

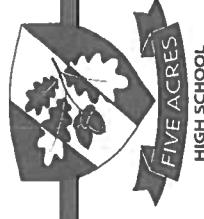
Year 9

Knowledge Organiser

September - December 2023

AMBITION, CONFIDENCE, CREATIVITY,
RESPECT, DETERMINATION

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LEARNING TRUST



Why do we have knowledge organisers?

Knowledge organisers are a collation of the basic essential knowledge for success in each subject area that will underpin your learning for the term.

They are designed to provide the information you will need to be committing to your long term memory through recall exercises in Low Stakes Quizzing.

How do we use knowledge organisers?

You should be using these KOs to create your homework quizzes so that you are practising retrieving information.

1. You can do this by testing yourself on the definition of key terms (both recalling the key term and then swapping to recall the definition), practice labelling diagrams, retrieves reasons and justifications for the main learning points.
2. They can also be used for 'memory dumps' where you try to recall as much of the information about a topic as possible and then use the KP to fill in the gaps.
3. They can also be used in class to assist with retrieval of the core knowledge needed for each subject.

You should have these with you at all times in school and out on your desk in all lessons.

If you lose your KO or it becomes too dishevelled, please purchase a new one from the Head of Year or the School Office.

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**AMBITION, CONFIDENCE, CREATIVITY,
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Key vocabulary and terminology

Assonance – repetition of a vowel sound of emphasis

Atmosphere- mood or feeling

Couplet – 2 lines of rhyming poetry

Caesura- punctuation in the middle of a line for emphasis

Dramatic monologue- narrative told only from the narrator's viewpoint

Enjambement- overlapping sentence into the following the line.

Extended metaphor – metaphor running through the poem rather than singular reference

Form- the shape of a poem

Free verse- poem that does not have a regular rhyme structure

Half rhyme- partial rhyme scheme

Iambic pentameter – 10 syllables with 5 stressed syllables

Narrative- account of events

Oxymoron – contradictory placement of words – eg bitter sweet

Prose- any writing not in verse form

Rhyme scheme – pattern of rhyming eg ABAB

Simile – comparison to enhance understanding using like or as

Sonnet form- 14 lines in iambic pentameter. Either **Italian/Petrarchan** or **English/Shakespearean**

Octet – 8 lined stanza (posing the problem or question in a Petrarchan sonnet.

Sestet –(6 lines stanza, often presenting the answer or question to the octet)

Cinquin/quintet – 5 line stanza

Quatrain/quartet – 4 line stanza

Tercet- 3 line stanza

Volta- turning point of a sonnet between the octet and the sestet (Line 9)

Natural imagery – imagery inspired by nature

Yr 9 KO Autumn Term Conflict Poetry

Evaluative Verbs

Satirises – using satire (a way of criticising people or ideas in a funny way) to show that people or ideas have bad qualities and are wrong - usually political.

Presents – introduces an idea.

Demonstrates – provides a clear explanation or example.

Amplifies – emphasises using extra impact and returning to the same idea/point. It makes this idea/point seem very important.

Conveys- carries or presents

Contrasts – presents ideas in opposition

Insinuates – hints at, implies.

Alludes to- references or suggests

Language of comparison:

- Similarly, likewise, additionally, also.
- However, although, conversely, contrastingly.

Phrases to show writer's purpose:

- The writer is inviting the reader...
- The writer is perhaps suggesting...
- The writer indicates that...
- The writer has used this to...
- Phrase to show comparison of effect on the reader:
- Similarly, this also makes the reader...
- Conversely, the reader then feels...

The poems :

Dulce et Decorum Est – Wilfred Owen

A damning, realistic and brutal portrayal of life in the trenches during WW1

Exposure – Wilfred Owen

Another presentation of the harsh realities of existing in the trenches during WW1

The War Photographers – Frank Ormsby

A visual representation of the destruction caused by war

War Photographer

Carol Ann Duffy Duffy's poem was inspired by a photo journalist and the fine line between observing and involvement.

What every soldier should know Brian Turner

He fought in the Iraqi war. Often autobiographical, his poems portray terror, compassion and loneliness of armed conflict.

A Dead Boche Robert Graves

Graves served three times in the first world war, discharged after his third wounding. He known for his damning accounts of the Western Front.

Mametz Wood Owen Shears

Portrays a fierce WW1 battle in the Somme between the Germans and a Welsh infantry division. The Welshmen were never truly acknowledged for their sacrifice

The Manhunt Simon Armitage

Armitage writes this poem after researching accounts of war and survival and reading about Eddie (a soldier who witnessed the Srebrenica massacre) and Laura, his wife.

AB Negative Brian Turner

The poem is in 3rd person and describes a field surgeon's effort to save a female soldier.

Key Vocabulary • Futility Pointless (Latin – futilis – leaky, futile) • Brutality Savage physical violence (Latin – brutus – heavy, dull, stupid, insensible, unreasonable) • Nationalism Devotion to your country (French – nation – peculiar or comment to the whole people of a country) • Insubordination Defiance of authority (French – insubordine in – not subordinate – submitting to authority) • SubvertTo undermine or overturn (Latin – subvertere – to turn upside down) • Invert To reverse the position (Latin – invertere – turn about, upset, reverse) • Neuralgia Pain caused by the nerves (Greek – neuron – nerve algia – pain) • Claustrophobic Feeling of fear linked to being in a confined place (Latin – cloister – to close phobia – fear) • Vernacular The language or dialect spoken by the ordinary people of a region (Latin – vernaculus – domestic, native, indigenous) • Poignant Evoking a keen sense of sadness or regret (French – poignant – sharp, pointed) • Futility Pointless (Latin – futilis – leaky, futile) • Brutality Savage physical violence (Latin – brutus – heavy, dull, stupid, insensible, unreasonable) Context about the playwright Sheriff Journey's End was based on his real experiences as an army officer fighting in WW1. Educated at Kingstons grammar school, he served as an officer in the 9th Battalion of the east Sussex Regiment. He was severely wounded at Passchendale, near Ypres.	Year 9 KO Autumn Term Conflict Context and key terms World War One: 1914-1918. Considered one of the most brutal and bloodiest conflicts in history. Propaganda: Convinced young soldiers to sign up- that fighting in WWI was noble. Also presented Germans as evil monsters. Vimy Ridge: A horrific battle whereby commanding officers ordered their soldiers to run at German machine guns. The play: Set in the vicious trench warfare of World War One. The action begins on the evening of Monday 18 March 1918 and continues over three days. Shell Shock: Nowadays known as 'post-traumatic stress disorder'. Soldiers were effectively paralysed with fear. Superior officers: Soldiers were expected to follow the command of their superior officer, regardless of how daft the order was. Any refusal (also known as insubordination) would result in being court marshalled and shot. The Boche: Germans, especially German soldiers, considered collectively; from the French word for rascal. Minnies: Large mortar shells, named for the German Minnyswerfer: short range german shell mortars Trenches: Long, narrow ditches dug by troops to provide shelter from enemy fire; also shorthand for the battlefields of France and Belgium in WWI. Jerry: Slang term for Germans No Man's Land: Disputed land between the front lines or trenches of two opposing armies. Poisoned gas: chemical warfare including tear gas, chlorine (which characteristically smelt like pepper and pineapple) and phosgene which smelt like musty hay. The latter were highly toxic. Kaiserschlacht: German spring offensive in March 1918, part of their 'final push' on the Western Front.	Symbolism and Motifs Time: There are constant references to time and 'waiting' throughout the play- to reflect the boredom of life in the trenches and reality of the front. Light: Through the play, the light in the trenches becomes increasingly dim- to reflect either the darkening mood or increasing lack of hope. After Osborne's death, artificial light (the dugouts is 'festively lit with candles') to symbolise the artificial 'happiness' of Stanhope. Osborne's Pipe: Osborne has to leave his pipe, unfinished and whilst it still has a 'glow' on it, to go on the raid- which is symbolic for how his and other soldiers' lives were cut short. Earwigs: If you dip an earwig in whiskey it will go faster- just like a soldier. Uniforms: Used to reflect the characters' mental states. Stanhope's is tidy but 'war-stained', whilst Raleigh's is 'fresh'. However, after the Raid his too has become war-stained. This is symbolic for the minds of the soldiers. Ramshackle furniture: used by Sheriff to symbolise the ill equipment of poor treatment of the serving soldiers by the Government. Social class: sheriff comments on social class presenting the officers as middle and upper class whilst the orderly (Mason) is clearly working class. The exception to this is Trotter, who is treated poorly. Well made play : majority of the action takes place before the play begins. The play consists of 3 acts, the ending is often ambiguous. This was an accepted dramatic form of the late 19th and early 20th century.
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Rounding to 1 s.f

4.3325

5 or bigger?

No

4

5.7425

5 or bigger?

Yes

6

0.0425

5 or bigger?

No

0.04

First non-zero digit.

Bounds are the smallest – the Lower Bound (LB) – and largest – the Upper Bound (UB) – numbers that a rounded number can lie between

UPPER BOUND – add on half the degree of accuracy
LOWER BOUND – take off half the degree of accuracy

ERROR INTERVAL: $LB \leq x < UB$

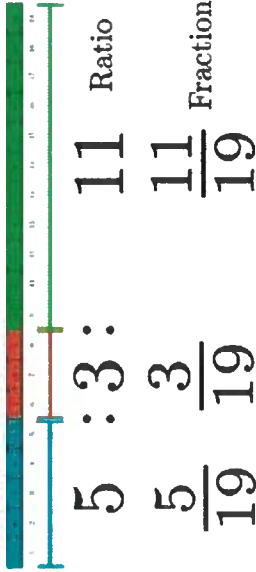
$\leq$ less than or equal to
 $<$ less than

Ratios are usually written in the form a:b.

The order in which a ratio is stated is important.

To simplify a ratio, divide all of the numbers in the ratio by the same number until they cannot be divided any more without becoming decimals.

To find a fraction from a ratio: the denominator comes from all parts added together
(5+3+11=19)



Index Laws - base number (y in the example below) must be the same

Multiplying	$y^a \times y^b = y^{a+b}$
Dividing	$y^a \div y^b = y^{a-b}$
Raising the power	$(y^a)^b = y^{ab}$
Power of zero	$y^0 = 1$
Negative indices	$y^{-a} = \frac{1}{y^a}$
Fractional indices	$y^{\frac{a}{b}} = \sqrt[b]{y^a}$
Square root is the same as power of $\frac{1}{2}$	$\sqrt{y} = y^{\frac{1}{2}}$

Standard Form

$a \times 10^n$

a is a whole number between 1 and 10

n is a whole number (but can be positive or negative)

Standard form: Ordinary form:

$5 \times 10^4 = 50000$
 $5.2 \times 10^4 = 52000$
 $5.21 \times 10^2 = 521$
 $5.2 \times 10^{-2} = 0.052$

Adding and subtracting numbers in standard form

- Convert the numbers from standard form into decimal form or ordinary numbers
- Complete the calculation
- Convert the answer back into standard form

Multiplying and dividing

Use Index Laws:

- Multiply or divide the first numbers
- Apply the Laws of Indices to the powers of 10

Factor: a number that multiplies together to give a number (1, 2, 3, 6 are factors of 6)

Multiple: a number in a times table (6, 12, 18, 24... are multiples of 6)

Prime Numbers can only be divided by 1 and themselves (2, 3, 5, 7, 9, 11, 13, 17, 19...)

LCM - Lowest Common Multiple

HCF - Highest Common Factor

Percentages

Percentage change = $\frac{\text{Amount of change}}{\text{Original Amount}} \times 100$

Compound Interest (Higher only)

$$\text{New Value} = P \left(1 + \frac{R}{100}\right)^n$$

P is the initial principal sum of money

R is the interest rate in percentage

n is the time period in years

Fraction is numerator ÷ denominator

➔ $\frac{5}{8} = 5 \div 8 = \mathbf{0.625}$

Use place values to change decimals to fractions.
Simplify where possible.

➔ $\mathbf{0.45} = \frac{45}{100} = \frac{9}{20}$

Learn the most frequently used ones:

$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{10}$	$\frac{1}{5}$	$\frac{3}{4}$
0.5	0.25	0.1	0.2	0.75
50%	25%	10%	20%	75%

Adding or subtracting fractions; use a common denominator...

➔ $\frac{4}{5} - \frac{1}{3} = \frac{12}{15} - \frac{5}{15} = \frac{7}{15}$

Multiplying fractions; multiply numerators and denominators...

➔ $\frac{4}{7} \times \frac{2}{3} = \frac{8}{21}$

Dividing fractions; “flip” the second fraction, then multiply...

