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THE CEDARS
ACADEMY

Lionheart Educational Trust

Knowledge Organiser Booklet

Year 8
Summer Term

Ways to use your knowledge organiser

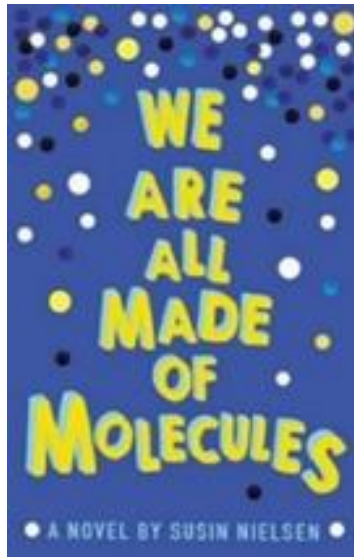
	Look, Cover, Write, Check	Self Quizzing	Mind Maps	Paired Retrieval	Definitions to Key Words
Step 1	Look at and study a specific area of your knowledge organizer. 	Use your knowledge organizer to create a mini quiz. Write down questions using your knowledge organizer. 	Create a mind map with information from your knowledge organiser. 	Like self quizzing, use your knowledge organizer to create a quiz. 	Write down the key words and definitions. 
Step 2	Cover or flip the knowledge organizer over and write down everything you remember. 	Cover or flip the knowledge organizer over and answer the questions and remember to use full sentences and key words/vocabulary. 	Add pictures to represent different facts, knowledge. Try to categorise different areas in different colours. 	Ask a family member to ask you the questions and tell you which ones you get right and which ones you get wrong. 	Try not to use your knowledge organiser to help you. 
Step 3	Check what you have written down. Correct any mistakes in a different coloured pen and add anything you missed. Repeat. 	Check your answers. Correct any mistakes in a different coloured pen and add anything you missed. Repeat. 	Try to make connections that link information together. 	Following the quiz, summarise which areas you got wrong and need to revise further. 	Use a different coloured pen to check you work and correct any mistakes you may have made. 

Lionheart Literary Canon: Curating a Lifelong Love of Literature

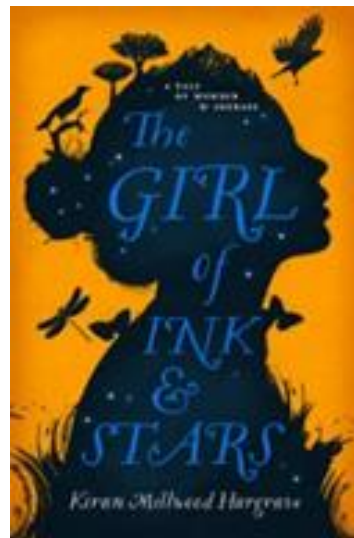
Recommended books to have read by the end of Year 8



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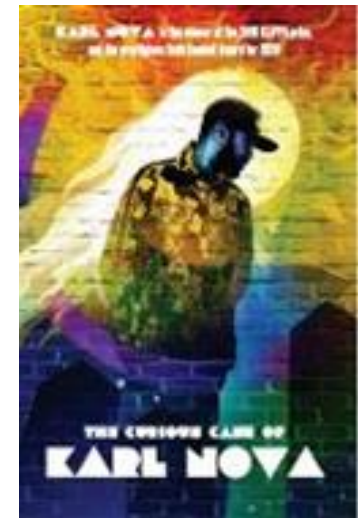
**We Are All Made
Of Molecules
Susan Nielsen**



**The Girl of the Ink
and the Stars
Kiran Millwood
Hargrave**



**The Acrobats
of Agra
Robin Scott-Elliott**



**The Curious Case of
Karl Nova
Karl Nova**

All books can be purchased online, or loaned from our library

Definition of Protest Poetry - Protest means objection, complaint or revolt. Protest poems or protest literature refers to works that address real socio-political issues and express objection against them.

The Romantics

1. Protest against industrialism and the destruction of the countryside
2. A reaction against the Scientific enlightenment
3. Most prevalent during 1800 - 1850
4. Blake, Coleridge, Keats, Wordsworth and Shelley are all famous Romantic poets

Performance Poetry

1. Specifically composed for – or during – performance (often at a poetry slam)
2. Often protests against social inequalities and advocates for the rights of those without privileges
3. Became popular during the 1980s
4. Famous performance poets include Benjamin Zephaniah, John Agard and Stormzy

Contemporary Poets

1. Most often written in free verse (unrhymed lines) and is usually fairly short
2. Written in accessible language that mimics the dialect and rhythm of natural speech
3. Contemporary poetry refers to poetry post 1990s
4. Famous contemporary poets include Carol Ann Duffy, Simon Armitage and Imtiaz Dhaker

British and Irish Social and Political Events of Note

Industrial Revolution – movement to new manufacturing processes such as factories, technological development and the movement of people from the county to the city in search of work in factories.

Irish War of Independence - In 1922, most of Ireland became independent from the UK to become the independent Irish Free State but Northern Ireland, remained within the UK.

Irish Troubles - a period of conflict in Northern Ireland involving republican paramilitaries and the British security forces. The Troubles is usually dated from 1968 through the Good Friday Agreement of 1998.

The Windrush Generation - In 1948, Britain was just starting to recover from WW2. In the Caribbean, lots of young men and women had served in the British armed forces because at the time, many Caribbean countries were still under British rule. After the war, some of these people answered an advert to come to Britain for work.

The Scottish Referendum - in 2014, the Scots voted to stay within the UK as opposed to becoming an independent country.

The European Migrant Crisis - when rising numbers of people arrived in the European Union (EU) from across the Mediterranean Sea.

Brexit – the withdrawal of the UK from the European Union.

Poetic Methods

Structure – how poems start, end, and how they are organised in terms of narrative or ideas

Poetic voice – the narrator of the poem – is it first or third person?, the poet themselves or a character etc

Tone – the mood of the poem

Imagery – the images used by poets

Contextual references – specific references made to current or past events

Form – the style of a poem eg a ballad or an ode

Techniques – personification, simile metaphor, onomatopoeia etc



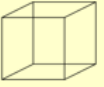
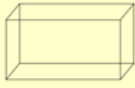
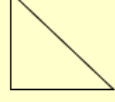
A History of Protest Poetry (in chronological order)

William Blake **London** 1794
 William Wordsworth **Prelude** 1800
 Wilfred Owen **Dulce et Decorum** 1913
 W.B. Yeats **Easter** 1916 1920
 Langston Hughes **I, too** 1926
 Seamus Heaney **Storm on the Island** 1966
 Denise Levertov **Making Peace** 1980
 Carol Rumens **The Emigree** 1993
 Benjamin Zephaniah **We Refugees** 2004
 Imtiaz Dhaker **Minority** 2009
 Daljit Nagra **Hadrian's Wall** 2016

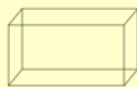
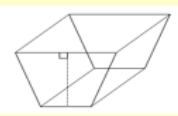
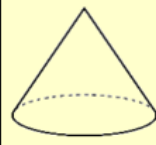
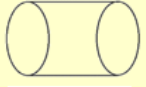
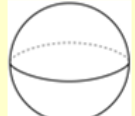
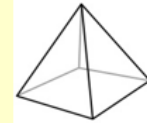
Year 8 Political and Social Protest Poetry Vocabulary Lists

upheaval	influential	ancestry	divisive
advocate	reaction	uprising	threatening
intellectual	progress	nationalist	displacement
civil	criticism	treason	referendum
industrialism	desire	activist	gratitude
campaign	corrupt	refrain	inequality
perceived	consequence	fanatic	escalate
revolution	intolerance	discrimination	adversity
marginalised	affinity	ensure	privileged

Most Significant Figure	The first non-zero digit
Round to One Significant Figure	Round to the first non-zero digit

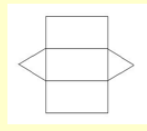
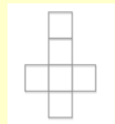
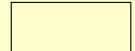
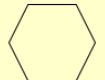
Definition	Characteristics
A three-dimensional shape can be defined as a solid figure or shape that has three dimensions – length, width and height.	» Has three dimensions: length, width and height.
Examples	Non-examples
   	    

3D Shapes

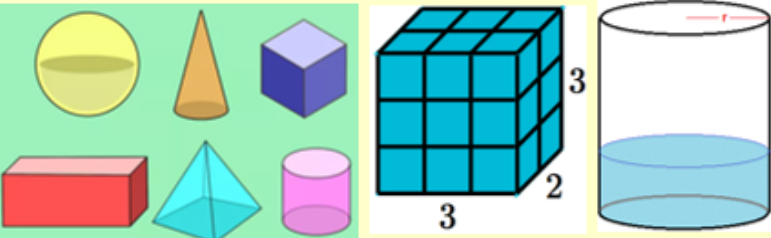
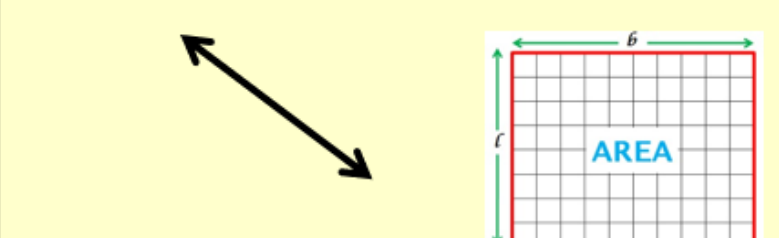
Definition	Characteristics
A prism is a solid with two congruent parallel faces, where any cross-section parallel to those faces is congruent to them.	» It has two identical “end-faces” and a number of rectangular faces depending on the nature of the polygonal ends. » All of its faces are flat.
Examples	Non-examples
     	    

Prism

Face	A flat surface on a 3D shape. For example, a cube has six square faces, a triangular prism has five faces (two triangles and three rectangles) and a cylinder has two faces (the two end circles – the curved surface is not a face).
Edge	A line segment that joins vertices together.
Vertex	A single point. It joins edges together. Often seen as corner or point. The plural of vertex is vertices.
Curved Surface	A rounded surface that is not flat.
Apex	The highest point of a shape. It is the vertex at the top of the shape and opposite the base.
Surface Area	The surface area of a prism is equal to the sum of the areas of its faces.

