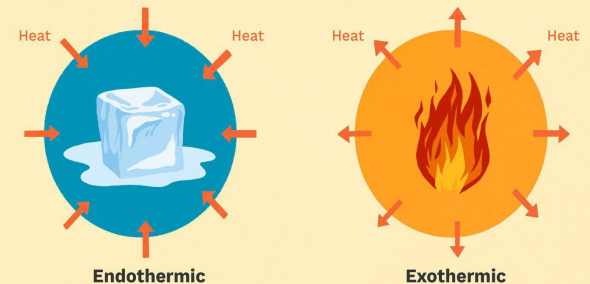
#### Key words and definitions

<b>Endothermic</b>	More heat taken in than given out to the surroundings.
<b>Exothermic</b>	More heat given out than taken in from the surroundings.



#### Endothermic vs. Exothermic Reactions

Energy is conserved in chemical reactions. The total energy of the system is the same before and after a reaction



**Endothermic**  
The endothermic reaction is cooler than surroundings

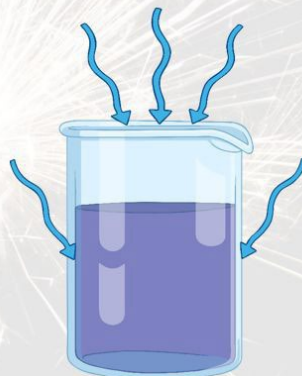
**Exothermic**  
The exothermic reaction is hotter than surroundings

ThoughtCo.

### Endothermic

- Cold packs are **endothermic** – they make the surroundings **colder**
- Heat is taken from the surroundings and transferred to the object
- Examples include **melting** and **boiling**

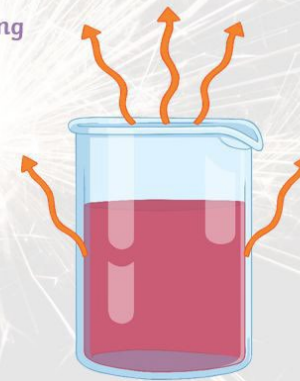
In cold packs, two chemicals are mixed together to create a reaction which makes the surroundings colder.



### Exothermic

- Hand warmers are **exothermic** – they make the surroundings **warmer**
- Heat is transferred from the object to the surroundings and makes it feel warmer
- Examples include **condensing** and **freezing**

In hand warmers, an exothermic reaction is caused by two substances being mixed together – this gives off heat.



**Examples of exothermic reactions** are combustion, most oxidation reactions and neutralisation. Exothermic reactions are used in things like self-heating cans and hand warmers.

**Examples of endothermic reactions** are thermal decomposition reactions and the reaction of citric acid with sodium hydrogencarbonate. Endothermic reactions are used in some sports injury packs to help muscles cool after injury

## pH Scale

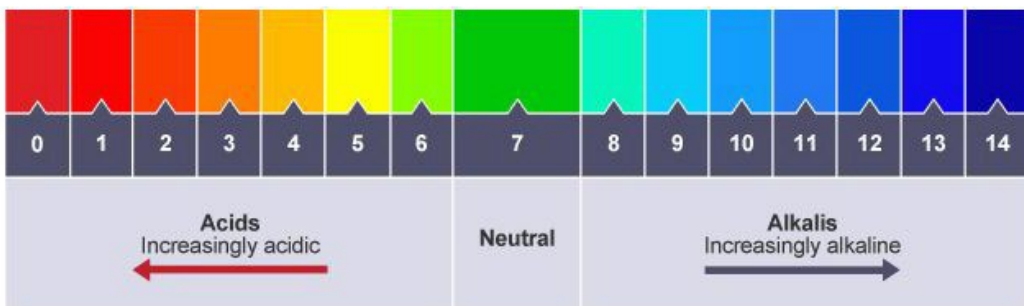
The pH scale is a number scale from 0 to 14. It tells us how acidic or alkaline an **aqueous solution** is. The pH scale is used to classify **solutions** as acidic, alkaline or neutral.

- Neutral solutions are exactly pH 7.
- Acidic solutions have pH values less than 7. The closer to pH 0, the more acidic a solution is.
- Alkaline solutions have pH values more than 7. The closer to pH 14, the more alkaline a solution is.

### Using universal indicator

Universal indicator is supplied as a solution or as universal indicator paper. It is a mixture of several different indicators. Unlike litmus, universal indicator can show us how strongly acidic or alkaline a solution is, not just that the solution is acidic or alkaline. This is measured using the pH scale, which runs from pH 0 to pH 14.

Universal indicator has many different colour changes, from red for strongly acidic solutions to dark purple for strongly alkaline solutions. In the middle, neutral pH 7 is indicated by green.



## Finding the pH of a substance

The pH of a substance can be tested if it is an aqueous solution. The substance must be dissolved in water.

There are 2 methods for testing for pH:

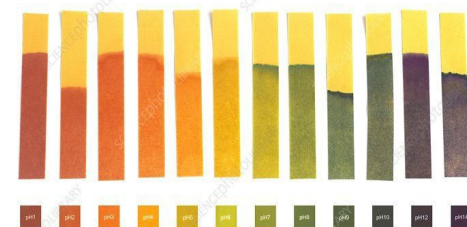
- Using a pH meter
- Using an **indicator**

**NATURAL INDICATORS**

Neutral → Red litmus remains Red  
Blue litmus remains Blue

Acid → Red litmus remains Red  
Blue litmus turns Red

Base → Red litmus turns Blue  
Blue litmus remains Blue



### Making an indicator

Lots of highly coloured vegetables and flowers can be used to make indicators just by mashing them in hot water. Red cabbage is one of the best, and can be compared to the colour charts above.

Other good natural indicators are beetroot, tea, turmeric and blackberries.

To make your own indicator, you will need:



You can use red cabbage to make your own universal indicator

## Neutralisation

### Key points

- An acid and alkali will neutralise each other and produce a salt and water. This is called a neutralisation reaction.
- The name of the salt produced can be worked out from the names of the acid and the alkali.
- Chemical equations can be written to describe a neutralisation reaction.

### Neutralisation reactions

A **chemical reaction** happens if you mix together an acid and a **base**. The reaction is called neutralisation. A **neutral** solution is made if you add just the right amount of acid and base together.

**Salts** have scientific names. For example, the scientific name of table salt is sodium chloride.

Names of salts can be worked out from the names of the acid and the alkali that react to make them.

There are two parts to a salt name:

1. The first word is a metal, taken from the alkali.
2. The second word ends in ~ide or ~ate, taken from the acid.



### Word equations

Neutralisation reactions can be described using **chemical equations** like a word equation. This uses the scientific names for the acid and alkali placed on the **reactant** side of the equation. The scientific name for the salt goes on the **product** side, together with water.

For example:

**Nitric acid + sodium hydroxide → sodium nitrate + water**

**Acid + alkali → salt + water**

### Symbol equations

A symbol equation describes a reaction more precisely using chemical symbols and formulas. Here is an example of a word equation and a symbol equation describing the same reaction.

**Nitric acid + sodium hydroxide → sodium nitrate + water**

**$\text{HNO}_3 + \text{NaOH} \rightarrow \text{NaNO}_3 + \text{H}_2\text{O}$**