➔ $\frac{2}{7} \div \frac{5}{6} = \frac{2}{7} \times \frac{6}{5} = \frac{12}{35}$

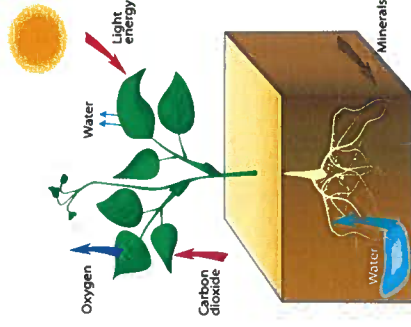
Year 9 Biology Knowledge Organiser – Photosynthesis

Box 1 - Photosynthesis

The **word equation** which represents photosynthesis is:



The balanced **symbol equation** which represents photosynthesis is:

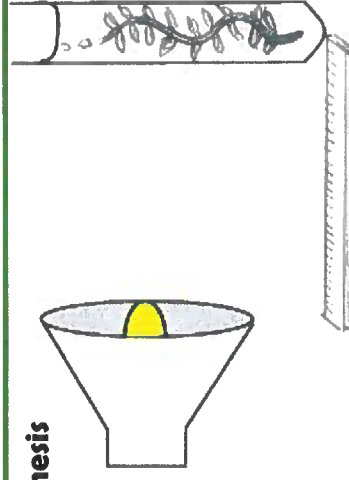
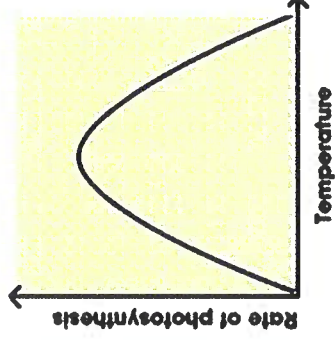
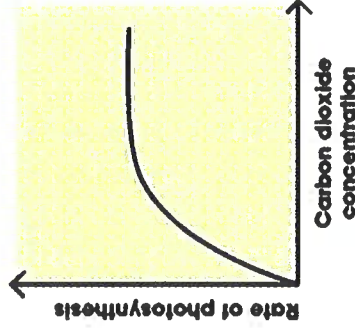
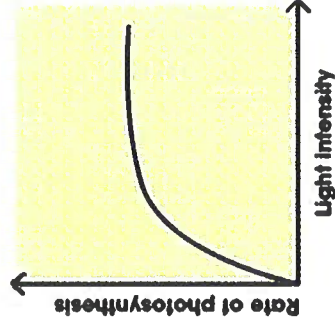


Glucose is stored as starch in leaves. Iodine will turn blue/black in the presence of starch; this test is used to show that photosynthesis has occurred. It will give a negative result if the leaf has been kept in the dark

Box 2 - Investigating Rate of Photosynthesis

The rate of photosynthesis can be affected by temperature, carbon dioxide level and light intensity. Rate of photosynthesis can be measured by counting bubbles of oxygen given off by pond weed. In this investigation, variables need to be controlled. The rate of photosynthesis can be shown on a line graph.

Each factor will limit the rate of photosynthesis



Box 3 - Plant tissue

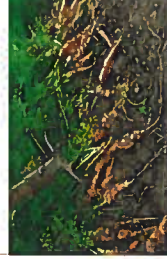
Specialised structures include: palisade cells (for photosynthesis), guard cells (movement of water+gases), epidermis (protect top of leaves), vascular tissue (movement of water + nutrients). Water moves through a plant by osmosis. Plants need active transport to absorb water and nutrients against the concentration gradient from the soil into the root hair cell. Plant cell walls give support to the plant.

Key Terms	Definitions
Photosynthesis	Reaction in plants that uses light energy to produce biomass and release chemical energy
Chlorophyll	Green pigment in chloroplasts that traps light energy
Light intensity	Strength of the light reaching the plant
Glucose	A form of sugar produced in photosynthesis
Iodine	Chemical that turns blue/black in the presence of starch
Epidermis	Tissue on the top of the leaf

To produce **cellulose** which strengthens plant cell walls.



To be converted into **insoluble starch** for storage inside cells or special areas like roots or bulbs.



All living cells need energy. This energy is released from glucose by a process called **respiration**.

Uses of glucose made from photosynthesis

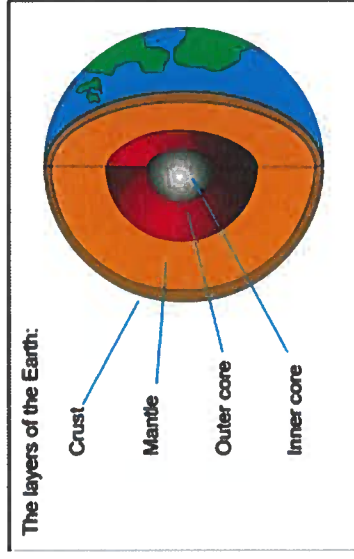


To be converted into **amino acids** for protein synthesis.
Glucose is combined with **nitrate** ions absorbed from the soil. Specific amino acids join in long chains to make a named **protein**.

To produce **fat or oil** for storage.
Seeds and nuts contain lots of fat or oil as an energy store.



Box 1 – The structure of the Earth



Crust – Made up of rock split into tectonic plates

Mantle – Made of solid rock which can slowly flow like a liquid.

Core – Made up of iron and nickel, the outer core is liquid, and the inner core is solid.

Box 2 – Gases in the atmosphere

The air around is called the atmosphere, it is made up of a mixture of gases.

Gas	% of volume
Nitrogen (N ₂)	78
Oxygen (O ₂)	21
Argon (Ar)	1
Carbon dioxide (CO ₂)	0.04

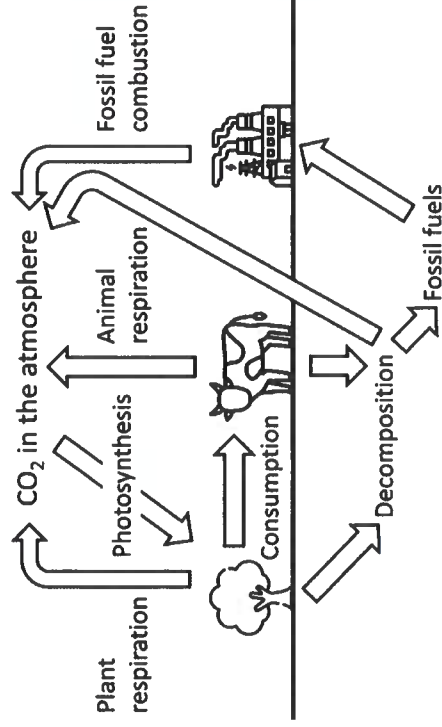
Box 3 - The carbon cycle

Living and decomposing organisms are made up of compounds that contain the element carbon. These are recycled between stores within the atmosphere, ecosystems and the Earth's Crust.

Key processes

Photosynthesis removes carbon dioxide from the atmosphere and stores it within producers (plants) as glucose (biomass)

Cellular respiration in plants, animals and bacteria releases carbon dioxide out into the atmosphere



Human activities such as **combusting (burning) fossil fuels** release carbon dioxide into the atmosphere, increasing the level of carbon dioxide in the atmosphere

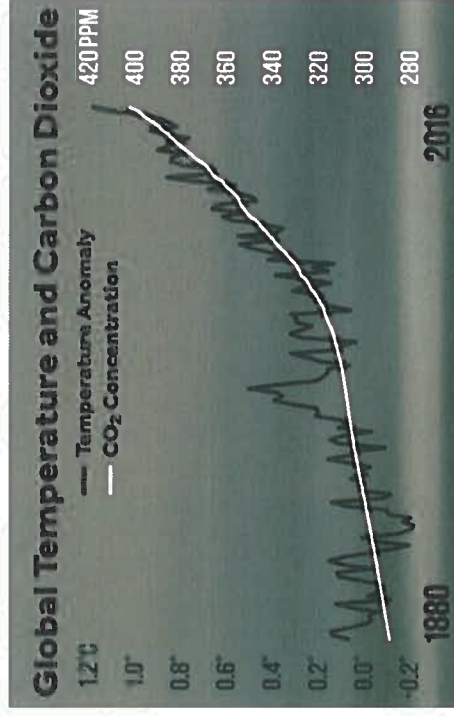
Box 4 – The Greenhouse Effect



Life can exist on Earth because energy transferred from the surface of the Earth forms a thermal energy store within the molecules of gas in the atmosphere – this is known as the greenhouse effect.

Carbon dioxide and methane stores a greater amount of energy compared to molecules of oxygen and nitrogen. Carbon dioxide is a greenhouse gas, as it has a higher thermal energy store. Without this effect the atmosphere would be too cold for life to exist.

Box 5 Global Warming and Climate Change



Human activities such as burning fossil fuels have increased the amount of carbon dioxide in the atmosphere, this has increased the average global temperature causing global warming.

Other activities which release carbon dioxide include

- Cutting down and burning large areas of forest to make space for crops and cattle.
- Growing rice and farming cattle, this releases methane another greenhouse gas.

Reducing the amount of fossil fuels used for electricity generation, heating and transport alongside reducing the amount of cattle farmed would slow down the increase in the global temperature.

Scientists have evaluated huge amounts of evidence to link human activities to global warming.

The impacts of global warming are called **climate change**. As a result, glaciers and polar ice are melting, this causes a sea level rise leading to flooding of low-lying land. Weather patterns are disrupted with increases in rain fall in some areas with other areas suffering droughts and heat waves.

Box 6 – Reduce, Reuse and Recycle

Material that make everything come from the Earth's crust, the atmosphere or the oceans. These resources will not last forever, and the faster we use them the sooner they will run out. To make these resources last longer we could reduce the amount of raw materials that we use to make products. Ensuring that products are reused in some way would also help to reserve important resources.

Recycling means collecting and processing materials that have been used so that they can be used again.

The following materials are often recycled – paper, plastic, metals and glass.

Glass is recycled by sorting the glass into different colours, heating the glass to a high temperature and then forming a new glass product in a new shape.

Advantages of recycling

Natural resources will last longer

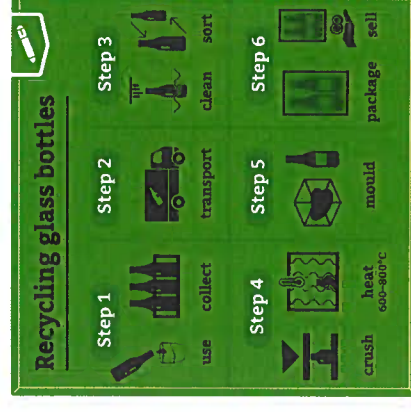
Recycling materials transfers less energy than processing materials

Recycling reduces the amount of waste going into land fill.

Disadvantages of recycling

The recycling process uses a lot of energy

Waste needs to be sorted before it is processed.



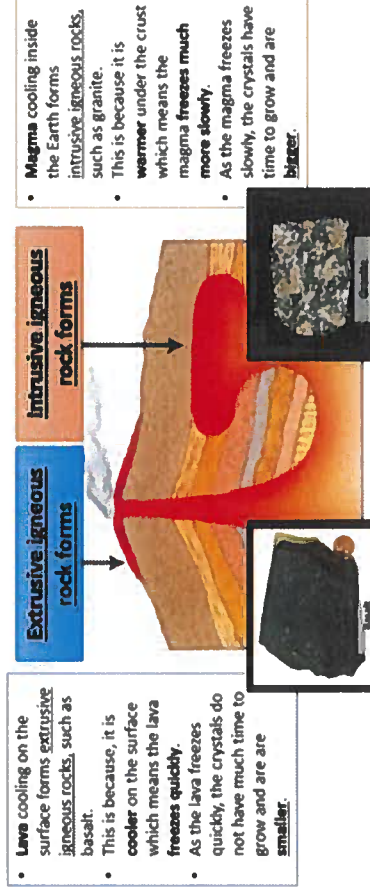
Year 9 Chemistry Topic Knowledge Organiser - Rocks and the Atmosphere page 3

Box 7 – Types of Rock and the rock cycle

- Rocks are mixtures of minerals found in the Earth's crust.
- A **mineral** is a solid chemical compound. For example, the rock limestone contains the **mineral** calcium carbonate (CaCO_3) along with silica, clay, silt and sand.

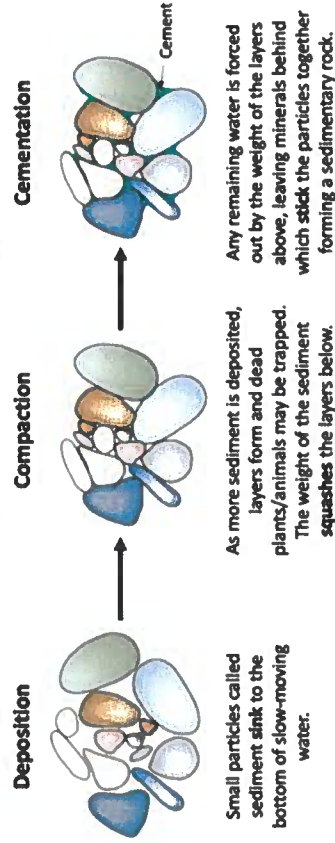
Igneous rocks

- Examples of igneous rock include basalt, granite and obsidian.
- Igneous rocks are made of interlocking crystals which makes them **hard and non-porous** (don't absorb water). Igneous rocks never contain layers or fossils.
- Igneous rocks are formed when molten rock (called magma or lava) **freezes** from a liquid into a solid.



Sedimentary rocks

- Examples of sedimentary rock include limestone, sandstone and chalk.
- Sedimentary rocks are made of **grains** which makes them **soft and porous** (can absorb water). Sedimentary rocks may contain **strata (layers)** and / or **fossils**. A fossil is the preserved remains of a living thing from thousands or millions of years ago.
- Sedimentary rocks are formed when small particles of other rocks sink to the bottom of slow moving water and then get squashed and glued together.



Metamorphic rocks

- Examples of metamorphic rocks include marble, slate and gneiss (pronounced 'nice').
- Metamorphic rocks are made of interlocking **crystals** which makes them **hard and non-porous** (don't absorb water). Due to the way metamorphic rocks are formed, they may contain layers and / or distorted fossils.
- Metamorphic rocks are formed from **existing** rocks which have been exposed to **heat and pressure** over long periods of time.