Definition	Characteristics
A net is a 2D shape that you can cut and fold to make a 3D shape.	» The edges are drawn on the net so that it is clear where the net is folded to form the 3D shape.
Examples	Non-examples
  	   

Net

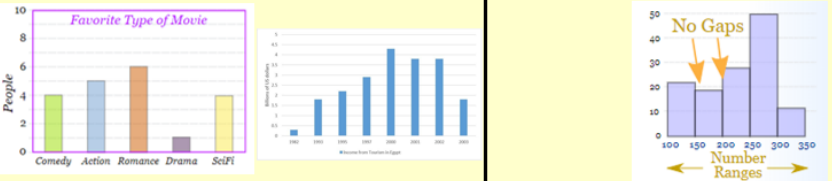
Definition	Characteristics
The space occupied by a 3D object	» The quantity of a 3D space enclosed by a surface » How many unit cubes fit into the space » Units include mm^3, cm^3, m^3, km^3, $inches^3$, $feet^3$
Examples	Non-examples
	

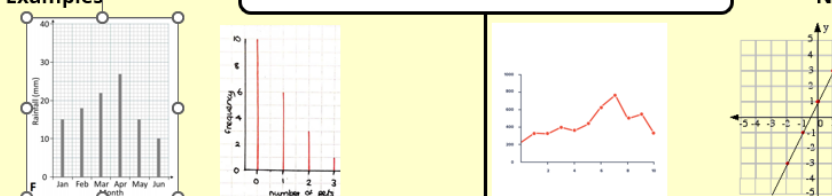
Capacity

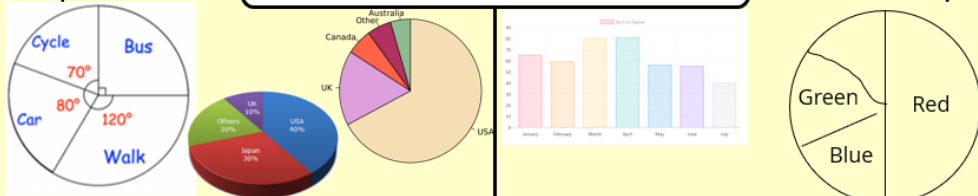
The total amount of liquid a container can hold.

When talk about liquid, capacity refers to the amount of liquid that a container can hold whereas volume refers to how much liquid is in the container.

Tally	A way of keeping count by drawing marks. Every fifth mark is drawn across the previous 4 marks, so you can easily see groups of 5
Frequency	The number of times a data value occurs
Frequency Table	A table used to record frequencies of multiple items.
Pictogram	A chart that uses a number of icons to represent frequencies
Bar Chart	A chart that uses heights of bars to represent frequencies
Line Chart	A chart that uses heights of lines to represent frequencies
Pie Chart	A chart that uses sectors of a circle to represent the proportions of different categories.

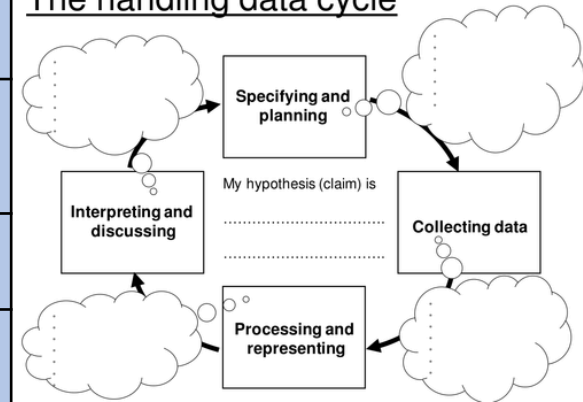
Definition	Characteristics
A chart that uses heights of bars to represent frequencies	» Used for displaying discrete or qualitative data. » Even scale along y-axis » Gaps between bars
Bar Chart	
Examples	Non-examples
	

Definition	Characteristics
A chart that uses heights of lines to represent frequencies	» Like a bar chart, but with lines instead of bars » Can be horizontal or vertical lines, but most frequently vertical
Line Chart	
Examples	Non-examples
	

Definition	Characteristics
A chart that uses sectors of a circle to represent the proportions of different categories.	» A chart that uses sectors of a circle to represent the relative frequency of different categories, values or groups.
Pie Chart	
Examples	Non-examples
	

Hypothesis	A hypothesis is an idea or explanation that you then test through study and experimentation
Population	Population refers to the total set of observations that can be made. <u>EG</u> if we are studying the height of adult women, the population is the height of all the women in the world
Sample	A sample data set contains only part of the population. The sample size will always be smaller than the population size
Frequency	How often something happens in a study. You may hear 'amount of' or 'number of' instead of frequency

The handling data cycle



Discrete data	Data from discrete variables that can only take certain values. E.g. number of coins, shoe size, maths grade, number rolled on a die.
Continuous data	Data from measurements. E.g. length, weight, time.
Primary data	Data that is collected by a researcher from first-hand sources.
Secondary data	Data gathered from studies, surveys, or experiments that have been run by <u>other people</u> or for other research.
Outlier	A piece of data that <u>lines outside</u> of where most of the results are clustered.

Definition	Characteristics
Data expressing a quantity, amount or range, and is expressed as a numerical value.	» A numerical value » Can be either discrete (data can only be specific numerical values) or continuous (data can be any numerical value)
Examples	Non-examples
<u>Discrete</u> Number of siblings, goals scored <u>Continuous</u> Weight, journey time	Favourite colour Most popular names Football teams

Quantitative Data

Definition	Characteristics
This is non numerical data and organises the data into categories	» It is sometimes known as categorical data. » Data that isn't numbers
Examples	Non-examples
Favourite subject Type of flowers Holiday destinations	Height Speed Cost

Qualitative Data

Mean	The single value that if all numbers in a list are changed into, maintains the total of the list.
Median	The middle value in an ordered list.
Mode	The most common value in a set of data.
Modal	Refers to the mode. E.g. modal value, modal group.
Average	A measure of the central tendency or typical value of a set of data.
Measure of central tendency	A single value that attempts to describe a set of data by identifying the central position within that set of data. The mean, median and mode may be used to measure central tendency.
Mid-point	The middle value of a group/class when working with grouped data.
Estimate	To find a value that is close enough to the right answer, usually with some thought or calculation involved.

Definition The single value that if all numbers in a list are changed into, maintains the total of the list.	Characteristics • Can be found by sharing the total of all the numbers in the list equally between them. • Represents the point of balance if all the numbers from the list are placed on a number line. • Affected by outliers. • A measure of central tendency														
Mean															
Examples 9, 3, 1, 8, 3, 6 $9 + 3 + 1 + 8 + 3 + 6 = 30$ $30 \div 6 = 5$ The mean is 5	Non-examples <table><tr><td>Score</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>Frequency</td><td>2</td><td>1</td><td>4</td><td>0</td><td>3</td><td>1</td></tr></table> mean is not $\frac{2 + 1 + 4 + 0 + 3 + 1}{6}$ Mean of 5, 4, 3, $\neq 5 + 4 + 3 \div 3$	Score	1	2	3	4	5	6	Frequency	2	1	4	0	3	1
Score	1	2	3	4	5	6									
Frequency	2	1	4	0	3	1									

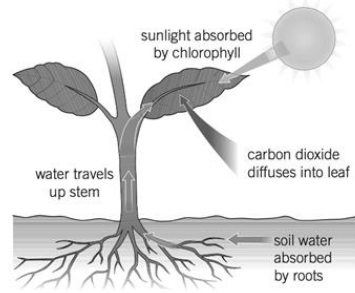
Definition The middle value in an ordered list		Characteristics » An average of the data set
Examples 1, 5, 9, 9, 10 median is 9 13, 13, 16, 18, 19, 21 median is 17		Non-examples 6, 4, 8, 3, 7, 10, 6 median is 3

Photosynthesis

Photosynthesis is the process which occurs in the chloroplasts to produce glucose using sunlight.

Water + Carbon dioxide → Glucose + Oxygen

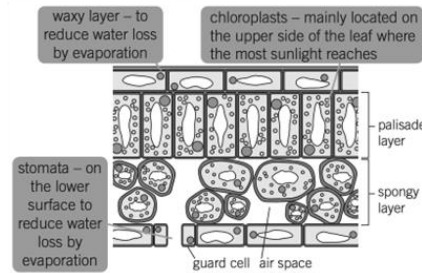
Any organism that photosynthesises to produce its own food is known as a producer, these are not just limited to plants but can include other organisms such as algae



Leaves

Leaves have several adaptations that enable them to undertake photosynthesis.

- They are thin to allow the most light through
- There is a lot of chlorophyll to absorb light
- They have a large surface area to absorb as much light as possible



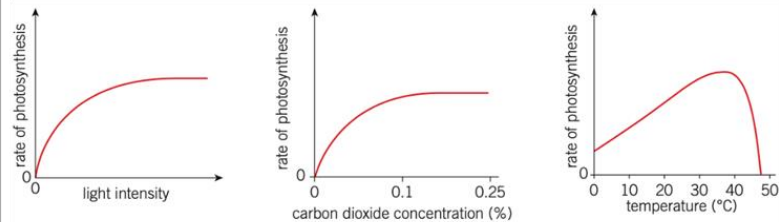
Photosynthesis Vocabulary

Photosynthesis	The process plants and algae use to make their own food, glucose. In photosynthesis, carbon dioxide and water react together to make glucose and oxygen
Chlorophyll	Green pigment in plants and algae which absorbs light energy
Glucose	A sugar produced by photosynthesis
Xylem	Carries water and dissolved minerals through the plant
Diffusion	The spreading out and mixing of particles from an area of high concentration to a low concentration
Palisade layer	Tall cells near the upper surface of a leaf containing many chloroplasts
Spongy layer	Irregular shaped cells in the leaf that have air spaces between them
Guard cell	Pair of cells that open and close the stomata
Stoma (Plural Stomata)	A tiny pore in the leaf that opens and closes to allow gases to diffuse in and out
Fertiliser	Chemicals containing minerals that plants need to build new tissues
Deficiency	A lack of minerals that cause poor growth
Nitrates	Minerals containing nitrogen for healthy growth
Phosphates	Mineral containing phosphorus for healthy roots
Potassium	A mineral needed by plants for healthy leaves and flowers
Magnesium	A mineral needed by plants to make chlorophyll.

Rate of Photosynthesis

The rate of photosynthesis can be affected by three factors:

Light intensity	The higher the light intensity the higher the rate of photosynthesis up to a point
Carbon dioxide concentration	The higher the carbon dioxide concentration the higher the rate of photosynthesis up to a point
Temperature	The optimum temperature is the temperature at which photosynthesis occurs at the highest rate, before and after this rate will be less



Plant minerals

Plants need minerals for healthy growth, if they do not have enough of these minerals this is known as a mineral deficiency

Mineral	What plants use it for	Not enough
Nitrates (contain nitrogen)	Healthy growth	Poor growth and older leaves yellow
Phosphates (contain phosphorus)	Healthy roots	Poor growth, younger leaves look purple
Potassium	Healthy leaves and flowers	Yellow leaves and dead patches
Magnesium	Making chlorophyll	Leaves turn yellow

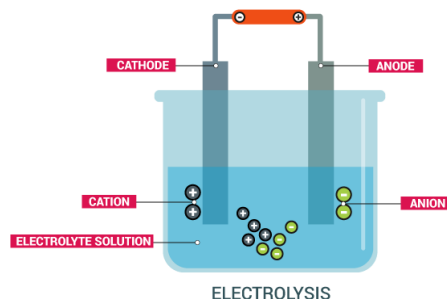
Key Word	Definition
Ore	a naturally occurring rock which has enough mineral to be worth extracting
Displaced	When an element is removed from a compound and is left as a sole element
Electrolysis	The process where electricity is used to split a compound into its separate elements
Recycling	The collecting and processing of materials that have been used so that the resources can be reused
Resources	raw materials that come from the Earth
Global Warming	The increase in the Earth's temperature due to the greenhouse effect
Respiration	this is how animals take in oxygen and give out carbon dioxide
Combustion	this is the burning of substances that could include fossil fuels or natural resources
Photosynthesis	this is how plants take in carbon dioxide and give out oxygen
Carbon sinks	this is an area which absorbs carbon and stores it and its compounds
Climate Change	long term changes to weather patterns

Extracting Metals

Electrolysis

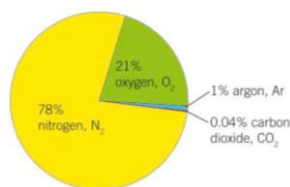
Electrolysis is a process that uses electricity to provide the energy to split up compounds to get the elements.

Electrolysis is used when the metal you are trying to extract is more reactive than carbon.



The atmosphere

The air around us is known as the atmosphere. The atmosphere is made up of a number of gases in certain percentages



Ores

We use ores to get pure metals. Metals are used for a lot of different things

One ore is **Bauxite**, which is where aluminium is extracted from

Recycling

Aluminium is a resource that is often recycled. Aluminium is used for a lot of items that are used by humans every day.

Aluminium is heated and melted. It is then formed into blocks. These blocks are then rolled into new sheets of aluminium

Advantages

- Resources will last longer
- It uses less energy than extracting waste materials
- It reduces waste and pollution

Disadvantages

- Separating rubbish can be seen as a nuisance
- The lorries collecting recycling produce pollution
- Some materials are easier to recycle than others

Reactivity Series

The reactivity series is a list of elements in order of how reactive they are.

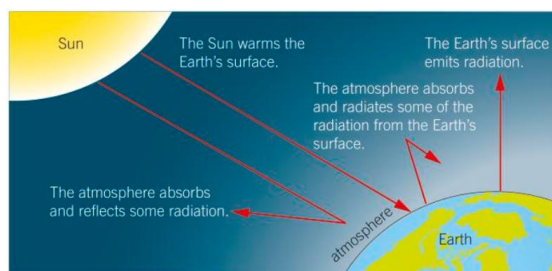
We can use this to see which elements will be **displaced** by others

Carbon is an element that is used to displace most metals from their ore compounds

Reduction is when carbon is added to a compound and the element you want is displaced by the carbon.

Global Warming:

The Greenhouse Effect



When the sun heats the Earth it sends rays. Some of these rays get trapped within the atmosphere and then these rays are reflected back off the atmosphere. As these rays are trapped, the heat from them increases the temperature within the atmosphere leading to **Global warming**

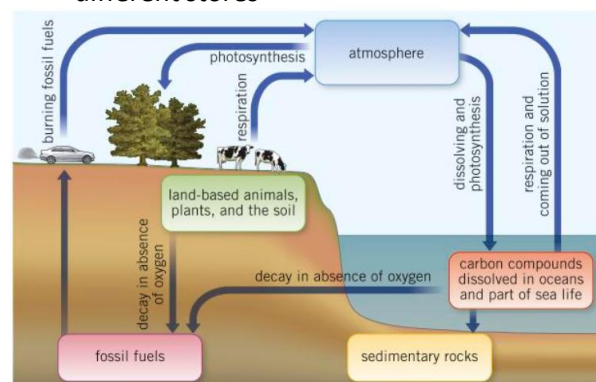


The Carbon Cycle

Within the carbon cycle, there are a number of processes that happen

- Respiration
- Combustion
- Photosynthesis

The carbon cycle is all of these processes by which carbon is naturally transferred to different stores



Climate Change

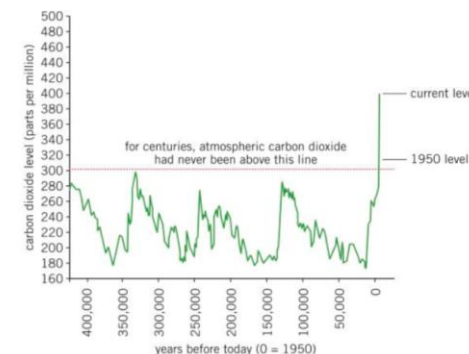
As the weather patterns change there are implications to the environment

Climate change can lead to ice caps melting, which then leads to a rise in sea levels and then flooding

There are ways that climate change can be prevented

- Using renewable energy resources
- Using cars less
- Buying and wasting less resources

Graphs alone cannot prove humans are responsible for climate change, but the majority of scientists now believe that human activity is a very likely cause



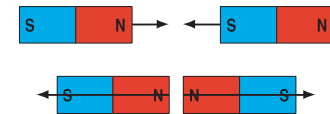
Key words

1	circuit breaker	A device that uses an electromagnet to break a circuit if the current is too big.
2	core (electromagnet)	Soft iron metal which the solenoid is wrapped around.
3	electric bell	A device that uses an electromagnet to make sound using a 'make and break' circuit.
4	electromagnet	A non-permanent magnet turned on and by controlling the current through it.
5	loudspeaker	A device that uses an electromagnet to make sound from a varying potential difference. Turns an electric signal into a pressure wave of sound.
6	magnet	A material with a magnetic field around it in which a magnetic material experiences a force.
7	magnetic field	A region in which there is a force on a magnet or magnetic material.
8	magnetic field lines	Imaginary lines that show the direction of the force on a magnetic material.
9	magnetic force	Non-contact force from a magnet on a magnetic material.
10	magnetic poles	The ends of a magnetic field, called north-seeking and south-seeking poles.
11	magnetise	To make a material magnetic.
12	permanent magnet	An object that is magnetic all of the time.
13	solenoid	Wire wound into a tight coil, part of an electromagnet.

Magnets

A **magnet** has two poles, a north and a south pole

- North poles **attract** south poles
- South poles **attract** north poles
- South poles **repel** south poles
- North poles **repel** north poles



Magnetic materials will experience a magnetic force when placed near a magnet, this is a type of non-contact force as the materials do not have to touch for the force to be apparent

The three magnetic metals are iron, nickel and cobalt

Magnetic fields

A **magnetic field** is an area where a magnetic material will experience a force.

A **permanent magnet** will have its own magnetic field.

Magnetic field lines represent the field, these always travel out of the north pole of the magnet, and into the south pole.

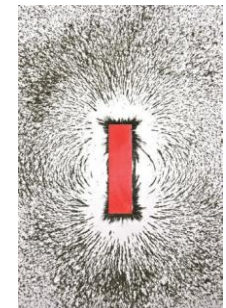
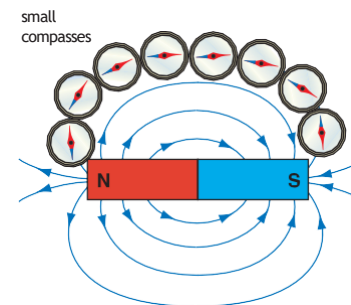
the closer together the magnetic field lines are, the stronger the magnetic field will be

We can find out the shape of a magnetic field in two ways:

- Using plotting compasses
- Using iron filings

The Earth has its own magnetic field, which acts like a giant bar magnet inside its core.

This magnetic field allows compasses to work when navigating around the Earth



Electromagnets

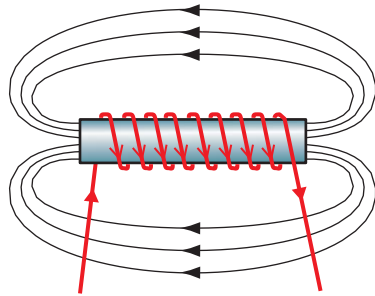
Electromagnets are made by wrapping a coil of wire around a magnetic **core**

Electromagnets only work when electricity is flowing through the coil, which means that they can be turned on and off

Electromagnets are also stronger than **permanent** magnets

The electromagnet will produce the same magnetic field shape as a bar magnet

iron core with current on

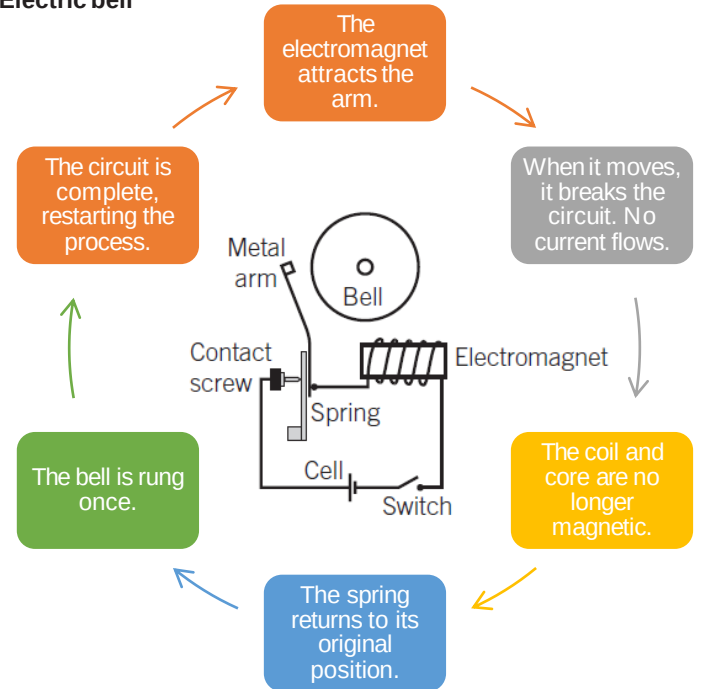


You can increase the strength of an electromagnet by:

- Increasing the number of turns on the coil around the core of the electromagnet
- Increasing the current which is flowing through the coil of wire
- Using a more magnetic material for the core, e.g. iron rather than aluminium

Using electromagnets

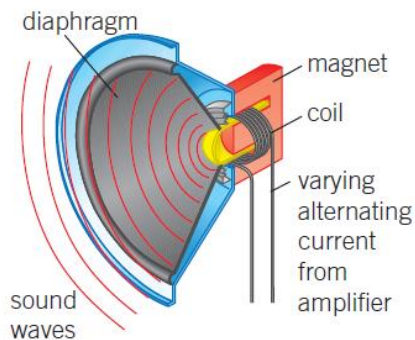
Electric bell



Loudspeakers

Loudspeakers use an electromagnet in order to generate sound.