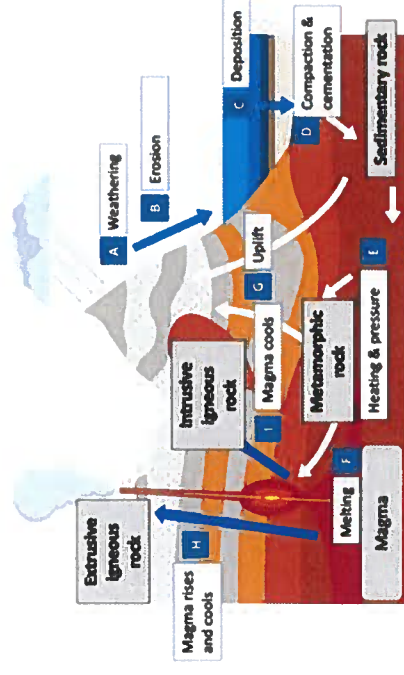
Weathering and erosion

- **Weathering** is the **breaking down** of large pieces of rock into smaller pieces of rock.
- There are three types of weathering:
 - **Biological weathering** is caused by **living organisms**, for example tree roots can cause rocks to break into smaller pieces.
 - **Chemical weathering** wears rocks away. It is caused by **chemical reactions between rain and rocks containing calcium carbonate** such as chalk, limestone and marble. Rainwater is naturally acidic and causes weathering. However, this process is sped up when pollution causes acid rain to form.
 - **Physical weathering** uses mechanical processes to break rocks down, for example waves can slowly wear away at cliffs. Changes of temperature can also cause physical weathering to take place through processes known as freeze-thaw and onion-skin weathering.

- **Erosion** is the **movement** of rock by water, wind or ice. The rocks are broken down into even smaller pieces by erosion, becoming rounder and smoother in the process.

The rock cycle

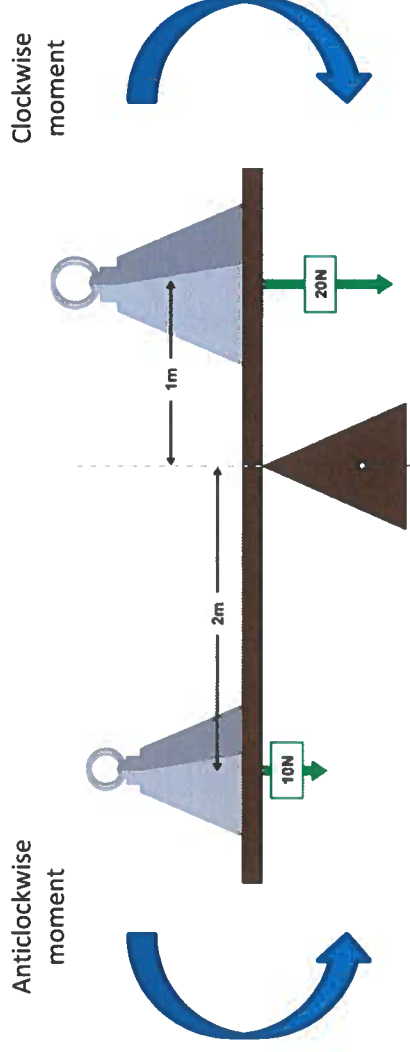
- The rock cycle links together all the ideas in this topic as it describes how different rocks are made and changed over time:



Year 9 Physics Knowledge Organiser Forces 3 page 1

Box 1 - Moment

- **A moment** is a turning force
- Forces can make an object turn if there is a **pivot**
- To calculate the size of a moment you need to know 2 things. The size of the force and the distance from the pivot.
- Take the example of the see saw below:



The turning force on the left of the pivot (the anticlockwise moment) is

$$10 \times 2 = 20 \text{ Nm}$$

The turning force on the right of the pivot (the clockwise moment) is

$$20 \times 1 = 20 \text{ Nm}$$

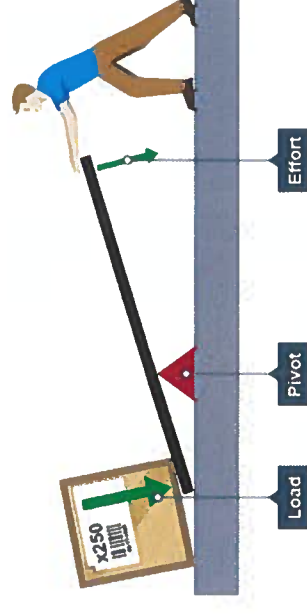
The units for turning force are Newton metres (Nm).

- We can say that the see saw above is in **equilibrium** this is because the moments that are trying to rotate the see saw anti clockwise are the same as the moments trying to turn the see saw clockwise.
- In other words **the clockwise moments = the anticlockwise moments**
- The seesaw above is therefore **not rotating**.

Key terms	Definitions
Pivot	A point around which something can rotate
Moment	A turning force
Equilibrium	When an object is not rotating due to balanced forces
Newtonmetre	The unit for turning force.
Equation to calculate the moment of a force	
$\text{moment} = \text{force} \times \text{perpendicular distance from pivot}$	
Forces are measured in newtons (N)	
Distances are usually measured in metres (m)	
Moments are measured in a compound measure using the units for force and distance, newtonmetres (Nm).	

Box 2 - Levers

- Levers involve turning, or rotation. Levers allow forces applied to be **multiplied** (made larger). This can make it easier for us to move heavy objects
- Levers have a **pivot**: a fixed centre of rotation
- The moment of a force can be **increased** by:
 1. Increasing the size of the force
 2. Increasing the perpendicular distance from the pivot



Year 9 Physics Knowledge Organiser Forces 3 page 2

Box 3 - Work done by a force

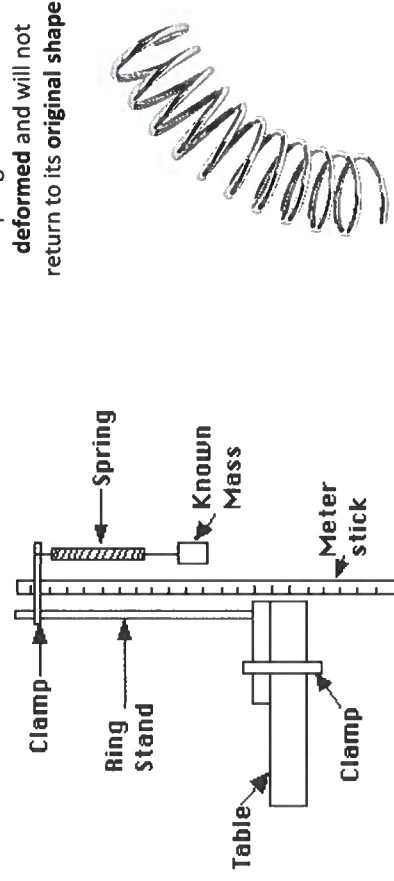
- Applying a force to get an object to move is one way to transfer energy between stores. Transferring energy is also known as 'doing work'.
- To calculate work done:

$$\text{work done} = \text{force} \times \text{distance moved in the direction of the force}$$
- Work is done (energy is transferred) when elastic objects are extended/compressed.
- The amount of work done = the amount of elastic potential energy stored in the elastic object.

Box 4 - Hooke's Law

- Hooke's law applies to all elastic materials/objects. An elastic object is one which will return to its original shape when compressed or stretched
- Hooke's law says: **the extension/compression of an elastic object is directly proportional to the force applied.**
- When an elastic object is extended/compressed, it stores **elastic potential energy**.
- If too much force is applied to the elastic object, it reaches its **elastic limit**. After this elastic limit, the object no longer returns to its original shape once the force is removed.
- To investigate Hooke's law you can use a spring, ruler and mass hanger to apply the force. In this experiment the independent variable would be the force and the dependent variable would be the extension of the spring.

Apparatus for Hooke's Law Lab



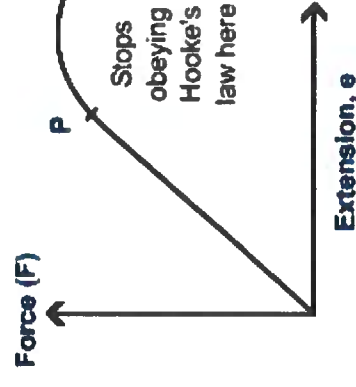
A spring that has been **deformed** and will not return to its **original shape**



Key terms	Definitions
deformation	Changing the shape of a material/object by applying forces.
extension	The measure of how much an elastic object has been stretched.
elastic	Describes materials that can be extended or compressed by forces, and return to their original shape when the forces are removed.
inelastic	Describes materials that don't go back to their original shape after they've been deformed.
direct proportion	Describes a mathematical relationship between variables where: when the independent variable doubles, the dependent variable doubles too.
elastic potential energy	The store of energy in extended/compressed elastic objects.
Equation	Meanings of terms in equation
$\text{Force} = \text{spring constant} \times \text{extension}$	$F = \text{force (N)}$ $k = \text{spring constant (N/m)}$ $e = \text{extension (m)}$

Box 5 - Results from Hooke's Law Experiment

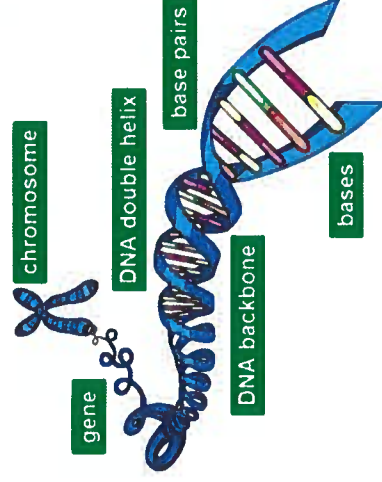
- Force and extension have a **directly proportional relationship**. This means if you double the force the extension of the spring also doubles.
- Hooke's Law is no longer obeyed beyond the elastic limit (marked P on the graph)



Year 9 Biology Knowledge Organiser – Genetics page 1

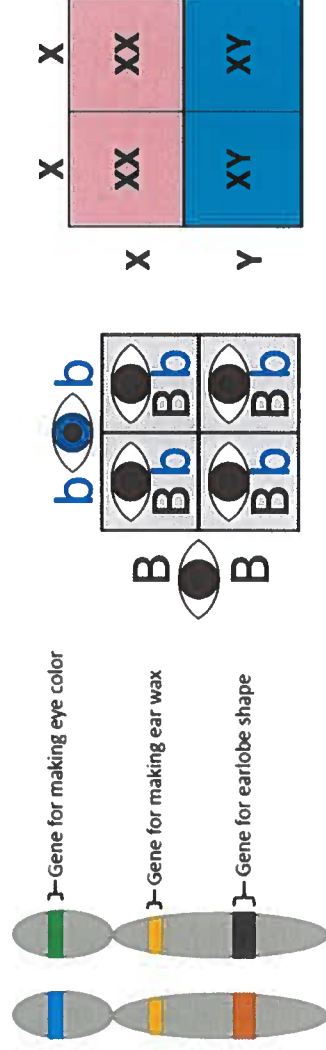
Box 1 - The Gene

DNA controls many characteristics of organisms. The genetic material in the nucleus of a cell is composed of a chemical called DNA. DNA is made of two strands forming a double helix. DNA has a series of bases which are read as triplets. DNA is contained in structures called chromosomes. A gene is a small section of DNA on a chromosome. Each gene codes for a particular sequence of amino acids. A sequence of amino acids makes a protein. Proteins are the building blocks of cells. Proteins determine certain characteristics.



Box 2 - Inheritance

Genes occur in pairs, one of each is inherited from each parent. Some characteristics are controlled by a single gene. Most characteristics are a result of multiple genes interacting rather than a single one. Each gene can have different forms called alleles. Genetic crosses can be completed for those characteristics that are controlled by a single gene, and give a percentage chance of each characteristic being seen in the offspring. A punnett square diagram can be completed for sex determination. Of the 23 pairs of chromosomes in a human nucleus, 22 determine characteristics but only one carries the genes that determine sex. In females the sex chromosomes are the same, XX. In males the chromosomes are XY. Each egg cell holds an X chromosome. Sperm cells contain either an X or a Y chromosome. A punnett square diagram will show there is a 50% chance of each child being either a boy or a girl.



Key Terms	Definitions
DNA	Genetic material in the nucleus of a cell
Gene	A small section of DNA on a chromosome
Chromosome	Structures that contain DNA
Amino acid	Coded for by a gene; building blocks of protein
Dominant	A gene or characteristic that will always be expressed in the offspring
Recessive	A gene or characteristics that will only be expressed in the offspring if the other gene is also recessive
Allele	A form of a gene (e.g. for brown eyes or blue eyes)
Genotype	Genes that are present, e.g. HH, Rr
Phenotype	Characteristics that are present
Homozygous	If the two alleles present are the same, e.g. MM, qq
Heterozygous	If the two alleles present are different, e.g. Mm, Qq
Selective breeding	The process by which humans breed plants and animals for particular genetic characteristics
Clone	An individual that has been produced asexually or artificially and is genetically identical to the parent
Embryo cloning	Process used to clone animals
Evolution	The theory that suggests there has been a development of more complex organisms over millions of years
Natural selection	The survival and successful breeding of organisms most suited to their environment
Fossils	Prints or remains of organisms that have been preserved in rock through a process of mineralisation
Extinction	There are no remaining individuals of a species still alive

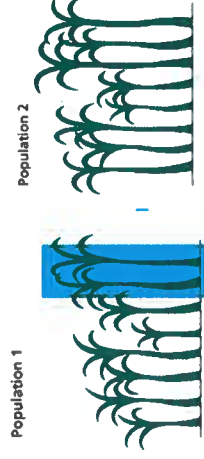
Year 9 Biology Knowledge Organiser – Genetics page 2

Box 3 - Selective Breeding

Selective breeding, or artificial selection, is the process by which humans breed plants and animals for particular genetic characteristics. Desired characteristics can include resistance from disease, animals with a high yield of milk or meat, domestic dogs with a gentle nature, large or unusual flowers. Selective breeding can result in “inbreeding” where some breeds are particularly prone to disease from inherited defects.