A current passes through the coil and creates an electromagnet, this repels another permanent magnet which moves the cone in and out creating sound.



Circuit breakers

Circuit breakers detect large changes in current in a house, and will break a circuit.

When a large current flows, the electromagnet becomes strong enough to attract an iron catch which will break a circuit.

They can then be reset and used again.

This makes them suitable as an electrical safety device in a home.

Year 8 History: Knowledge Organiser – East India Company (c.1600 – 1858)



Key Dates

1600	Elizabeth I signed a Royal Charter founding the East Company.
1601	James Lancaster led the first voyage to India for the East Company. It established Britain's first trading post in India.
1607	William Hawkins is sent by James I to trade with Mughal Emperor Jahangir. Jahangir is not interested.
1612-1618	Sir Thomas Roe spends 4 years trying to negotiate with Jahangir. Jahangir only promises protection to British trade post at Surat.
1620s – 1750s	East India Company grows to have trading posts in Bombay, Calcutta and Madras. They trade in spices, cotton and precious stones and materials.
1707	Death of Emperor Aurangzeb leads to instability in the Mughal Empire.
1756	British and French fighting over Bengal. Creation of Black Hole of Calcutta.
1757	Battle of Plassey leads to British victory. Robert Clive (Clive of India) becomes Governor of Bengal. East India Company starts to rule significant part of India.
1770	Famine in Bengal.
1828	First Governor-General of India appointed by the British.
1830s	Tea plantations established in Assam to send tea to Britain.
1833	Slavery is banned in the British Empire.
1839-1842	Britain fights the Opium Wars with China. British victory means that China becomes a market for India goods.
1857-1859	Indian First War of Independence / Indian Uprising.
1874	East India Company formally dissolved by Act of Parliament. India is controlled directly by the British government under the British Raj.
1947	Indian independence and partition.

Key Words

Cause - An event which makes another event happen

Long-term cause - A cause which took place a long time ago / had been taking place over a long time.

Short-term cause - A cause which happened just before the event it triggered e.g. assassination of Franz Ferdinand.

Assam - An area to the northeast of India which borders the Himalayas.

Battle of Plassey - A battle between British forces led by Robert Clive (Clive of India) and Nawab Siraj-ud-daula of Bengal.

Bengal - An area to the east of India which now borders Bangladesh.

Black Hole of Calcutta - A prison where British people were trapped following an attack by Nawab Siraj-ud-daula.

British Raj - Name for the rule of Britain over India from 1874 to 1947.

East India Company - A British company established first for trading with India which later had its own army and ruled large areas of India such as Bengal.

Famine - A time where crops fail and people starve.

Mughal Empire - The name of the Muslim rulers of much of India from 1526-1761.

Nawab - A governor of an area under the Mughal Empire.

Opium - A drug made from poppy seeds. It is highly addictive.

Opium Wars - Wars fought from 1839-1842 between the British and the Chinese. The British victory effectively forced the Chinese to accept trade in opium and tea.

Plantations - Very large farms.

Voyage - A long journey by sea.

Key People

Elizabeth I - Queen of England 1558-1603. Signed the first charter which encouraged Britain to trade with India.

James Lancaster - Established Britain's first trading post in India.

William Hawkins - Sent by James I to trade with the Mughal Emperor Jahangir.

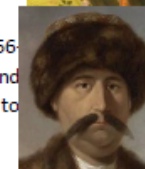
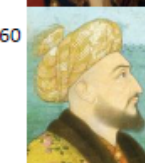
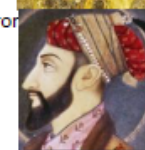
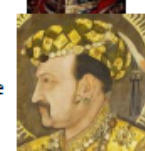
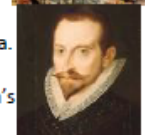
Emperor Jahangir - Mughal Emperor who ruled India from 1605-1627. He resisted British trade and stopped the British spreading.

Emperor Aurangzeb - Mughal Emperor who ruled India from 1658-1707. His death led to instability in India which allowed the British to take control.

Robert Clive - Also known as 'Clive of India' by traditional historians. Led the British forces at the Battle of Plassey and indirectly caused the Bengal famine.

Mir Jafar - Nawab of Bengal 1757-1760 and 1763-1765. He betrayed Nawab Siraj-ud-daula which enabled Robert Clive to defeat him at the Battle of Plassey.

Siraj-ud-daula - Nawab of Bengal 1756-1757. He was betrayed by Mir Jafar and his defeat at the Battle of Plassey led to the start of the British rule in India.

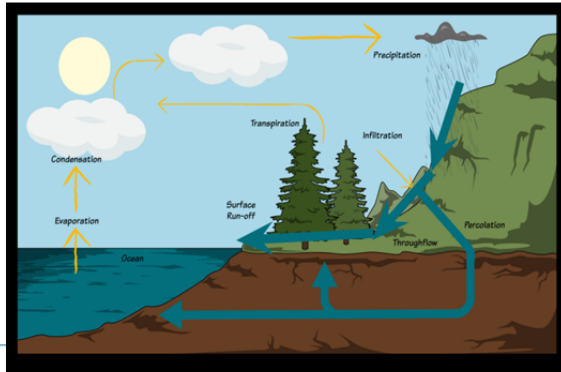


Babur (1483-1530)	Humayun (1530-1556)	Akbar the Great (1556-1605)
- Babur was the founder of the Mughal Empire in India - Battle of Panipat (1526) – Babur defeated Lodi the Sultan of Delhi and took control of northern India - Babur was a Muslim but under his rule Hinduism was tolerated and new Hindu temples were built with his permission	1530 - Humayun becomes the second Mughal Emperor following his father (Babur's) death - However, during his reign he struggled to maintain control of his empire. - March 1539, Humayun's half-brothers Prince Hindal and Prince Kamran rebelled against him, stormed the capital city of Agra and agreed to split the Mughal Empire between them.	- Akbar succeeded to the throne at 13 and was determined to expand the size of his Empire - he needed to either defeat the Rajputs (powerful Hindu rulers) or persuade them to join his empire - Akbar married the daughter one of the Rajput rulers and gained the loyalty of others by giving them important positions - However, other Rajputs resisted Mughal control and fought against Akbar
- Trade – under Babur's rule trade with the rest of the Islamic world was encouraged especially Persia - The importance of slavery in India reduced and peace was made with the Hindu kingdoms of southern India Tolerance - Babur showed tolerance towards other religions. His first act after conquering Delhi was to forbid the killing of cows because that was offensive to Hindus Money and taxes - Babur found it difficult to collect taxes from his kingdom. This made it difficult for him to raise money Library - Babur built a huge library of rare books and precious manuscripts.		Military success – Akbar's forces won a series of key battles to take control of Rajput territory: 1567 – Akbar's forces defeated the Rana of Mewar and took over Rajasthan 1572 – Akbar took control of Gujarat greatly increasing the wealth of the Mughals 1576 – Akbar invaded Bengal and executed the Sultan after her refused to accept Mughal rule 1585 – Akbar invaded the mountainous region of Kashmir, where the ruler surrendered 1590s – the Deccan in the south of India was the last region that Akbar brought under Mughal control There were five Muslim sultans who refused to pay tribute to the Mughals and this led to years of fighting until they were defeated in 1600
Culture - Babur had great ideas about civilisation, architecture and administration. He even wrote an autobiography telling the story of his life, <i>The Babur - Namah</i>. Military - Babur's forces defeated an army of 200,000 led by the Rajput Hindu princes at the Battle of Kanua (1527) After the battle, Babur continued to strengthen his control of Hindustan by capturing important forts such as Chanderi and destroying other challengers such as the Sultan of Bengal.	1540 – Humayun was defeated by Sher Shah and had to flee into exile 1545 – Humayun gathered a new army to confront his rebellious half-brothers with the help of the ruler of Persia 1545-1553 – eight years of fighting before Humayun was able to regain control of his empire 1555 – the Mughals took control of Agra and Delhi re-establishing the Mughal Empire 1556 – Humayun died after tripping on the stairs and cracking his skull	Administration - Akbar divided his Empire into provinces. Each province was ruled by a Governor, financial official and military commander Akbar also recruited new mansabdars (Nobles) who were given lands to rule for Akbar and served in his army. Akbar introduced a much more effective tax collection system. Religion – Akbar was tolerant of other religions, he married Hindu princesses and abolished the jizya tax on non-Muslims

Jahangir (1605-27) and Nur Jahan	Shah Jahan (1628-1658)	Aurangzeb (1658-1707)
▪ Religion - Jahangir was the fourth Mughal Emperor and continued Akbar's tolerant religious policies and appointed Hindus to important positions in his government ▪ Corruption was a big problem during his rule - the mansabdars began to collect more taxes from the peasants than they were allowed and kept the money for themselves. ▪ Foreign traders - in the early 17th century huge numbers of Portuguese, Dutch and English traders were setting up trading posts in the Mughal Empire to buy cotton and spices to sell for profit in Europe. ▪ Jahangir was unimpressed with these traders and didn't try to encourage the manufacture and sale of goods or to develop a navy to develop trade. ▪ Scandal - it was well known that Jahangir drank too much and took too much opium. He even had a coin minted showing him drinking a glass of wine, outraging Muslims.	▪ Shah Jahan was a capable ruler who ruthlessly crushed the rivals to his throne after the death of his father Jahangir ▪ He boosted the income he received as emperor by increasing taxes ▪ Between 1630-32 there was a famine in Gujarat and the Deccan – Shah Jahan set up food banks and spent 150,000 rupees helping the poor  Photograph of the Taj Mahal	Aurangzeb was the sixth ruler of the Mughal empire and the last emperor before British rule. Aurangzeb has been criticised for helping to destroy the empire. Religious tolerance came to an end and he reintroduced the jaziya tax on non-Muslims and ordered that Hindu temples should be destroyed. This upset many of his subjects. Rebellions – as a result of his religious changes there were a series of rebellions during Aurangzeb's reign: ▪ Deccan – Shivaji, a Hindu, led raids that captured Mughal forts and in 1674 he was crowned king of the Marathas ▪ Jat revolt (1669) near Delhi after 20,000 men joined a rebellion over paying taxes to the Mughals ▪ Sikh rebellion – Guru Tegh Bahadur was executed by Aurangzeb leading to a huge rebellion amongst Sikhs in northern India ▪ Marwar rebellion (1678) – Hindu rebellion after Aurangzeb tried to impose a Muslim ruler on the powerful state of Marwar
Nur Jahan – wife of Jahangir and the most powerful woman in 17th century India ▪ She married Jahangir in 1611 and for many years ruled the Mughal Empire as Empress alongside her husband ▪ In 1617, gold and silver coins, which bore her name opposite that of Jahangir, started circulating. ▪ Court chroniclers, foreign diplomats and visitors soon started to note her unique status. ▪ Nur lived a life that was unusual for women at the time - hunting, issuing imperial orders and coins, designing public buildings, taking measures to support poor women	Architecture – Shah Jahan spent an estimated 30 million rupees building mosques, hospitals, schools, palaces and forts across his empire Taj Mahal was built to express his Muslim faith and as a tomb for his favourite wife Mumtaz Mahal who died giving birth. It took 21 years to build. Military – Shah Jahan sent his son Aurangzeb to defeat the rulers of Bundelkhand in north-east India after they were disloyal. Hugli - Shah Jahan destroyed a Portuguese base killing thousands after they upset the emperor by taxing Indian ships. Bijapur and Golconda – two wealthy states were crushed after refusing to accept Shah Jahan's lordship.	End of the Empire – during the 18th century divisions in the Mughal empire were exploited by the British East India Company: - Mughal empire was attacked by Nader Shah from Persia (1739) and Ahmad Shah Abdali from Afghanistan (1748-67) - Aurangzeb's successors were too weak and there were numerous plots and murders as different rulers tried to seize the throne - The Empire had become too large to be controlled by one ruler from the centre - Mughal rulers became weak and they struggled to maintain control over India