Selective breeding involves:

1. Breeding individuals who have the desired characteristic
2. From the offspring those with the desired characteristic are bred together
3. Repeating over many generations until all the offspring show the desired characteristic



Box 4 - Fossils and Extinction

Fossils provide evidence of evolution. Fossils are the prints or remains of organisms that have been preserved in rock through a process of mineralisation. Fossil records are often incomplete but allow scientists to understand changes in species over time. Fossils allow us to identify organisms that are now extinct. Extinction occurs when there are no remaining individuals of a species still alive. Human behaviours have increased the rate of extinction as species are unable to adapt rapidly enough to the changes brought about by humans.



Box 5 - Darwin's Discoveries

All organisms have evolved from simple single celled organisms over millions of years.

Evolution has occurred due to variation within a species. Variation can either be continuous or discontinuous, and is a result of either genetics, environment or both.

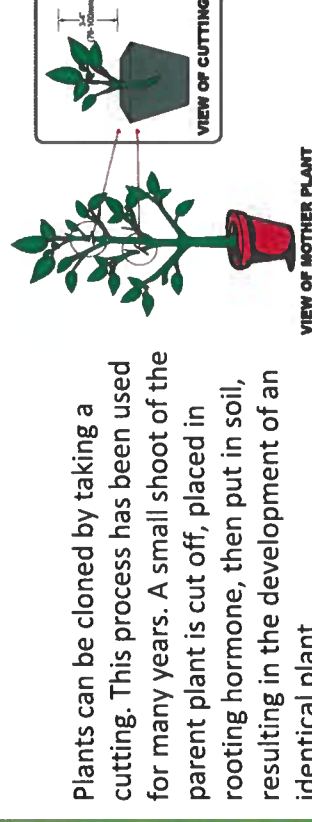
Darwin found evidence of evolution in the 1830s during his round-the-world journey. Darwin coined the term “survival of the fittest” to explain his theory of natural selection:

- Individual organisms within a particular species show a wide range of variation for a characteristic.
- Individuals with characteristics most suited to the environment are more likely to survive to breed successfully.
- The characteristics that have enabled these individuals to survive are then passed on to the next generation.

Darwin published his ideas in *On the Origin of the Species* but his ideas were initially rejected by other academics due to existing religious beliefs and a lack of explanation. The idea of natural selection is now widely accepted, since the discovery of the gene provided further evidence.

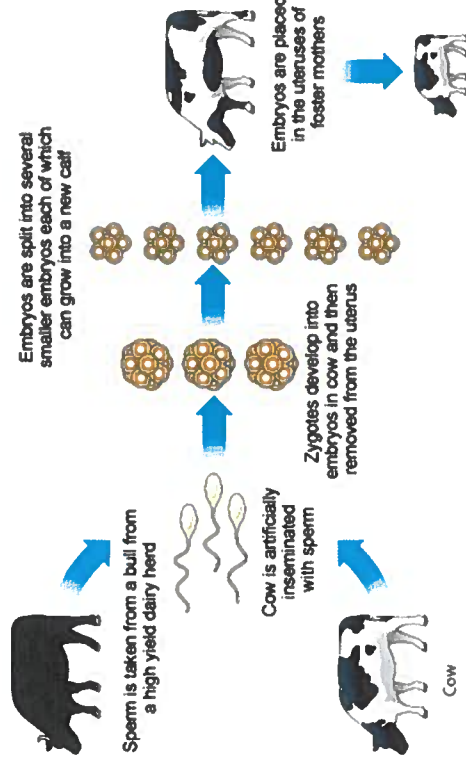
Box 6 - Cloning

A clone is an individual that has been produced asexually or artificially and is genetically identical to the parent. Cloning is usually used if a plant or animal has particularly desirable characteristics.



Animals can be cloned using embryo cloning. Fertilisation takes place between the egg and sperm from the parents with desirable characteristics. The resulting cluster of cells, which haven't yet specialised, are split apart and transplanted into surrogate mothers, where they will each grow into a clone of the original cow and bull.

Some people have ethical issues with cloning.



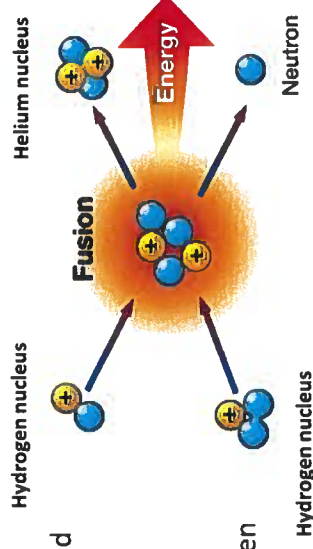
Year 9 Physics Knowledge Organiser – Cosmology page 1

Box 1 - Nuclear fusion

Nuclear fusion is a process that occurs in stars and results in a huge release of energy. This is why stars shine.

During nuclear fusion, two nuclei fuse (join together) to make a bigger nucleus and energy.

In stars, the two nuclei are usually hydrogen; when they join together they make a single helium nucleus and release a lot of energy.



Box 2 - Life cycle of a star

Stars are huge balls of gas in space. They are so large and last so long they can seem to last forever. This is not the case: stars go through a life-cycle with identifiable stages. Stars can be divided into two categories based on their size: small stars, of a similar size to our Sun, and massive stars, which are much larger than our Sun. The size of a star affects its life-cycle.

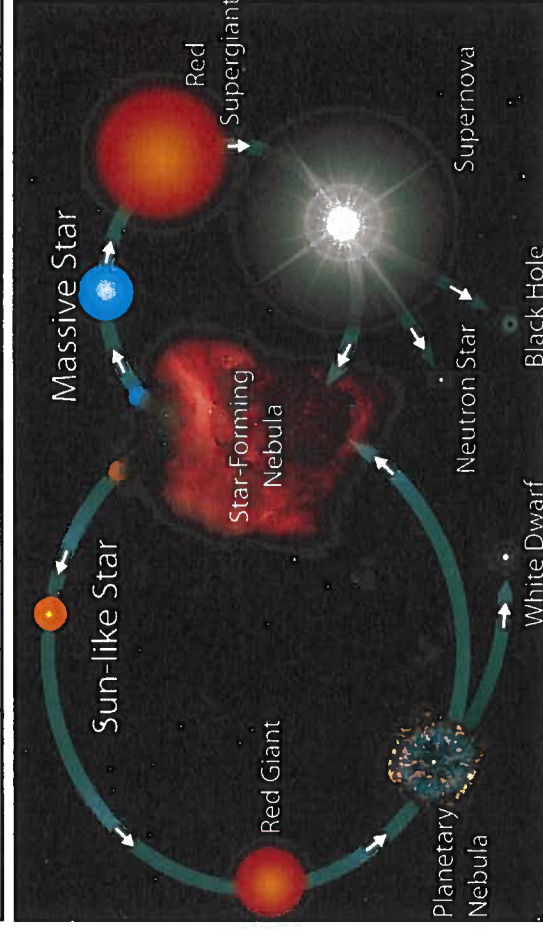
A star the size of our Sun has a life-cycle over five stages: nebula, main sequence, red giant, white dwarf

1. The life-cycle of a star starts when the force of gravity draws particles of gas (hydrogen and helium) in a **nebula** together.
2. The **main sequence** of a star is the main stage of its life-cycle; during this time the star appears white. This is because of the nuclear fusion process, which releases a lot of light and heat. During the main sequence the nuclear fusion uses hydrogen atoms.
3. When most of the hydrogen has fused to form helium the star cools and expands, forming a **red giant**. Massive stars form **red supergiants**.

The end of a star's life-cycle depends on if it is small (Sun-like) or massive

- If the star is small, the outer layers of the red giant star are lost. The outer layers form a **planetary nebula** and what remains is a small, very hot, **white dwarf**.
- If the star is massive, the red supergiant will explode in a **supernova**. What remains normally forms a **neutron star**. The most massive stars form **black holes** after a supernova.

Key term	Definition
Nebula	A giant cloud of dust and gas (hydrogen and helium) in space
Sun-like star	A star with a similar mass to the sun Over the life of the star nuclear fusion occurs: two hydrogen atoms come together making one helium atom, releasing a lot of energy (light and heat)
Red giant	The part of a star's life-cycle when the hydrogen has run out – the star now appears red Red giant stars mainly fuse helium
Planetary nebula	A ring-shaped nebula round an ageing star
Massive star	A star with a mass much larger than the sun's mass
Supernova	The explosion of a massive star when it is a red supergiant
Neutron star	A small, very dense star consisting mainly of closely packed neutrons
Black-hole	Formed after very massive stars collapse Black holes can continue to grow by absorbing the mass of other stars



Year 9 Physics Knowledge Organiser – Cosmology page 2

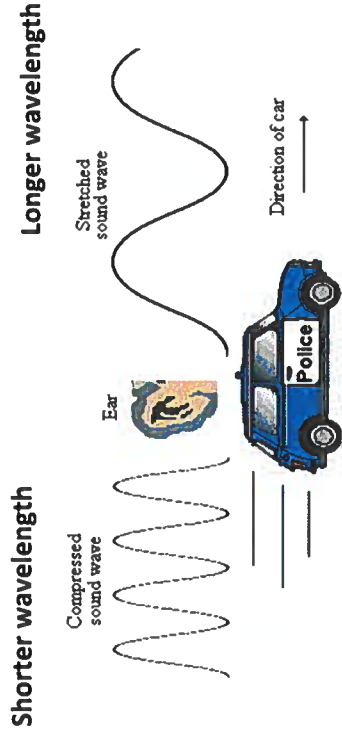
Box 3 - Doppler effect

The wavelength of a wave (the distance between two points) from a moving object is *shifted*. This is known as the Doppler effect.

If the object is moving away, the wavelength is shifted to be longer.

If the object is moving towards you, the wavelength is shifted to be shorter.

This effect can be heard when a police car, with a siren passes you.



When a car with sirens travels towards you the sound is high-pitched (high frequency wave, the wavelength is shorter); as the sirens move away from you the sound becomes low-pitched (low frequency wave, the wavelength is longer).

Box 4 - Red-shift and blue-shift

Red-shift and blue-shift are examples of Doppler effect for light.

Red light has the longest wavelength of visible light and blue light has the shortest.

- When an object is moving towards you the wavelength of the light is shifted to be shorter (Blue-shift).

- When an object is moving away from you the wavelength of the light is shifted to be longer (Red-shift).

→ Objects have to move extremely fast for the difference to be observable; this effect can be observed with distant stars and galaxies.

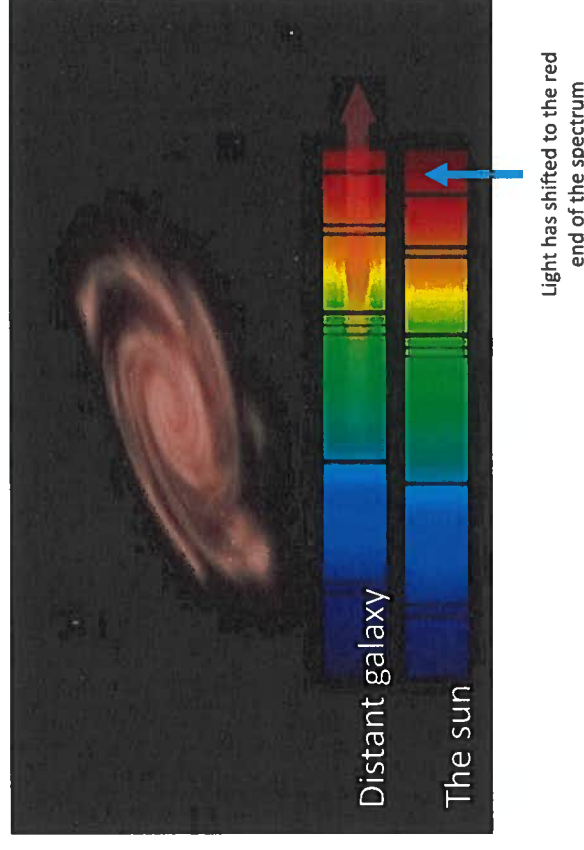


Box 5 - Cosmological Red-shift

When other galaxies in the universe are observed, they are all red-shifted. This means they are all moving away from our galaxy.

This can be seen by comparing absorption spectra from our local star (the sun) with a distance galaxy.

The patterns in the absorption spectra show red-shift.



This is strong evidence for the universe expanding as all galaxies are red-shifted and therefore moving away from each other.

Box 6 - The Big Bang

Red-shift and Cosmic Microwave background Radiation (CMBR) are evidence for a theory called the Big Bang.

The Big Bang theory proposes that the universe was created 13.7 billion years ago at a single point. The universe expanded from this point and continues to expand.

There was an alternative theory before the Big Bang theory called Steady State theory. In this theory, there was not a single creation event and the Universe is continually expanding - matter is continually created alongside the expansion.

Red-shift supports both theories, CMBR supports only the Big Bang theory.

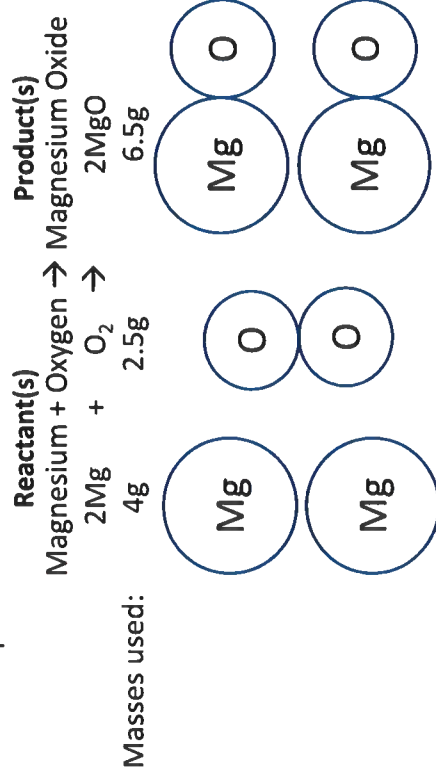
Year 9 Chemistry Knowledge Quantitative Chemistry page 1

Box 1 - Conservation of mass

Atoms are the basic units of matter that take part in chemical reactions. Atoms cannot be created or destroyed – during chemical reactions the atoms that make up the reactants rearrange to make the products.

→ This means the mass of the reactants always equals the mass of the products.

For example:



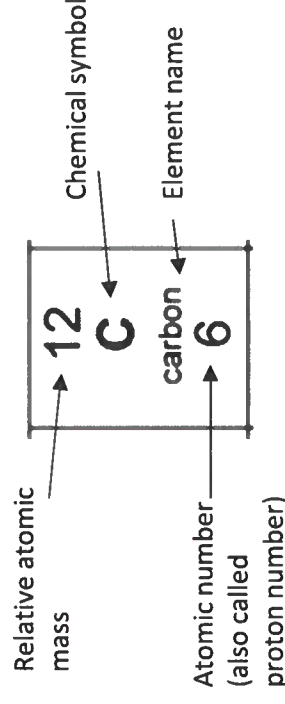
Box 2 - Representing Elements and Compounds using Symbols

- All the elements are given a chemical symbol. Symbols are unique to each element and consist of a single capital letter, often with a second lower case letter. For example, carbon and cobalt both begin with “c”, so are distinguished by giving carbon the symbol “C” and cobalt the symbol “Co” (not CO or co).
- All the chemical symbols for all the elements that exist are found in the Periodic Table of Elements, which exists in its current form based on the work of Dmitri Mendeleev.
- The variety of substances that exist are not accounted for by the elements. New substances called compounds are made when elements react together. The chemical formulae of compounds are based on the type of elements and the number of atoms for each element they contain.
- For example: carbon dioxide is made of one carbon atom (C) and two oxygen atoms (O). The chemical formula is CO₂ – the subscript (small) 2 means there are two oxygen atoms.

Key Terms	Definitions
Conservation	When things are kept the same, or maintained.
Mass	The physical substance of an object.
Element	Substances made of one type of atom. All the substances in the periodic table are different types of element.
Compound	A substance made of two or more different elements chemically bonded together in fixed proportions.
Chemical formula	A combination of element symbols and numbers used to describe the variety of atoms in a compound. For example, carbon dioxide is CO ₂

Box 3 - Relative Atomic Mass, Ar

- This is the combined mass of the protons and neutrons in the nucleus. All elements have a unique combination of protons and neutrons, and this means they have a unique mass.
- The mass of each element is known as its relative atomic mass because the numbers used are a comparison to the masses of the other elements.



- For example: the Ar of oxygen is 16, the Ar of silicon is 28, and the Ar of chlorine is 35.5.

Year 9 Chemistry Knowledge Quantitative Chemistry page 2

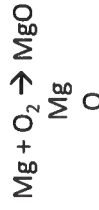
Box 4 - Balancing chemical equations

The conservation of mass in chemical reactions leads to the need to balance chemical equations. The mass of the products needs to equal the mass of the reactants.

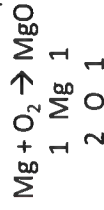
Step 1 – write out the chemical formula in its unbalanced form.



Step 2 – write out the symbols for the different elements present in the reaction.

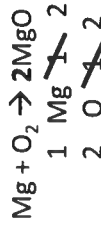


Step 3 – count how many atoms of each element are present:

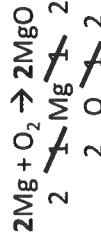


This equation is unbalanced as the number of oxygen atoms is fewer in the products.

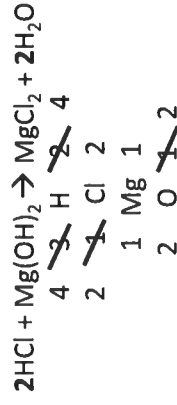
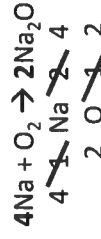
Step 4 – add large numbers in front of the chemicals in the reaction, this means you have added in another atom or molecule of that substance, then adjust the totals:



Step 5 – keep on adjusting the number of chemicals until the number of atoms of each element is the same:



Examples:



Box 5 - Relative Formula Mass, Mr

- The mass of each molecule is known as its relative formula mass and is calculated by adding together the relative atomic mass of all the atoms present.
- All molecules and compounds have a unique combination of atoms, and this means they have a unique mass.
- For example CaCO_3 contains the following elements:
1 calcium atom – Ar 40 for each atom, so $40 \times 1 = 40$
1 carbon atom – Ar 12 for each atom, so $12 \times 1 = 12$
3 oxygen atoms – Ar 16 for each atom, so $16 \times 3 = 48$
 $40 + 12 + 48 = 100$

Box 6 - Moles

- Moles are quantities given to substances that relate to how many atoms or molecules are present in a sample.
- One mole is equal to 6.022×10^{23} particles of a substance. This number is known as Avogadro's constant.
- Scientists can perform calculations to work out how many moles are present, or how much mass is needed or made in a reaction, linked together by the relative molecular mass.
- The formula used is:

$$\text{moles} = \frac{\text{mass (g)}}{\text{relative molecular mass (Mr)}}$$

For example:

A sample of sodium chloride (NaCl) has a mass of 4.75g.

First, calculate the Mr of NaCl

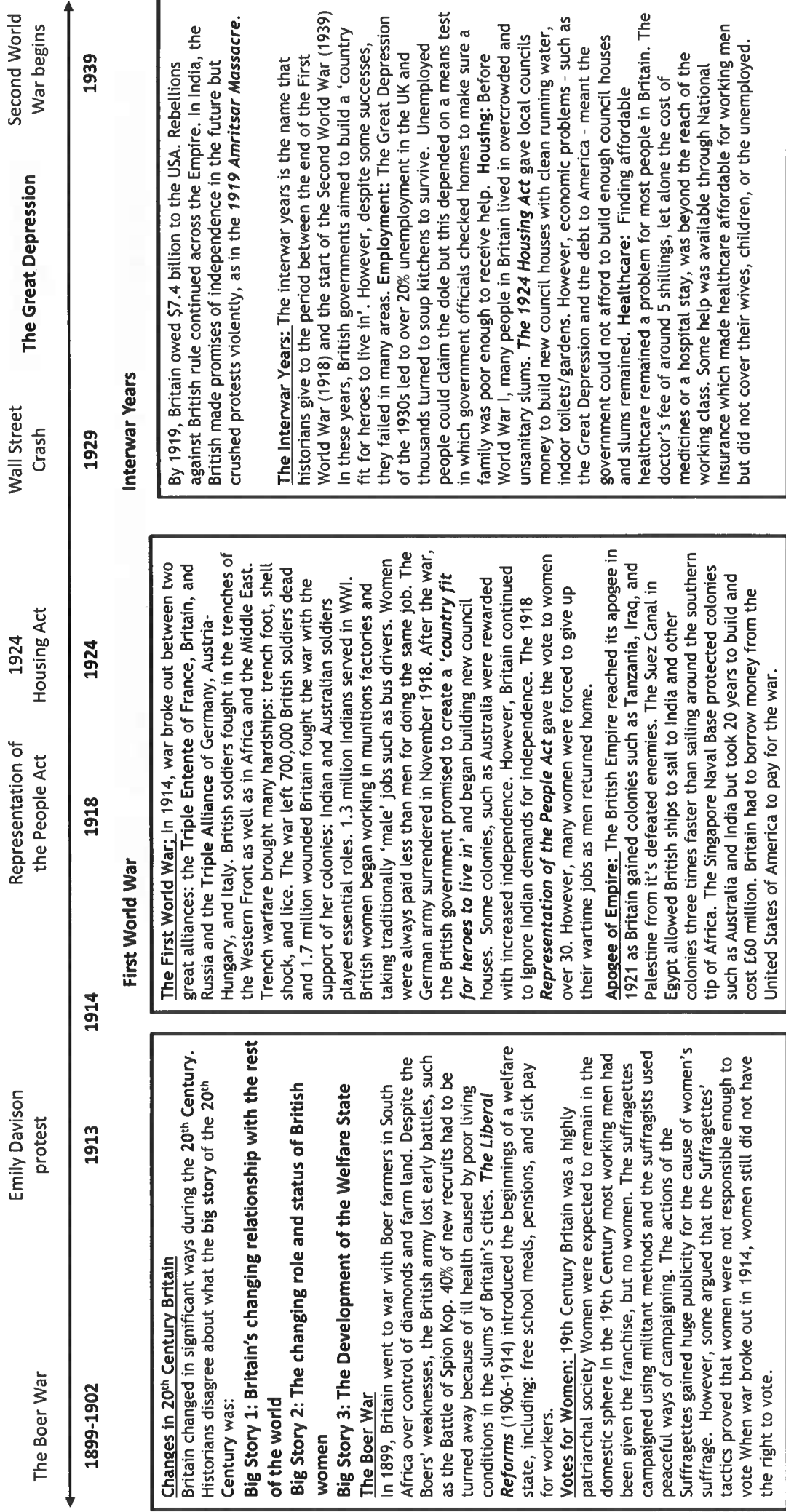
$$\text{Na: } 23 \times 1 = 23$$

$$\text{Cl: } 35.5 \times 1 = 35.5$$

$$23 + 35.5 = 58.5$$

$$\begin{array}{l} \text{moles} = \frac{4.75\text{g}}{58.5} \\ \text{moles} = 0.0812 \end{array}$$

History: Knowledge Organiser Year 9 Autumn Term 2023



Communist Russia: Communists criticised capitalist society and had a vision of a fairer world. Karl Marx believed that the workers should form a government. In October 1917, the Bolsheviks took control of Russia in the Russian Revolution. The Bolsheviks were a communist political party led by Lenin. **The Bolsheviks:** established a communist government in Russia, and ended the war in Germany, renamed the country the USSR and murdered the Tsar. The Bolsheviks were able to seize power because: Russia was losing the war against Germany, The Tsar was unpopular, most Russians were poor peasants and industrial workers, The Bolsheviks had an effective Red Army led by Leon Trotsky. Lenin changed Russia completely, but did not always live up to Marx's idea of communism. In 1924, Lenin died. He was succeeded by Joseph Stalin who ruled until his death in 1953. Stalin seized complete power in Russia, becoming a dictator. He removed Trotsky, he purged anyone who challenged his power and he used propaganda to show his greatness. **The lives of women** changed under the revolution. 1918, Lenin introduced a decree that gave women equal status to men. It became much easier for women to divorce their husbands. The government encouraged women to access education up to university level. The government ran nurseries so women would have free time to work and study. During WWII, many Russian women fought on the frontline. **Industrialisation:** Russia was much less industrialised than other European countries. In 1928, Stalin launched the first Five Year Plan: the first of a series of extremely high targets for producing industrial resources. **The Five Year plan:** Russian production of coal, steel, and iron increased. New hospitals/transport systems were built. By the 1940s, USSR was powerful enough to defeat Hitler in WWII. But manufacturing output was still behind the USA. Soviet workers in new cities worked in terrible conditions and were sent to the gulag if they went on strike. Many workers were forced labourers and prisoners. In 1927, Stalin introduced a policy of **Collectivisation:** This meant that peasants in each village united their farms into one collective farm - known as a kolkhoz. Land, tools and animals were pooled together so everyone could use them. Motor Tractor Stations were set up to distribute tractors to the kolkhoz. 90% of kolkhoz produce went to the government; the farmers kept 10%. The chaos caused famine in 1932-33, leading to over 5 million deaths.

Weimar Germany: The November revolution occurred because the Kaiser abdicated. A new government was introduced called **The Weimar Government.** This was a democratic government. Friedrich Ebert, the leader of the SPD became the German President and signed an armistice with the allies. Many people in Germany were angry with this. The new government allowed all men and women over the age of 21 to vote and used a system of proportional representation so each political party has seats in Reichstag. **Rebelfions:** 1. Left-wing Germans, such as Rosa Luxemburg, believed the November Revolution had not gone far enough and wanted a communist revolution, as there had been in Russia. 2. In 1920, some right-wing soldiers tried to seize power in the Kapp Putsch, but they failed. **The Treaty of Versailles:** The victorious allies forced the Weimar Republic to sign a harsh peace treaty. Germany lost land, soldiers, money and was blamed for WWI. Despite the problems facing Germany, some historians view the 1920s as the **Weimar Republic's Golden Years** because they borrowed \$3 billion from the USA so the economy was stable. Women had greater rights and freedoms, There were new cultural developments like the Dada art movement and politically not many people voted for extreme parties like the Nazis. After 1933 the **Nazi Party** began to rise to power. The Nazi Party took advantage of the **Great Depression** and Hitler was appointed **Chancellor in 1933.** **Nazi ideology:** Anti-Semitism - Jews were made scapegoats for Germany's problems and the Nazis promised to end the Great Depression - They promised to make Germany great again by offering voters work and bread. Hitler was able to remove key obstacles so he could rise to power: The Reichstag was set on fire in February 1933. The Nazis convinced the German public that a communist revolution was beginning. Hindenburg issued the **Reichstag Fire Decree** which allowed the Nazis to arrest all the communist leaders. March 1933: **The Enabling Act** allowed Hitler to make laws without the Reichstag voting on them. The SA surrounded the Reichstag to intimidate the representatives as they voted for the Act Communist representatives were not able to vote. Anyone who opposed the Nazis were sent to new **concentration camps** like the one at Dachau. **July 1934: The Death of Hindenburg:** When Hindenburg died, Hitler combined the roles of Chancellor and President to create a new role for himself: **the Fuhrer**

Vocabulary

20th Century
Agriculture
Alliance
Anti-Semitism
Apogee
Boers
Council houses
Capitalism
Communism
Collectivisation
Debt
The Dole
Franchise
Gulag
Kolkhoz
Munitions
Patriarchal
Purge
Significant
Suffrage
Suffragettes
Suffragists
Slums
Treaty of Versailles
Unemployed
Unsanitary
Trenches
Welfare State
Working Class
Western Front

The period 1900-2000
Farming
An agreement to support each other
Hatred of the Jews
High point
Dutch farmers in South Africa
Homes built by the government
Economic system in which property is owned by individuals for private profit
Economic system in which all property is owned by the community, rather than by individuals
Stalin's Agricultural policy
Money owed to someone else
Slang for unemployment benefit
The right to vote
Soviet prison camp
A collective farm in USSR
Weapons and ammunition
Dominated by men
Get rid of by force
Leading to change, causing or revealing
The right to vote
Suffrage groups using extreme methods
Suffrage groups using legal methods
Poor quality houses
Harsh Peace agreement signed by Germany following WWI
Without a job
Unhygienic, leading to disease
Ditches dug for protection in WWI
Government programmes to help people
Poorer people
Area of fighting between Germany and Britain/France

Geography Year 9 Term 1 – Why is the Middle East an important world region?