The Water Cycle

The water cycle is the journey water takes as it moves from the land to the sky and back again. It follows a cycle of evaporation, condensation and precipitation. In the diagram below a river would usually be part of the surface run off.



The River Valley

The land near the **source** is **high and steep**. Heading towards the mouth the land gets **lower and flatter**. The narrow **V-shaped valleys** open out, eventually becoming wide, flat **flood plains**.

Upper course – steep V shape downward erosion.	Middle course – U shaped lateral erosion.	Lower course – open U shape (wide) lateral erosion and deposition.
Features - rapids - waterfalls	Features meanders	Features - oxbow lakes - floodplains - levees - deltas

The River Channel

All rivers tend to follow the same pattern; as they flow from the source to the mouth; they start off narrow and **get wider**; they start off straight and end up **meandering**.



Upper Course of a River

Near the source, the river flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.

Formation of a Waterfall

- 1) River flows over alternative types of rocks.
- 2) River erodes soft rock faster creating a step.
- 3) Further hydraulic action and abrasion form a plunge pool beneath.
- 4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.
- 5) Waterfall retreats leaving steep sided gorge.

Middle Course of a River

Here the gradient gets gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

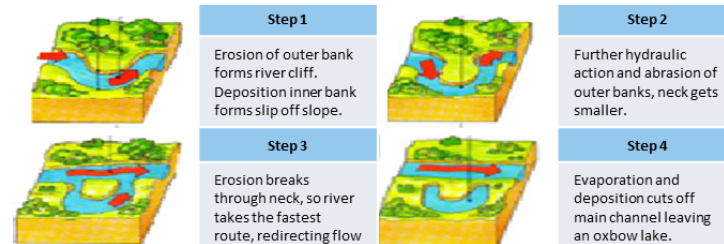
Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.

Key Terms

Condensation	Water vapour cools and is stored as a liquid in clouds.	Meander	A pronounced bend in a river.
Discharge	The quantity of water that passes a given point on a stream or river-bank within a given period of time.	Ox-bow lake	A horse-shoe shaped lake which has been cut off from a meandering river.
Evaporation	Water lost from the ground's surface.	Precipitation	Moisture falling from the atmosphere - as rain, hail, sleet or snow.
Flood	Occurs when river discharge exceeds river channel capacity and water spills out of the channel onto the floodplain and other areas.	Surface run-off	Water flowing on top of the ground, usually in rivers and streams.
Flood plain	The relatively flat area forming the valley floor on either side of a river channel, which is sometimes flooded. Found in the lower course of a river.	Transpiration	Water lost through pores in trees and plants.
Gorge	A narrow, steep sided valley, often formed as a waterfall retreats upstream.	Tributary	A smaller stream or river that flows into a larger river
Infiltration	The flow of water into soil	Waterfall	Sudden descent of a river or stream over a vertical or very steep slope in its bed. Found in the upper course of a river.

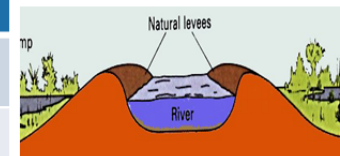
Formation of Ox-bow Lakes



Formation of Floodplains and levees

When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials build up to form natural levees.

- ✓ Nutrient rich soil makes it ideal for farming.
- ✓ Flat land for building houses.

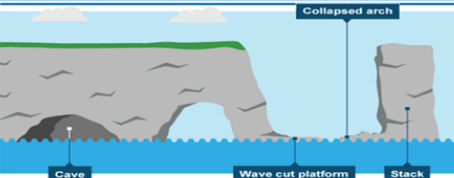


River Management Schemes

Soft Engineering	Hard Engineering
Afforestation – plant trees to soak up rainwater, reduces flood risk. Demountable Flood Barriers put in place when warning raised. Managed Flooding – naturally let areas flood, protect settlements.	Straightening Channel – increases velocity to remove flood water. Artificial Levees – heightens river so flood water is contained. Deepening or widening river to increase capacity for a flood.

Deposition

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.



- 1) Hydraulic action widens cracks in the cliff face over time.
- 2) Abrasion forms a wave cut notch between HT and LT.
- 3) Further abrasion widens the wave cut notch to form a cave.
- 4) Caves from both sides of the headland break through to form an arch.
- 5) Weather above/erosion below – arch collapses leaving stack.
- 6) Further weathering and erosion leaves a stump.

Coastal Defences

Hard Engineering Defences

Groynes	Wood barriers prevent longshore drift, so the beach can build up.	✓ Beach still accessible. ✗ No deposition further down coast = erodes faster.
Sea Walls	Concrete walls break up the energy of the wave. Has a lip to stop waves going over.	✓ Long life span ✓ Protects from flooding ✗ Curved shape encourages erosion of beach deposits.
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.	✓ Cheap ✓ Local material can be used to look less strange. ✗ Will need replacing.

Soft Engineering Defences

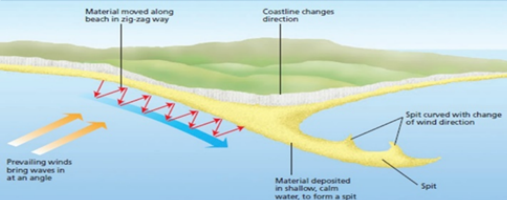
Beach Nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs.	✓ Cheap ✓ Beach for tourists. ✗ Storms = need replacing. ✗ Offshore dredging damages seabed.
Managed Retreat	Low value areas of the coast are left to flood and erode naturally.	✓ Reduce flood risk ✓ Creates wildlife habitats. ✗ Compensation for land.

Formation of Bays and Headlands

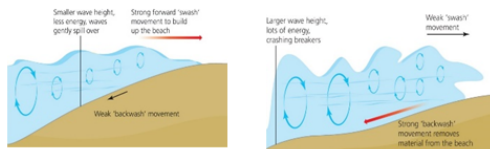


- 1) Waves attack the coastline.
- 2) Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.
- 3) More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

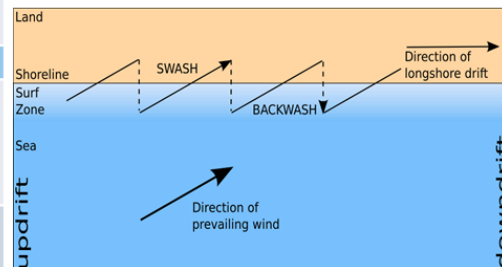
Formation of Coastal Spits - Deposition



- 1) Swash moves up the beach at the angle of the prevailing wind.
- 2) Backwash moves down the beach at 90° to coastline, due to gravity.
- 3) Zigzag movement (Longshore Drift) transports material along beach.
- 4) Deposition causes beach to extend, until reaching a river estuary.
- 5) Change in prevailing wind direction forms a hook.
- 6) Sheltered area behind spit encourages deposition, salt marsh forms.



What is the longshore drift?



Why is Miami, Florida threatened by the sea?

Miami is located in south-eastern Florida, which is a peninsula on the the South-east coast of the USA.

Since 1870, global sea levels have risen by an average of 20 cm, but **Southeast Florida's local levels have risen by 30 cm.** By 2060, it could double or triple that.

Impacts of sea level rise in Miami

- Prolonged flooding after storms damages the city's drainage system (which would cost USD \$206 million to repair).
- Porous limestone ground makes seawalls incapable of stopping salt water from infiltrating aquifers, negatively impacting agriculture and drinking water reserves.
- Beaches are eroding and domestic sand resources are dwindling. This impacts tourism and increases erosion.
- Hurricane-driven storm surges are more frequent and higher causing massive flooding.

Responses to sea level rise in Miami

- To build a network of huge pumps that force water out of flood-prone areas and into Biscayne Bay. There are over 30 pumps today, with 90 planned in total.
- The estimated cost for 3 pumps, including land acquisition, is USD \$ 200 million.
- The Army Corps of Engineers estimated that the equivalent of 10,781 football fields covered in 30 cm of sand would be necessary to sustain Miami's beaches for the next 50 years.
- Less affluent areas do not have the financial resources to fight the inevitable. Even if they did, no sea wall or other barrier would be able to keep water from bubbling up through limestone.

Why are sea levels rising?

- Increase in sea level due to melting of ice sheets; this will remove water stored in a frozen state on land and enable it to flow to the sea increasing amount of water in the sea; relates to underlying cause – global warming and causes of this, e.g. increase in carbon dioxide.