KPI 5 What is the importance of oil in the development of the Middle East? Importance: Oil is an example of a fossil fuel it is used for many things such as; powering machines and vehicles it is also used in the production of plastic. However, it is non-renewable (<i>can run out</i>). OPEC stands for Organisation of Petroleum Exporting Countries which includes countries such as Saudi Arabia, UAE, Iraq and Kuwait. 10 countries in the Middle East rely upon <u>oil</u> and petrol sales for their exports. Why is oil important? - <u>Oil</u> is necessary to produce a range of goods including medical equipment and for transports. - <u>Oil</u> can be sold and generate a lot of income for Middle Eastern countries. United Arab Emirates (UAE): • The UAE is located in Asia, in the region of the Middle East and south of the Persian Gulf. • In the 1960s it mainly relied upon fishing for income, and it had very little <u>oil</u>. Therefore, it diversified it's economy. • It diversified by: creating a top luxury tourist destination, developing it's trade links, getting cheap labour (<i>workers</i>) from south Asian countries for construction, creating the world's largest tax-free zone (<i>do not have to pay taxes</i>), launching Emirates Airline in Dubai, building the world's tallest hotel – Burj-Al-Arab, creating artificial (<i>man-made</i>) islands off the coast. • After diversifying, only 1% of the economy relies upon <u>oil</u>.	KPI6 Impact of Climate Change on the Middle East Six possible problems climate change will cause the Middle East: - Extreme temperatures: Temperatures are set to rise in the region by at least 4°C by 2050. This will lead to a higher death rate for the population. - Rising sea levels: The average global sea level is set to rise 30–122 centimeters (1 to 4 feet) by the end of the century, which would flood <u>aquifers</u> and wells and lead to some areas of farmland to be destroyed. - Water stress: The cost of water in Jordan has increased by 30% over the past decade because of the lack of groundwater (<i>underground water</i>) from <u>aquifers</u>. - Displacement: With areas being uninhabitable (<i>unable to live</i>), individuals will have to move. - Water conflict: Since December 2020, Turkish dams have cut the flow of the Euphrates River to neighboring countries such as Iraq by 60 percent, which has also resulted in food and power shortages in Syria. - Desertification: Desertification is the <i>process by which fertile becomes desert</i>. Large areas of the Middle East are becoming at risk of desertification.	KPI 7 Impact of tourism on Dubai Why are migrants coming to Dubai? - Strong economy - Politically stable (<i>unlikely to see any conflict</i>) - Modern infrastructure (<i>buildings and transport etc.</i>) Who are the migrants? - Low or semi-skilled workers come from Asia, other areas of the Middle East such as Syria and North Africa. - High skilled workers in the <u>oil</u> and gas industry, as well as banking and finance come from United Kingdom, United States, Australia and Canada. - Over 1.4 million people in the UAE are <u>migrants</u> and they are mainly male. What problems do unskilled migrants face? Until a few years ago if you came to Dubai to work in construction or housekeeping (or any low skill, low pay job) you had to let your employer hang on to your passport, had to ask for their permission to leave and get a new job. If they left without permission, they would lose their work permit and have to leave the country.	KPI 9 Israel and Palestine There is a 100-year-old issue – Israeli Jews and Palestinian Arabs both want the same land and a compromise has been difficult. The Israeli-Palestinian conflict is over who gets what land and how it's controlled. From an Israeli Jew's viewpoint: Palestine was not a country, it was just a part of the Ottoman Empire and then the British Empire. The land was legally given to the new country of Israel and happened to have Palestinian people living there. The land had been the <u>cultural</u> and religious home to Judaism for thousands of years. From a Palestinian Arab's viewpoint: the inhabited the land and were <u>colonised</u> and occupied by the Ottomans and then the British. The British had no right to give the land to the new country of Israel as it was not theirs to give away, meanwhile Jewish <u>migrants</u> and settlers have occupied and taken Palestinian land Suggested solutions: 1. The main approach to solving the conflict today is a so-called "two-state solution" that would establish Palestine as an independent state in Gaza and most of the West Bank, leaving the rest of the land to Israel. 2. The alternative to a two-state solution is a "one-state solution," wherein all of the land becomes either one big Israel or one big Palestine.
		KPI 8 Causes of Poverty in Yemen Yemen is classed as an LIC and is one of the poorest countries in the Middle East. It is an LIC because... • Conflict: Up until the 1990s there were regular outbreaks of civil war between the North and South of Yemen. • Imports and exports: Almost no products are exported. Most food is imported. • Government and wealth from oil: <u>Corrupt</u> governments have misused the nation's wealth and <u>oil</u> reserves are running out. • Infrastructure: No railways and many areas are inaccessible. • Gender equality: Worst country for gender equality – almost 49% of Yemeni women are illiterate (<i>unable to read/write</i>) • Water: 7th most water stressed country on the planet.	

Geography Year 9 Term 1 – Why is the Middle East an important world region?

Key words Aquifers: Underground sources of water. Climatic zone: An area with a similar weather throughout the year. Colonialism: The process by which one nation has control over another country which they have settled and taken over. Colonist: Someone who goes to live in a colony. Conflict: A disagreement between people. Corruption: where power is used for someone's personal gain. Culture: the ideas, customs and behaviour of a particular society. Development Gap: The difference in affluence (wealth) between richer and poorer countries. Development Indicator: Measures of development Development: The progress of a country in terms of economic growth, the use of technology and human welfare/wellbeing. Dictatorship: a form of government where one person is in control. Diversify: To change the economy to it buys and sells different items and makes money in different ways. Ethnic group: a community or a population made up of people who share a common cultural background. Fossil fuel: A natural fuel such as coal, oil or natural gas formed in the past from the remains of living organisms (plants and animals). Migration: Movement to another place. Oil: A liquid made from petroleum, a fossil fuel. Peninsular: an area of land almost surrounded by water or projecting (sticking out) into water. Population density: Amount of people living in a certain area. Renewable energy: Energy sources that will not run out when used, such as wind or solar power. Sustainable: Using something in a way it supports both present and future generations. Tourism: An industry that drives people to travel for recreation and leisure.	KPI 1 – What and where is the Middle East? Location: - Located where the continents of Asia, Africa and Europe meet. It is in SW Asia. - It is surrounded by several seas, - The River Tigris is the second largest river in western Asia and is one of the world's most important waterways. - The Arabian Desert covers most of the Arabian <u>Peninsular</u> and is the second largest desert on Earth Where does the name 'The Middle East' come from? The term the Middle East was first used by European <u>colonists</u> in the 19th century. Traders used it as a way of separating this area from India in the Far East (<i>Southeast Asia and China</i>). After the Second World War, the Middle East became the main term for the whole region (<i>area</i>). The Middle East is an outsiders term describing the geography not the <u>culture</u>. This explains why different countries can be included in this region. How was the Middle East influenced by Europe? In 1916, representatives of Great Britain and France secretly reach an agreement, known as the Sykes-Picot Agreement. It agreed that most of lands under the rule of the Ottoman Empire were to be divided into British and French areas at the end of WWI. Consequences: Different <u>ethnic</u> groups were split up and led to <u>conflict</u> across the region. Different communities had to ability to decide which country they were part of.	KPI 2 What is the climate like in the Middle East? There are two main <u>climatic zones</u> in the Middle East: desert to the south and a Mediterranean climate to the North. Climate Graphs: Used to present the climate of a region graphically. It uses both a bar graph and a line graph. Temperature is shown on a line graph. Rainfall is shown by a bar graph. Months of the year are shown along the bottom. Analysing a climate graph – Statistical Skills Total: Add up all the data sets i.e., add up all the temperatures throughout the year. Mean: Total temperature or precipitation ÷ the number of data sets. Range: Highest piece of data – the lowest piece of data. Mode: Most common piece of data What problems does the climate create in the Middle East? Causes of water shortages: - Extreme climate - Rising population <u>Migration</u> to overcrowded cities - Emptying of underground <u>aquifers</u> Potential solutions: Drip irrigation – using small plastic pipes to water the roots of the crops (saves 40% of water used in farming) Desalination – removing salt from sea water to create more drinking water. It can only be used in areas with access to the ocean and can double salinity (<i>saltness</i>) of water if dumped back into the sea. Buying and selling water – Countries which have surplus rainfall (<i>too much rainfall</i>) can sell water to other countries that a water deficit (<i>not enough water</i>) Using water from underground aquifers – underground rock is saturated with water that has been stored for thousands of years. This water can be extracted and used.	KPI3 - How is population distributed in the Middle East? - Population of 411 million. - Densely populated areas include coastal areas, capital cities and on rivers in the region (i.e., Nile valley in Egypt) - Highest populations are in countries like Turkey, Syria and Iraq. Reasons for high population density: - Coastal areas have higher density i.e., capital cities on the Arabian <u>peninsular</u> - Areas with access to rivers have a higher population density i.e., areas around the River Nile Reasons for low population density: - Arid (<i>hot and dry</i>) and inhospitable (<i>areas that are not easily to live in</i>) desert areas have lower density. KPI 4 How developed is the Middle East? Development indicators: Access to healthcare: how many doctors per 1000 people Access to safe water: % of people that have access to clean water Literacy rate: % of people aged 15+ that can read and write. Daily calorie consumption: Calories consumed per day GNI per capita: Total money earned in a country divided by the total population. Infant mortality rate: How many babies that do not survive past the age of 5. Human development index: an average of life expectancy, education, GNI. Human and Physical factors contribute to uneven development: Physical Factors: Mountainous terrain, extreme heat and low rainfall, supply of oil. Human Factors: Rapid population growth, lack of government investment, conflicts, <u>dictatorships</u>, <u>corruption</u>; lack of investment.
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Geography - Year 9 Term 2 How sustainable is ecosystem exploitation?

KPI 5 What is coltan and where is it mined?

What is coltan? - Coltan is a mineral which is used in the making of mobile phones, laptops, and computers.

Example - The Democratic Republic of the Congo (DRC) is rich in mineral wealth and contains 80% of the world's coltan. Many coltan mines are in the DRC's Kahuzi-Biega National Park.

Why is coltan mining so damaging?

Coltan mining often takes place in areas where there are tropical rainforests. Before mining, a large amount of tropical rainforest needs to be cleared.

Benefits of coltan mining:

- Coltan is worth \$100 per kilo.
- Miners earn between \$10-\$50 a week. This is 5 times more than most other people in the DRC.
- Coltan is one of the world's most vital (*important*) minerals, and 60% of coltan globally is found in the Democratic Republic of the Congo's (DRC) Kivu province. In 2019, 40% of the global coltan supply was produced in the DRC.

Problems of coltan mining:

- The Kahuzi-Biega national park is the largest national park in the DRC. It is a vast area of tropical rainforest and is home to the Eastern Lowland Gorilla. The population of the Eastern Lowland Gorilla has declined by 90% since 1990 from 5000 to 500. This is due to a loss of habitat and miners selling their meat as bush meat.
- The Park is a UNESCO world heritage site due to its amount of biodiversity (*range of plants and animals*) and vast areas of tropical rainforest have been cleared to make way for the mines.
- 30% of children have abandoned school to work in the mines.
- Surrounding countries are also starting to mine Coltan. The Rwandan army are making £20 million a month.
- Competition for the mines is fierce and often very violent.
- Gangs and rebel troops have taxed miners for access to the mines. The money from the tax is used in the illegal buying and selling of weapons.
- Occupational hazards include daily exposure to Radon, a radioactive substance associated with coltan, which has been linked to lung cancer.

KPI 5 How are oceans being exploited?

Oceans are an important **ecosystem** as they are a huge source of food for the world's population. Over 1 billion people rely on fish as their main source of protein. This means many of the world's oceans are used for fishing. The global fishing industry employs over 38 million people. However due to the high demand for fish and continued employment of people it is causing some areas to be over fished resulting in ocean ecosystems being exploited and damaged.

Dredging and Trawling:

A dredge is towed along the bottom of the sea by a fishing boat in order to collect edible (able to eat) bottom-dwelling species (animals that live at the bottom of the ocean).

- **Problems:** The nets or dredges both scoop up all kinds of fish, even the ones that they may not be trying to catch. The nets and dredges stir up and disturb all the bottom dwelling fish's habitat. In other words, all the living plants that grow on the lakes floor would be damaged.
- **Advantages:** You can catch a bunch of fish at once. In other words, it is fast and efficient. You can keep up with the demands of the stores that sell fish. So, fishing businesses can also make more money.