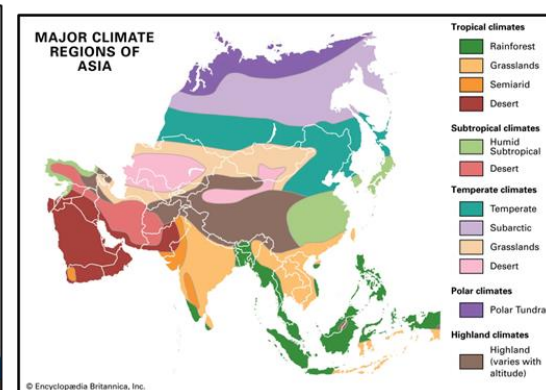
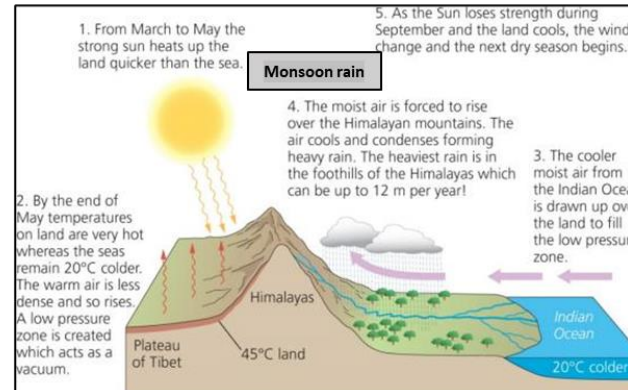


What is GIS?

■ GIS stands for Geographical Information Systems and is the name for electronic maps with information plotted on them.

■ It is when information is plotted on to maps in 'layers'. Often these layers can be turned off and on to present information so that you can see the relationship between different layers.

- Mount Everest is the highest point on earth, over 8,848 metres above sea level.
- The Dead Sea is the lowest point on earth at -395 metres.
- The Arabian Desert in Saudi Arabia is the world's largest continuous sandy desert.
- Asia has the longest coastline of any continent, some 62,800 km in length.
- The Yangtze is one of the longest rivers in the world - over 6,300 km long.
- There are 77 volcanoes on the mainland with the most active ones are in Indonesia. Japan has had some of the largest earthquakes in the world.
- The official language of China, Mandarin, is the world's most spoken language. Around 14% of the world's population speak this language.
- Asia has 9 of the top 10 largest cities in the world. Tokyo is the largest with a population of over 37 million people.
- Indonesia is the world's largest archipelago, made up of over 17,000 islands.
- Japan and Singapore are in the top three countries for the highest life expectancy rates in the world. Here people are expected to live to 85 years.



Pakistan Flood, 2022 – case study

An introduction to the devastating floods across swathes of Pakistan.

Introduction:

More than one-third of Pakistan is under water due to unprecedented levels of flooding. Estimates suggest that 1,265 people have been killed, with 6,000+ injured. The scale of the tragedy is already being compared to the devastating floods of 2010 when more than 2,000 people were killed, marking the event as the deadliest in Pakistan's history.

There are four provinces in Pakistan: Balochistan, Khyber Pakhtunkhwa, Punjab, and Sindh plus the Islamabad Capital Territory. The Sindh province is bisected by the Indus.

Pakistan's largest river, which flows from the upstream northern highlands of the Himalayas down to the Arabian Ocean.

Glacial meltwater from the Himalayas and Karakoram mountain range plus snow melt and monsoon rains all supply the Indus with water. The Indus is 3,200 km long and has a large discharge of 5,533 m³/s (approximately twice as much as the river Nile in Egypt, placing it 52nd in the world). Flooding often occurs in the southeast of the country, in the Sindh province.

However, the average discharge for the Indus does not accurately depict the situation in Pakistan because there are extreme spikes in flow, discharge, and flood water at times throughout the year. For example, last week the Indus burst its banks and as much as 17,000 m³/s of water was discharged. This was caused by Pakistan receiving 190% more rainfall from June to August (compared to average rainfall for this time period over the past 30 years).



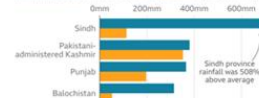
The Sindh province to the south of the country has been severely impacted, as it has a wide flat central plain (the Indus river valley), covering 51,800 km².

Sindh Province:

The main economic industry of Sindh is agriculture, which the Indus river has supported for millennia.

The flow of the Indus is typically high between mid-July and mid-August due to environmental factors. However, this year rainfall in Sindh has been exceptionally heavy in recent months.

Rainfall well above average in most regions
Rainfall in 2022 compared to average rainfall, 1 Jul-30 Aug



Is climate change to blame?

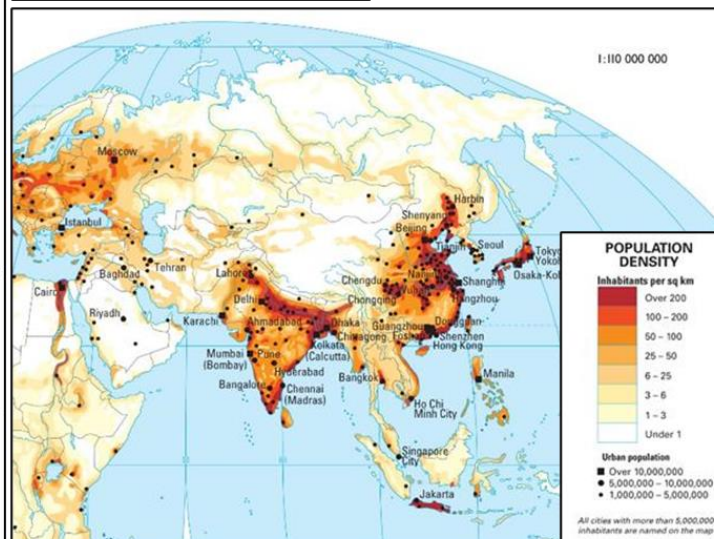
Recent heavy rainfall is only part of the story. This flood event is widely being reported as a climate-related disaster due to extreme changes in monsoon behaviour, precipitation patterns, and melting glaciers. These contributing factors have been caused by increases in global temperature. The UN secretary general, António Guterres, emphasised the link to climate change saying 'today, it's Pakistan. Tomorrow, it could be your country' signalling to the world that more needs to be done in the fight against climate change.

It is likely that climate change affected the intensity of the monsoon as record amounts of rain fell across the country throughout August (as much as 500-700% more than usual). South Asia has warmed by around 0.7°C since 1900. This leads to heavy monsoon rain because the warmer atmosphere holds more moisture.

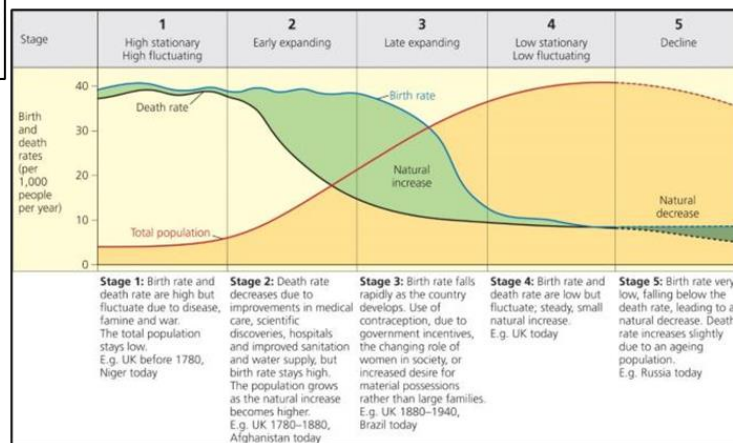
The likelihood of seeing phenomena that may cause severe monsoon conditions is likely to increase. This year, the La Niña event in the Pacific and bends in the jet stream created perfect conditions for the unusual monsoon rains.

Glacial melt is a growing problem around the world. In Pakistan this is a particular problem as the country has more glaciers than anywhere else in the world. (There are 7,000) excluding the polar regions. This year there has been triple the usual amount of glacial lake outbursts, causing catastrophic flooding.

Population distribution and density in Asia



Demographic Transition Model – population change over time



How is Asia becoming the most influential part of the world?

The balance of world trade describes the movement of imports and exports across the world.

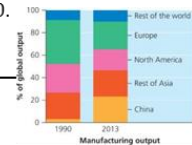
This balance is now moving eastwards. For example, in 1995, the USA had captured nearly 25 per cent of global trade in hi-tech goods, while China had only 3 per cent.

By 2005, the US share had fallen to 15 per cent, while China's share had risen to 15 per cent.

The emergence of China as a major global trading hub has begun to change not only the size of its trade, but also the number of its significant trading partners.

If China's growth continues, the size of its economy will overtake that of the USA by the late 2020s.

By 2050, the Chinese economy could be almost 50 per cent bigger than the USA's, while the Indian economy may follow suit and surpass the USA a few years after 2050.



Responses (management) of the flood

	Advantages	Disadvantages
Do nothing	- Inexpensive – good for Pakistan, an EDC country - Easy to implement	- Does not reduce the risk of flooding to people. - May mean more people are affected by floods in the future.
Build flood defences	- Effectively protect people from future flood events. - Can create sustainable energy. - Natural defences (trees) can work.	- Can look ugly as predominantly made from concrete. - Can take a number of years to build.
Improve planning, education and warning systems.	- Gives people responsibility. - Can protect a large number of people for years to come. - Cost spread out.	- Takes a number of years. - Requires people to 'buy in' to the cultural shift.
Tackle Climate Change	- Can help countries all over the world with similar events. - Will help with other environmental issues.	- Previous attempts have been unsuccessful. - Difficult to get lots of countries to work together.

Some countries in Asia are at stage 2 of the model with death rate falling but a high birth rate, e.g. Afghanistan.

Many countries in Asia have moved from stage 2 to stage 3 of the DTM as their death rates and birth rates have fallen, although remains high enough to cause population to increase, e.g. India.

Some countries are more economically developed and so they are at a later stage of the model, e.g. South Korea is at stage 4 and Japan is at stage 5.

CORE					
Time phrases/Sequencers		Key verb phrases		Connectives	
normally	normalement	I have	j'ai	but	mais
often	souvent	I have not	je n'ai pas de	and	et
usually	d'habitude	I am	je suis	because	car/ parce que
from time to time	de temps en temps	I am not	je ne suis pas	also	aussi
sometimes	quelquefois/parfois	I would like	je voudrais	however	cependant
tomorrow	demain	it is	c'est	therefore	donc
next week	la semaine prochaine	it is not	ce n'est pas	as	comme
Summer / Autumn	en été / en automne	there is	il y a	or	ou
Winter / Spring	en hiver / au printemps	there is not	il n'y a pas de	however	pourtant
morning/afternoon/evening	le matin/l'après-midi/le soir	it will be	ce sera	on the other hand	par contre
then	puis	I'm going to....	je vais +infinitive	fortunately	heureusement
always/still	toujours	you must	on doit +infinitive	unfortunately	malheureusement
at the moment	en ce moment	you must not	on ne doit pas +infinitive	in addition	en plus
later	plus tard	you can	on peut +infinitive		
in the future	a l'avenir	you cannot	on ne peut pas +infinitive	Negatives	
yesterday	hier	it was	c'était	not	ne....jamais
last night	hier soir	it wasn't	ce n'était pas	never	ne...pas
last week	la semaine dernière	there was	il y avait	Comparisons	
last year	l'année dernière	there wasn't	il n'y avait pas de		
next	ensuite	it would be	ce serait	more... than	plus ... que
firstly	d'abord	it would not be	ce ne serait pas	less... than	moins ... que
after	après ça	if I was rich	si j'étais riche		
before	avant	in an ideal world	dans un monde idéal		
lastly	enfin / finalement	in my dreams	dans mes rêves		
Quantifiers/ Intensifiers		Opinions		Idioms	
very	très	In my opinion	à mon avis / selon moi	How awful !	Quelle horreur !
too	trop	I think that	je pense que	What luck !	Quelle chance !
quite	assez	I Like	j'aime	What a surprise !	Quelle surprise !
a bit	un peu	I love	j'adore	What an idiot!	Quel imbécile !
really	vraiment	I don't like	je n'aime pas	It's brilliant !	C'est le pied !
a lot	beaucoup	I hate	je déteste	It's not my thing !	Ce n'est pas mon truc !
		I prefer	je préfère	It's a waste of time!	C'est une perte de temps !
		My favourite ... is	ma/mon.... préféré(e) est	It's a waste of money!	C'est une perte d'argent !
		I find that	je trouve que		

CHALLENGE					
Time phrases/ Sequencers		Key verb phrases		Opinions	
today	aujourd'hui	you can see	on peut voir	for me	d'après moi
each/every	chaque	if it is	si c'est	I believe that	je crois que
currently	actuellement	there would be	il y aurait	according to...	selon...
the next day	le lendemain	there would not be	il n'y aurait pas de	I really hate	j'ai horreur de
in my dreams	dans mes rêves	you could	on pourrait +infinitive	I really love	j'apprécie
in an ideal world	dans un monde idéal	you couldn't	on ne pourrait pas	I can't stand	je ne supporte pas
when I was little	quand j'étais petit (e)	you should	on devrait +infinitive	my friends say that	mes copains disent que
when I'm older	quand je serai plus âgé (e)	you shouldn't	on ne devrait pas	my parents say that	mes parents disent que
for 5 years	depuis 5 ans	you must	il faut +infinitive	my teachers say that	mes profs disent que
since I was 5 years old	depuis l'âge de 5 ans	you must not	il ne faut pas	my mum tells me that	ma mère me dit que
				my dad tells me that	mon père me dit que
Quantifiers/ Intensifiers		Negatives		I would say	je dirais que
so	si	no...more/longer	ne... plus	I like /love it / them	j'aime/j'adore ça
rather	plutôt	nothing	ne... rien	I am for	je suis pour
extremely	extrêmement	no one/nobody	ne... personne	I am against	je suis contre
frankly	franchement	neither ...nor	ne... ni... ni	I agree with	je suis d'accord avec
hugely	énormément			I disagree with	je ne suis pas accord avec
incredibly	incroyablement			what I like is	ce que j'aime c'est
				it seems that	il semble que
				as far as... is concerned	en ce qui concerne...
Connectives		Comparisons/ Superlatives		Idioms	
nevertheless	néanmoins	best	meilleur (e)	Although it is...	Bien que ce soit...
whereas	tandis que	worst	pire	That's life !	C'est la vie !
even if	même si	the best thing is	la meilleure chose est	What a shame !	Quel dommage !
furthermore	de plus	the most important	la chose la plus	What a disaster !	Quelle catastrophe !
since	puisque	thing is	importante est	What a pain !	Quel ennui !
not at all	pas du tout	what I like the most is	ce que j'aime le plus est	It was so boring !	C'était la barbe !
				I was over the moon!	J'étais aux anges !
				I was bored to death!	Je m'ennuyais à mourir !
				I've had enough!	J'ai le cafard !
				I was so fed up!	J'en avais marre !

CORE					
Time phrases / Sequencers		Key verb phrases		Connectives	
normally	normalmente	I have	tengo	but	pero
often	a menudo	I have not	no tengo	and	y
usually	generalmente	I am	soy / estoy	because	porque / ya que
from time to time	de vez en cuando	I am not	no soy / estoy	also	también
sometimes	a veces	I would like	me gustaría	however	sin embargo
tomorrow	mañana	it is	es / está	therefore	por lo tanto / por eso
next week	la semana próxima	it is not	no es / está	as	como
summer / autumn	en verano / otoño	there is	hay	or	o
winter / spring	en invierno / primavera	there is not	no hay	however / although	aunque
morning/afternoon/evening	por la mañana/ tarde/ noche	it will be	será	on the other hand	por otro lado
then	luego / después	I'm going to	voy a + infinitive	fortunately	por suerte
always/still	siempre / aún	you must	se debe + infinitive	unfortunately	por desgracia
at the moment	en este momento / ahora	you must not	no se debe + infinitive	in addition	además
later	más tarde / después	you can	se puede + infinitive		
in the future	en el futuro	you cannot	no se puede + infinitive	Negatives	
yesterday	ayer	it was	fue	not	no...
last night	anoche	it wasn't	no fue	never	no... nunca
last week	la semana pasada	there was	había	Comparisons	
last year	el año pasado	there wasn't	no había		
two years ago	hace dos años	it would be	sería	more... than	más... que
next	luego	it would not be	no sería	less... than	menos... que
firstly	primero	if i was rich	si fuera rico/a		
after	después (de)	in an ideal world	en un mundo ideal		
before	antes (de)	in my dreams	en mis sueños		
lastly	finalmente				
Quantifiers / Intensifiers		Opinions		Idioms	
Very	muy	In my opinion	en mi opinión	How great !	¡ Qué bien !
Too	demasiado	I think that	pienso que	How bad !	¡ Qué mal !
Quite	bastante	I like	me gusta(n)	How funny !	¡ Qué divertido !
A bit	un poco	I love	me encanta(n)	How cool !	¡ Qué guay !
so	tan	I don't like	no me gusta(n)	How boring / annoying !	¡ Qué aburrido! ¡Qué rollo !
Really	<i>adjective ending -ísimo/a(s)</i>	I hate	odio	How dreadful !	¡ Qué horror !
A lot	mucho	I prefer	prefiero	It's crazy !	¡ Es una locura !
		My favourite is	mi... favorito/a es...	It's a waste of time!	¡ Es una pérdida de tiempo !
		I find it	me parece	It's a waste of money!	¡ Es una pérdida de dinero !

CHALLENGE					
Time phrases / Sequencers		Key verb phrases		Opinions	
today	hoy	you can see	se puede(n) ver	for me	para mí
each/every	cada	if it is	si es	as I see it	a mi modo de ver / a mi juicio...
currently	actualmente	there would be	habría	I believe that	creo que
the next day	al día siguiente	there would not be	no habría	according to...	según / para...
in my dreams	en mis sueños	you could	podría + infinitive	I really hate	detesto
in an ideal world	en un mundo ideal	you couldn't	no podría + infinitive	I really love	me chifla/ me mola
when i was little	cuando era pequeño/a	you should	debería + infinitive	I can't stand	no aguanto / no soporto
when i'm older	cuando sea mayor	you shouldn't	no debería + infinitive	my friends say that	mis amigos dicen que
for 5 years (now)	desde hace 5 años	you must	hay que + infinitive	my parents say that	mis padres dicen que
since i was 5 years old	desde que tenía 5 años	you must not	no hay que + infinitive	my teachers say that	mis profesores dicen que
				my mum/dad tell me that	mi madre /mi padre me dice que
Quantifiers / Intensifiers		Negatives		i would say	diría que
so	tan	no...more/longer	ya no...	I like/love it / them	me gusta(n) / me encanta(n)
rather	bastante	nothing	no... nada	I am for	estoy a favor de
extremely	extremadamente	no one/nobody	no... nadie	I am against	estoy en contra de
frankly	francamente	neither... nor	no... ni...	I agree with	estoy de acuerdo con
entirely/ totally	totalmente			I disagree with	no estoy de acuerdo con
incredibly	increíblemente			what I like...	lo que me gusta..
				it seems that	me parece que
				as for me	por mi parte / en cuanto a mí
Connectives		Comparisons / Superlatives		Idioms	
nevertheless	aun así	best	mejor	No more excuses !	¡ Basta de excusas !
whereas	mientras que	worst	peor	I am fed up !	¡ Estoy harto/a !
even if	aunque	the best thing is	lo mejor es	What a shame !	¡ Qué lástima !
additionally	asimismo	the most important is	lo más importante es	What a disaster !	¡ Qué desastre !
since	dado que / ya que	what I like the most is	lo que más me gusta es	It sounds funny /curious !	¡ Suena muy gracioso / curioso !
not at all	en absoluto			A dream come true !	¡ Es un sueño hecho realidad !
				It is the most exciting thing	¡ Es lo más emocionante que he visto
				I have ever seen!	jamás !
				It has been the most	¡ Ha sido la experiencia más
				important / unforgettable	importante / inolvidable de mi vida !
				experience of my life!	
				I have enjoyed it a lot	¡ Lo he disfrutado muchísimo !

Key word	Description
Short term effects of exercise	Physical changes that occur in the body when you begin exercising.
Long term effects of exercise (physical)	Physical changes that occur in the body after months of following a training programme.
Heart rate	The number of times the heart beats per minute
Oxygen	A gas we breathe in and transport to our muscles and organs to use to create energy
Respiratory rate	The number of breaths taken in one minute
Flexibility	The range of movement around a joint
Hypertrophy	A muscle increasing in size achieved through exercise
Efficient	Performing without wasting energy
Fitness	Being physically fit and healthy. Fitness components include cardiovascular endurance, muscular endurance, speed, flexibility, agility, power and strength
Body mass index	Indicator of how healthy your weight is. Calculation: weight (kg) divided by height (m ²)
Body composition	The percentages of bone, fat, muscle and water in your body
Energy balance	The balance of energy (calorie) intake with energy (calorie) expenditure
Calories	A unit of energy consumed from food or drink.