KPI 6 What is sustainable fishing?

Sustainable fishing -protects ocean environments and ensures fish stocks are not depleted (*run-out*) so they are there for future generations.

- Higher labour costs due to more time intensive fishing practices
- Lower profits due to not being able to catch at larger scales due to quotas
- Fish stocks remain healthy so will be there for future generations
- Can help to ensure food security as supplies won't run out.
- Protects endangered species

KPI 5 How is the savanna being exploited?

Safaris are popular holidays that people from higher income countries like the UK, USA and France go on. One of the most popular is the Masai Mara which is located in the Serengeti National Park. The Masai Mara is home to huge herds of wilder beast, lions, elephants, rhinos and many more. This attracts between 150,000 – 200,000 visitors each year.

Benefits of safari holidays

- Tourists can be educated about the dangers to the ecosystem and ways to help conserve it
- 15% of Kenya's income is from tourism.

Problems of safari holidays:

- Wildlife can be disrupted by tourism in the area.
- Locals only do the low-skilled jobs as companies will bring in foreign workers for the high-skilled jobs.

Geography Year 9 Term 2 How sustainable is ecosystem exploitation?

KPI1: Key words	KPI 1 What is an ecosystem?	KPI3 How does latitude affect the location of biomes?
Ecosystem: A community made up of biotic and abiotic elements. Biotic: Living organisms (e.g. plants and animals) Abiotic: Non-living things (e.g., rock and soil) Producer: converts energy from the sunlight into sugars by photosynthesis to produce their own food e.g. plants. Consumer: animals who feed on the plants, getting the energy from the producer. Decomposer: break down dead organisms/material and then the nutrients are recycled back into the soil e.g., fungi/bacteria. Biomes: A biome is a large-scale ecosystem defined by abiotic factors: Climate, relief, geology, soils, and vegetation. Latitude: The distance of a place north or south of the earth's equator. Exploitation: when the natural resources for an ecosystem are used for economic benefit. Deforestation: Cutting down trees Pastoral farming: is aimed at producing livestock, rather than growing crops. Arable farming: involves growing crops such as wheat and barley. Hydroelectric Power: electricity produced from generators driven by turbines that convert the potential energy of moving water into mechanical energy. Infrastructure: the things that makes a country work. It is the basic equipment and structures (such as roads and bridges) that are needed for a country, region, or organisation to function properly. Food Chains: A food chain refers to the order of events in an ecosystem, where one living organism eats another organism, and later that organism is consumed by another larger organism. Food Webs: A food web consists of all the food chains in a single ecosystem	Ecosystem: an environment in which plants and animals interact with each other and the climate on rocks and in soil Parts of an ecosystem: animals, plants, rocks and soil and the climate. We can classify parts of an ecosystem as either: Biotic (alive) – plants and animals. Abiotic (they have never been living) – climate and rocks. Transfer of energy in an ecosystem: Energy transfers can be shown in two different ways for ecosystems: - A food chain outlines who eats whom e.g. insects eat plants, birds eat insects. - A food web is all of the food chains in an ecosystem. Ecosystems are very sensitive to change. The biotic and abiotic parts of the ecosystem can be altered by either natural factors or human management. Changes to the ecosystem caused by natural factors include: - drought (<i>lack of rain</i>) - flood - fire - disease	Biome: A large-scale ecosystem. <i>Location of Biomes:</i> Deserts are located along the Tropic of Cancer and Capricorn. They are located between 15-35° North and South of the Equator. Deserts are in the North of Africa, Eastern parts of the USA & central Australia. Grasslands are located above the Tropic of cancer and Capricorn. They are located between 23.5° - 60° north and south of the equator. Grasslands are in North America, Asia and South America. Tundra's are located between 60° - 90° north of the equator. They are in the north of North America, Europe and Asia. There are TWO reasons why the latitude affects the temperature of biomes. Reason 1: Distance from the sun. Places located at higher latitudes (further away from the equator) are colder because of the shape of the earth, the sun's rays have a longer distance to travel. Reason 2: Tilt of the earth. Due to the shape of the earth, the sun's rays are less concentrated at higher latitudes (further away from the equator). This results in colder temperatures because there is more of the Earth's surface to heat compared to lower latitudes that are closer to the equator. KPI 4 How are tropical rainforests exploited? Example country: The Amazon rainforest is located on the continent of South America. Most of the Amazon is in the country of Brazil. Causes of deforestation: Logging: The removal of trees in order to use their wood. This has caused an area of 589,000 km², larger than France, has disappeared in the last 30 years. Cattle farming: Farmers clear the forest and then use the land to graze (feed their cattle) Road building: Land is cleared to build roads to bring equipment and transport products to be sold. For example, the Trans-Amazonian Highway began construction in 1972 and is 4,000 kilometres long. Settlement and population growth: Clearing the forest to build settlements (housing) for workers. For example, Manaus, a city in the Amazon has a population of over 2 million showing the population growth. Mineral extraction: Vast areas of tropical rainforests to allow mining to occur. It has caused 50,000 hectares of land deforested. Hydroelectric Power: HEP in the Amazon Basin has caused areas of forest being flooded to create the reservoirs and dams. The flooding of the Balbina dam in Brazil resulted in the loss of 920 square miles of tropical rainforest.

Year 9 Term 1 French – Qui suis-je?

1	Dans ma famille il y a cinq personnes	In my family there are five people
2	y compris moi, mon père, ma belle-mère, ma demi-sœur et mon neveu.	including me, my dad, my step-mum, my half sister and my nephew.
3	Moi j'ai les cheveux roux et mi-longs et des boutons.	I have red, mid-length hair and spots.
4	Mon père porte des lunettes et il a une barbe grise.	My dad wears glasses and he has a grey beard.
5	Je dirais que ma demi-sœur est sage, aimable et charmante	I would say that my half sister is wise, likeable and charming
6	donc nous entendons très bien.	therefore we get on very well.
7	Cependant, de temps en temps je me dispute avec ma belle-mère	However, from time to time I argue with my step-mum
8	car je la trouve têtue et méchante.	because I find her stubborn and mean.

9	Pour moi, un bon ami est drôle et il dit toujours la vérité.	For me, a good friend is funny and he always tells the truth.
10	Ma meilleure amie, qui s'appelle Monique, est géniale.	My best friend, who is called (calls herself) Monique, is great.
11	D'habitude on va ensemble au centre-ville.	Usually we go together in the town centre.
12	Il y a un grand centre-commercial où on peut faire les magasins	There is a big shopping centre where you can do shopping
13	et devant le centre-commercial il y a un bowling.	and in front of the shopping centre there is a bowling alley.
14	Ce week-end on va aller au cinéma pour regarder un film	This weekend we are going to go to the cinema (in order) to watch a film
15	et après je vais aller à la patinoire.	and after I'm going to go to the ice-rink.
16	Hier soir, je suis allée à un resto avec mon petit-copain.	Last night, I went to a restaurant with my boyfriend.

17	Nous avons mangé de la nourriture chinoise, c'était absolument délicieux.	We ate Chinese food, it was absolutely delicious.
18	Quand j'étais plus jeune, j'allais au stade avec mon père car il adore le rugby	When I was younger, I used to go to the stadium with my dad because he loves rugby
19	mais moi je détestais ça, car j'aimais le foot.	but I hated (used to) it, I used to like football.
20	Mon modèle est Kylian Mbappé, c'est un footballeur qui joue pour le PSG.	My role model is Kylian Mbappé, he is a footballer who plays for PSG.
21	Je l'admire car il a travaillé très dur pour devenir footballeur professionnel	I admire him because he worked really hard (in order) to become a professional footballer
22	et il m'impressionne énormément.	and he impresses me a lot.

Example of what LSQs for MFL should look like:

Questions	Answers - Test yourself
1 Les is a town which calls itself (is called) York	J'habite dans une ville qui s'appelle York
2	J'habite dans une ville qui s'appelle York
3	J'habite dans une ville qui s'appelle York
4 and which first city (is located) in the south-west of England	et qui se trouve dans le sud-ouest de l'Angleterre
5	et qui se trouve dans le sud-ouest de l'Angleterre
6	et qui se trouve dans le sud-ouest de l'Angleterre
7	et qui se trouve dans le sud-ouest de l'Angleterre
8 it's a small town near the Bristol	C'est une petite ville près de Bristol
9	C'est une petite ville près de Bristol
10	C'est une petite ville près de Bristol
Additional Homework	
Book / unit / test / number	
Pages Read 2047 - 25	
Signal	

Year 9 Term 1 Spanish – Desconéctate

1	Normally during the holidays	Normalmente durante las vacaciones
2	when it is good weather I go horse riding (I ride a horse)	cuando hace buen tiempo monto a caballo
3	or I go to the beach with my friends.	o voy a la playa con mis amigos.
5	When it rains I love to watch TV with my siblings	Cuando llueve me mola ver la tele con mis hermanos
6	but I prefer to read comics in my room.	pero prefiero leer los tebeos en mi dormitorio.
7	Sometimes I go on holiday to Spain with my family	A veces voy de vacaciones a España con mi familia
8	but I prefer to spend the holidays with my friends.	pero prefiero pasar las vacaciones con mis amigos.

9	Last year I went on holiday to London with my parents.	El año pasado fui de vacaciones a Londres con mis padres.
10	We travelled by car because it's faster than by train.	Viajamos en coche puesto que es más rápido que en tren.
11	I stayed in a hotel, it was modern and expensive.	Me alojé en un hotel, era moderno y caro.
12	When it was bad weather I relaxed in the hotel.	Cuando hizo mal tiempo descansé en el hotel.
13	When it was sunny I visited monuments in the centre.	Cuando hizo sol visité monumentos en el centro.
14	The best thing was when I went to the aquarium.	Lo mejor fue cuando fui al acuario.
15	The worst thing was when I lost my phone at the airport.	Lo peor fue cuando perdí mi móvil en el aeropuerto.

16	The good thing about the town was that it was very lively.	Lo bueno del pueblo era que era muy animado.
17	The bad thing about the town was that there was lots of traffic.	Lo malo del pueblo era que había mucho tráfico.
18	I liked my trip because it was so unforgettable.	Me gustó mi viaje porque fue inolvidable.
21	I want to reserve a double room with views of the sea.	Quiero reservar una habitación doble con vistas al mar.
22	I want to complain because the air conditioning does not work.	Quiero quejarme dado que el aire acondicionado no funciona .

Example of what LSQs for MFL should look like:

2 mins read

10 mins prep quiz

2 mins answer

3 mins answer

2 mins check & correct

Questions

1 | Live in a town which calls itself (in colloquial) York

2

3

4 | and which finds itself (as located) in the South-west of England

5

6

7

8 | it's a small town near the Bristol

9

10

Answers - Test Yourself

J'habite dans une ville qui s'appelle York

J'habite dans une ville qui s'appelle York

J'habite dans une ville qui s'appelle York

et que se trouve dans le sud-ouest de l'Angleterre

et qui se trouve dans le sud-ouest de l'Angleterre

et qui se trouve dans le sud-ouest de l'Angleterre

C'est une petite ville près de Bristol

C'est une petite ville près de Bristol

C'est une petite ville près de Bristol

Additional Homework

Book / ... not in notes

Pages Read 200-225

Signature

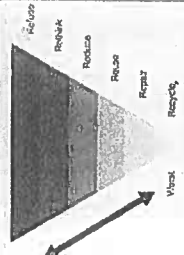
Key terms Conflict - a serious disagreement or argument Peace- a state or period in which there is no war or a war has ended. Justice- Just behaviour/treatment through the quality of fairness War- a state of armed conflict between different countries or different groups within a country. Civilians- a person who is not involved in the armed service Retaliation- the action of harming someone, or seeking revenge Greed – a selfish desire to want something, WMDs- Weapons of mass destruction Hiroshima- On Monday 6th August 1945, during WWII, America dropped the first atomic bomb over the Japanese city of Hiroshima Pacifism- The belief that all war and violence are unjustifiable Sanctity of life- The religious belief that all life is sacred and holy, as life is God given Ahimsa- Hindu/Buddhist term to respect all living things and avoid violence towards others-linked with the first moral precept 'do not harm' Quakers- a member of the Religious society of friends, a Christian denomination, following the teaching of peaceful principles.	Year 9 term 1- Is religion a source of peace? KPI11: To understand why wars are fought. What is war? War is an organised conflict usually consisting of intense violence carried out by one state or states against another state or states. What are the causes of conflict? The causes of any war are complex. Wars are rarely about just one thing. They can be declared when a state or states act to: attack or invade another state, to gain territory or resources, resist such an attack or invasion by an aggressor, protect another state from attack by an aggressor, impose domination or political change on another state, or to resist such domination. War can also occur internally within a state between organised groups. This is known as civil war. https://www.bbc.com/bitesize/guides/zbygixs/revision/1	KPI2: To explore Christian attitude towards the reason for war In the Old Testament, people are sometimes commanded by God to go to war. • "The lord your God will drive out those nations before you." Deuteronomy 7:22-24 The Old Testament Prophet, Joel, tells the people that God wants them to go and fight, • "Prepare for war! Rouse the warriors! Let all the fighting men drawn near and attack." Joel 3:9-10 • "The Lord is a warrior." Exodus 15:3 • "There is a time for killing, and a time for healing, a time for war, and a time for peace." Ecclesiastes 3:2-8 Christians use these quotes in a discussion about war and the use of violence to show that there are times when war is justified. God cannot be totally opposed to war in all circumstances.
	KPI4: To explain religious views on pacifism Pacifists reject all violence. They do not think that conflict should be dealt with by resorting to war. -In the Gospel of Matthew, Jesus said: Blessed are the peacemakers: for they shall be called the children of God. Pacifists also use the teaching in the Ten Commandments to justify their position. In Exodus it says: Do not murder. The Five Precepts are moral guides that all Buddhists try to follow in order to minimise desires and reach enlightenment. The first of these Precepts is to abstain from taking life. Killing or harming human beings is therefore clearly problematic for Buddhists. Because of this, some Buddhists would not rise to an attack or to any conflict with violence. all living things are believed to have equal worth and should not be harmed	KPI3: To investigate arguments around WMDs Weapons of mass destruction (WMDs) are weapons that can kill a large number of people causing great damage to the environment. - Examples include nuclear weapons (bombs using radioactive material); biological weapons (weapons infecting people with disease) and chemical weapons that burn people. -Some people support the right to have these saying that they keep peace as countries will not attack other countries if they have got nuclear weapons. Many people are against them as they result in civilian casualties and lasting environmental impact. They could even destroy the world. Many people say that since they are bound to kill civilians using them would mean that a just war would no longer be possible. https://www.bbc.com/bitesize/guides/zbygixs/revision/3



Design & Technology Year 9

The 6 R's

The 6 R's are an important checklist. They are used by designers to reduce the environmental impact of products. They can also be used to evaluate the environmental impact of other products. The hierarchy of sustainability places the strategies that are best for the planet about those that have a greater negative impact on the environment.