Short term effects of exercise	Long term effects of exercise
Increase in heart rate	Increase in heart size (cardiac hypertrophy)
Increase in respiratory rate	Improved fitness
Increase in oxygen delivery to muscles	Increased bone strength
Increase in temperature	Reduced risk of coronary heart disease
Increase in flexibility	Reduced risk of diabetes
	Improved body composition

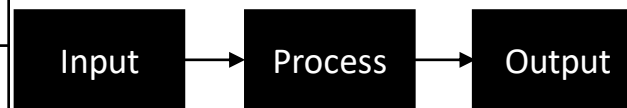
Key word	Description
Health	A state of complete physical, mental and social well-being, not merely the absence of disease.
Physical health	Good physical fitness, good nutrition, self care and high-quality sleep
Mental health	Ability to cope with stress and work productively
Emotional health	How we think and feel, how we cope with life events and acknowledge our emotions. It doesn't mean being happy all the time
Social health	Ability to form good relationships and adapt to different situations.
Wellbeing	A state of being comfortable, healthy and happy
Carbohydrates	Foods which provide energy for high intensity exercise, e.g. potatoes, pasta, bread, rice, bananas
Proteins	Foods which provide growth and repair for the body/ muscles, e.g. chicken, fish, beans
Fats	Foods which provide energy for low intensity exercise, protection for organs and insulation, e.g. butter, oil, cheese
Vitamins	Needed for our bodies to function properly and fight disease. E.g. vitamin C in oranges.
Energy production	Using glucose and oxygen to create energy (for exercise) in the muscles.
Hydration	Drinking enough water to maintain body temperature, prevent infections and improve sleep.
Self esteem	A person's overall sense of self-worth and value.
Anxiety	A feeling of unease, worry or fear
Endorphins	Hormones produced in the brain to relieve stress and pain and cause feelings of happiness.

Health benefits of exercise			
Physical health	Mental health	Social health	Emotional health
- Improved fitness - Increased bone density - Reduced risk of coronary heart disease and diabetes - Weight management	- Improved concentration - Improved confidence and self esteem - Reduced stress & anxiety - Improved sleep	- Make friends - Improved communication skills - Improved leadership - Improved teamwork skills and reciprocity - Responsibility - Reciprocity	- Improved happiness / mood - Hormones released (endorphins)

Key vocabulary	
CPU	The central processing unit is computer hardware. It executes programs and manages all other hardware in the computer system.
Clock Speed	The number of instructions a processor can carry out each second
Cores	A processing unit found inside the CPU. Multiple programs can work in parallel to each other.
Fetch - Decode - Execute Cycle	The cycle used to fetch instructions from main memory, load relevant data, decode the instruction and fully execute the instruction repeats to complete a program.
Primary Memory	Memory used to store data and instructions that are required by the CPU.
RAM	Random Access Memory is volatile memory used to store data and instructions which are needed by the CPU. Also referred to as main memory.
Volatile Storage	which needs to have power to store data. If power is lost, data is lost.
Non - Volatile Storage	which does not lose its contents when the power is lost
Secondary Storage	A non-volatile storage medium which stores files and programs. Examples include the hard drive (HDD) and solid state drives (SSD).

CPU Performance	
Clock speed	How fast a processor processes instructions. Normally measured in Megahertz or Gigahertz.
Cache Size	The “size” of the cache is the amount of main memory data it can hold.
Number of cores	Determines how many tasks can be completed at the same time.

Types of Secondary Storage	
Magnetic devices	Magnetic disks are read and written to with a moving head inside the disk drive. They often contain moving parts and are susceptible to damage. Magnetic devices can be either internal or portable.
Solid State devices	SSD has no moving parts. It retains an electronic charge using logic gates. Examples include SD cards and USB memory sticks. Also referred to as flash storage.
Optical devices	Optical media includes CD, DVD and Blu-Ray disks. Lasers are used to read and write data to a disk. Data is stored on tracks around the disk as a series of pits which represent binary code.



Operating system main tasks
Allow software to communicate with the hardware
To provide a user interface for the user
To manage the use of memory and the opening, closing, saving and deleting of files
To provide features that look after the security of the computer
To control peripherals (such as keyboards, mice, monitors, printers etc)

Utility Software Vocabulary	
Encryption software	Encryption of data to prevent anyone from gaining unauthorised access to the system and reading the data.
Defragmentation	Reorganising files on the surface of a disk to create large areas of free space and eliminate unused fragments.
Lossy / lossless compression	Software to compress data to use less space in memory, or prepare for sending via the internet
Backup	A technique used to make copies of data in case of data loss or damage.

Keywords

Input	When the user enters data into a program
Output	When the program displays data to the user
Variable	An area data can be stored whilst the program is running
Concatenation	The operation of joining together two strings
Casting	When you convert from one data type into another
Sequence	Instructions being executed in order
Selection	When a program can make a choice about which line to execute based on a condition
Iteration	When a program is able to repeat blocks of code multiple times

Common Mistakes

<pre>Total = number1 + number2 print(total) Print(total)</pre>	Capital letters in variables names and commands
<pre>number1 = 25 number2 = 36 total = numbr1 + number2</pre>	Spelling of variable names and commands
<pre>print("Hello World) print("Hello World</pre>	Brackets and braces come in pairs, make sure that they are opened and closed.

Frequently used commands

command	comment
print()	Used to display to the screen
input()	Allows user to enter value
int()	Converts value to integer
if <criteria>: ... elif <criteria>: ... else: ...	Selection statement used to give choices (or paths) that the program can follow depending on a decision.
while <criteria>: ...	Condition controlled iteration, when you don't know how many iterations need to take place.

Assignment Operators

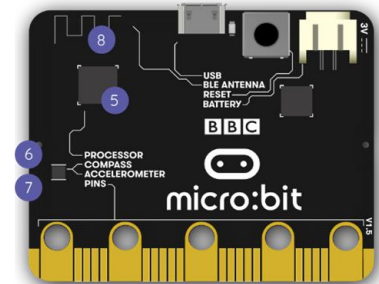
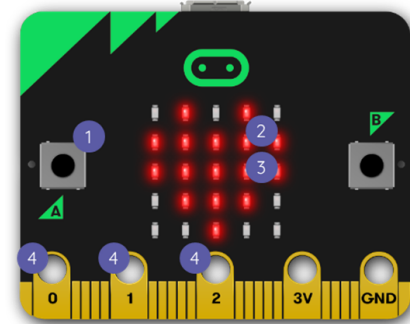
Description	Operator
Assign	=
Add then reassign	+=
Subtract then reassign	-=
Divide then reassign	/=
Mod then reassign	%=
Integer divide then reassign	//=

Relational Operators

Description	Operator
Equal to	==
Less than	<
Greater than	>
Not equal to	!=
Less than or equal to	<=
Greater than or equal to	>=

Key Terms	
Micro:bit	An ARM-based embedded system designed by the BBC for use in computer education in the uk
LED	Light Emitting Diode. Allows you to display text, numbers and images.
Buttons	Allows you to detect when the two buttons (A) and (B) are pressed which can then trigger code on the device.
Pins	External connectors on the edge connector of the Micro:bit.
Sequence	When we have instructions in our code ordered in the correct way to make a task work.
Selection	When our program chooses which lines of code to run based on a condition being true or false.
Iteration	When we want to repeat a section of code multiple times or until something happens.
Syntax Error	When you are not following the rules of the programming language.
Temperature sensor	Measures how warm the environment is
Compass	Finds magnetic north or measures the strength of magnetic fields
Accelerometer	Detects gestures and measures movements in 3 dimensions

- ① **Buttons: input**
Capture user input to make things happen
- ② **LED display: output**
Show pictures, words, and numbers
- ③ **Light sensor: input**
Measure how much light is falling on the micro:bit
- ④ **GPIO pins: input and output**
Connect headphones, sense touch, and add other electronics
- ⑤ **Temperature sensor: input**
Measure how warm the environment is
- ⑥ **Compass: input**
Find magnetic north or measure the strength of magnetic fields
- ⑦ **Accelerometer: input**
Detect gestures and measure movement in 3 dimensions
- ⑧ **Radio: communication i/o**
Communicate with micro:bits and other devices



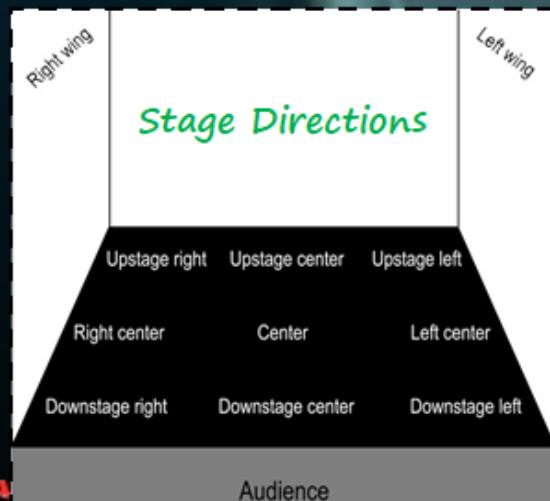
Drama Knowledge Organiser

KEY PHYSICAL SKILLS

Gesture	How everyday actions, such as shaking hands or putting on a jacket, express something about a character. What single gestures, like a wave or hug can reveal about a character.
Facial Expression	How different facial expressions reflect different characters and their moods. How eye movements can convey feelings and relationships.
Over Exaggeration	Exaggeration is a representation of something in an excessive manner. Overacting is the exaggeration of gestures and speech when acting.
Body Language	The gestures, postures, and facial expressions by which a person manifests various physical, mental, or emotional states and communicates nonverbally with others.
Slow Motion	How quickly or slowly a character makes a gesture or moves across the stage and how it influences our opinion of them.

DRAMA STRATEGIES

Freeze Frame	The action is frozen like a photograph.
Split Scene	Cutting from scene to scene.
Improvisation	Improvisation is a state of being and creating action without pre-planning. This can be when an individual or group is acting, dancing, singing, playing musical instruments, talking, creating artworks, problem solving, or reacting in the moment and in response to the stimulus.
Hot Seating	You are in role and people ask you questions about your background, behaviour and motivation.
Role on the Wall	Role on the Wall is a visual map that invites the actors to explore the inner feelings and outer influences on a character, place, or idea.
Thought Tracking	When frozen you speak the thought in the character's head aloud.
Levels	Using heights and proxemics to demonstrate meaning and relationships to the audience.



THE STAGE

Set	The set is the constructed or created setting in which a play takes place.
Props	The props are the items used during a performance.
Costume	All the clothes and accessories an actor wears to demonstrate meaning and/or character.
Masks	Masks are a form of covering the face enabling actors to represent different people or beings leading to a more striking and effective performance.
Make-Up	Make-up is the cosmetic paint, powder and colouring used on stage to make faces and expressions visible to the audience.
Lighting	The use of artificial light to create a range of effects and moods, or to direct the audience's attention.
Sound	This includes everything the audience hears.



"All the world's a stage."
William Shakespeare

Blocking is:

- the precise staging of actors.
- working out an actors movements on the stage.

*"We must all do theatre, to find out who we are,
and to discover who we could become."*

Augusto Boal