1. Refuse

The first stage in the process is to ask whether the proposed product, part, purchase or even journey is required at all. Asking the question 'Is it really necessary?' can play a major role in reducing the demand on materials. Simply not using something saves 100% of what you have chosen not to use. Example include:

- Using your own carrier bag rather than purchasing a new one.
- Walking or cycling to school instead of being driven.
- Not using products such as some pesticides that are known to be harmful to the environment.
- Not eating (or using) products that are over-farmed, over-fished or on the endangered list.

2. Rethink

Consumers have a growing number of choices to make about where and on what they spend their income. Greener and more sustainable options are not always the cheapest or the best, but making informed decision and rethinking ones spending power can play a huge part in conserving resources.

Deciding on the design of a product, e.g. the materials being used in its production, will directly affect its sustainability. The types of questions designers need to ask are:

- Are the materials locally sourced?
- Are they sustainably produced?
- Is it essential to use this material, of which there is a finite supply?

By rethinking how the product is likely to be made, the product can often be redesigned in a more responsible way.

3. Reduce

Reduction is often the result of having re-thought a design or action. Materials and energy are saved due to efficient manufacturing practices and the use of clever design, incorporating sustainable materials.

- Modern materials that are lighter and stronger than traditional ones have contributed to the miniaturisation of products, saving material and energy in manufacture and use.
- Reducing the complexity or number of parts a product uses and reducing the number of different materials in a product makes recycling easier.
- In factories, schools and hotels, fitting motion sensitive lighting and smart heating systems can significantly reduce energy usage.
- Many large companies employ staff to conduct 'energy walks' to turn off unused appliances and lights and to ensure windows and doors are shut to conserve heat.

4. Reuse

Reusing products multiple times for the same purpose is also known as **primary recycling**. Reusing a product in a different way from the one it was designed for is known as **secondary recycling**.

The classic glass milk bottle is reused many times before it reaches the end of its useful life, as which point it is recycled. A plastic milk bottle, however, is intended to be used only one, although it can have many different subsequent uses.

Donating to and buying from charity shops extends the life of products and in recent years there has been a resurgence of in products having second lives, thanks to websites such as eBay, Freecycle or Gumtree.



It is also becoming popular for furniture and other household items to be **upcycled** with a coat of paint and some minor repairs or adaptations, extending their useful life by many years.

5. Repair

Being able to repair a product when it is broken or worn is a way of extending its life and delaying the purchase of a new one. Repairing is a positive option over replacement as it means that only some parts of the product are replaced. This creates jobs for skilled people who conduct repairs and stimulates a spare parts market.

Unfortunately, repairing products has become harder over years. Growing number of products are not design to be repaired. There are a number of reasons why items may be designed this way, but it is usually because they are cheaper to replace than repair. Some products, especially modern electronic products, are designed to last only a few years as technology dates quickly and older products will be superseded by newer, faster, more efficient models. This is called **planned obsolescence**.

6. Recycle

Tertiary recycling, although a very important stage, is lower down the hierarchy of preferred options because most materials that are recycled this way tend to be of lower quality than the original material. It takes a lot of energy to recycle materials.

This form of recycling requires the reprocessing of the material and in many cases involves chemicals and/or heat to recover the recycled materials. In an ideal world, tertiary recycling would remove all recyclable materials from our household waste so that only biodegradable materials would be left. Only very few parts of the world are set up to cope with this level of processing.

7. Sustainability

Our planet has to provide all of our basic human needs, such as food, shelter and warmth. Designers now have a much better understanding of which materials are sustainable and which are not. The general principle is that resources fall into two categories:

Finite resources – are ones which are in limited supply or cannot be reproduced.

Non-finite resources – are ones which are in abundant supply and are unlikely to be exhausted.

8. Recyclable materials

Once all useful and recyclable materials are removed, the majority of the remaining waste is organic matter and can be processed in one of two ways; 'Recover' or 'Rot'. Food waste and garden waste can be processed at a high temperature and turned into compost. The waste can also be buried in landfill sites where the resulting methane gas from the rotting matter is collected and burned and used to generate heat or electricity in the same way.

Year 9 – Food Technology

Malnutrition (Deficiencies/Excesses & Effects on Health)

Malnutrition	There is a link between a poor diet, and the risk of developing some diseases. This includes the risk of: * cancer; *Coronary heart disease (CHD); *bone health; *anaemia. Having intakes of energy and/or nutrients below or in excess of needs for long periods of time can affect health. The risk of malnutrition is increased by: *increased requirements for some nutrients *restricted range of foods; *reduction in available income; *very low income; *medical conditions; *psychological conditions.
Undernutrition	Worldwide, Kwashiorkor and marasmus are two common diseases caused by a lack of protein and energy. Fat soluble vitamins (A, D, E and K) are stored in the body so it takes time for deficiency diseases to develop.
Diet and Cancer	The World Cancer Research Fund has released nine cancer prevention recommendations *Be a healthy weight *Move more *Avoid high-calorie foods and drinks *Enjoy more grains, veg, fruit and barley. Limit intake of red meat and avoid processed meat *Don't drink alcohol *Eat less salt *Don't rely on supplements. Breastfeed your baby.
Diet & Coronary Heart Disease	It is believed that 80% of CHD and strokes could be prevented by changes to lifestyle factors, such as diet, physical activity and smoking. Changes to the diet to reduce the risk of CHD include: *increasing oily fish intake; *reducing salt intake; *increase fruit and vegetables; *decreasing alcohol consumption.
Bone Health	Calcium is important for strong bones. Vitamin D is needed for calcium to be absorbed from food.
Anemia	Iron is vital for making red blood cells. Iron from the diet forms haemoglobin, which carries oxygen in the blood. Anaemia develops if the body's stores of iron are too low.
Obesity	People who are obese are more likely to suffer from CHD, type 2 diabetes, gall stones, arthritis, high blood pressure and some types of cancers, i.e. colon, breast, kidney and stomach.
Inactivity	It is also important that the amount of time being sedentary is reduced. Over time, sedentary behaviour can lead to weight gain and obesity, which can increase the risk of developing chronic diseases in adulthood.

Food Labelling

Packaging Information	Information on the labels of pre-packed food and drink products can be legally required or just for consumer information. Legally required information is: country of origin and place of provenance (where an ingredient is from); date mark; list of ingredients (including additives and allergens); name and address of the manufacturer, packer or seller; name of food or drink; nutrition information; storage and preparation instructions; weight or volume. Consumer information (not a legal requirement) front-of-pack nutrition label; price; serving suggestions/image.
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Year 9 – Food Technology

Functional Characteristics of Ingredients

Selecting Ingredients	Ingredients are chosen for a number of reasons, *to add flavour, colour or texture *to provide a particular function, e.g. to thicken *to provide nutrients or change the nutritional profile of a dish, e.g. to increase fibre *to extend the shelf life, e.g. vinegar for pickling or chemical preservatives *cost and availability, e.g. fruit in season *to satisfy a need to buy food with a certain provenance, e.g. Red Tractor.
Adding Flavour, Colour or Texture	• Fresh and dried herbs and spices can be added to dishes to provide flavour and replace the salt in some dishes, • Fruit, vegetables, herbs and spices can all be used in recipes to add colour. • Nuts, seeds, grains, fruit and vegetables can be added to recipes to provide texture. • The cooking method and cooking time can impact the texture, e.g. steaming or microwaving vegetables quickly can retain their colour, flavour and firm texture. • Equipment used to process food can impact the texture - blending soup for a smoother texture.
Ingredient functions in recipes	browning , e.g. flour in a bread roll (dextrinisation); raising , e.g. yeast in bread (aeration); setting , e.g. scrambled eggs (coagulation); thickening , e.g. flour in a roux sauce (gelatinisation).
Raising Agents	mechanical , e.g. beating, creaming, rolling and folding, sieving, whisking; chemical , e.g. baking powder, baking powder, self-raising flour; biological , e.g. yeast. Different foods may use one or more of these to achieve a desirable end result.
Tenderisation	Mechanical tenderising – a meat cleaver or meat hammer may be used to beat the meat. Cutting into small cubes or mincing can also help. Chemical tenderisation (marinating) –the addition of any liquid to flavour or soften meat before cooking.

Glossary

Key Terms	Aeration: Incorporating air into a mixture. Caramelisation: The chemical change of heated sucrose (sugar) to caramel, which produces flavour and browning. Coagulation: The irreversible denaturation of protein molecules to thicken and set. Denaturation: A change in the structure of protein molecules, resulting in their unfolding. Dextrinisation: The reaction of dry heat on the surface of food which changes starch to dextrin, e.g. toast. Gelatinisation: The process of thickening which takes place when a mixture of starch and liquid is heated. Shortening: The effect caused when fat is rubbed into flour (rubbing in method - crumble. The fat coats the flour particles, waterproofing them to prevent gluten formation. Allergen: An ingredient that may cause an adverse reaction to food. Back-of-pack labelling: Is legally required and can help consumers make healthier choices. Front-of-pack labelling: Is voluntary but must provide certain information and can use red, amber and green colour coding. Use-by-date: Relates to the safety of the food. Food must be eaten by this date. Best-before-date: Relates to the quality of the food. Food may still be eaten beyond this date.
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Art Year 9 - Term 1

Formal Elements	Definition	Example	Keywords
Line	A mark that connects two or more points.	These can be straight, curved, short or long. Specific types of line include: outline (generally a black line that goes around an image) and continuous line (a line in which you do not take your pencil/pen of the page)	Observational Drawing Drawing something from real life in front of you. Tints & Shades Tint - Adding white to a colour to make it lighter. Shades - Adding black to a colour to make it darker.
Tone	The lightness or darkness or something.	For darker tones use a higher grade B pencil.	
Colour	Colour is what you see when light reflects of something.	Primary Colours - can't be made by mixing colours together (Red, Yellow & Blue) Secondary Colours - mix two primary colours together (Green, Orange & Purple) Tertiary Colours - mix a primary and secondary colour together (Blue + Green = Turquoise) Complementary Colours - Colours opposite each other on the colour wheel (Orange/ Blue, Green/Red and Purple/Yellow)	Proportion The size and relation of objects to one another. Using the grid-method is one way of helping you draw using accurate proportions. Cropping Removing the outer area of a picture, looks like the image has been zoomed into. Still Life A piece that depicts objects or something that is generally static (does not move). Landscape A piece that depicts a view of some sort e.g. mountains, the sea, fields, woodlands, buildings etc.
Texture	How something looks or feels.	Visual Texture - implied sense of texture that the artist creates through the use of various artistic elements such as line , shading, and color. Physical Texture - texture you can actually feel with your hand Adjectives to describe different textures - fluffy, rough, smooth, soft, bold, uneven, slimy, faint, chalky, tacky etc.	Abstraction Does not attempt to focus on accurate representation of reality but focuses rather on shapes, colours and gestural marks.
Pattern	A symbol, shape or colour that repeats.	Man-made patterns are designed by humans, natural patterns are formed by nature. Patterns can be orderly, uniform, geometric, random or symmetrical.	Realism Accurate representation of reality e.g. a chair looks like a chair.
Shape & Form	Shape is 2D. Form is 3D.	2D shapes include rectangles, squares and triangles. Geometric shapes are angular and have straight lines. Organic shapes have curved lines. 3D shapes include cylinders, spheres and cubes.	

Key Artist	Key Artist	More Keywords
Name Georgia O’Keeffe Technique/ Style Zooms in very closely and creates abstract looking organic shapes. Inspiration Natural Landscape, especially flowers. Materials used Oil Paints	Name Yellena James Inspiration Combines abstract forms, colourful shapes and tangled lines often found in nature. Materials used Pens, inks, markers, and acrylics	Clay A stiff, sticky fine-grained earth that can be moulded when wet. Kiln a furnace or oven used to fire pottery Ceramic made of clay and permanently hardened by heat. Glaze a substance used to add colour, decorate or waterproof a piece of ceramic work. Slip Watered down clay which is used as a type of glue to stick one piece of clay to another. Carving A shape or pattern cut into a specific material. Layering Laying one material on top of another (building up) Bisque Ware Fired clay that is ready to be glazed. Rolling Guides Wood slats used when rolling clay to give it an even thickness. Ceramics Any artwork produced using clay.

5 Key acting skills

Voice: This is how you use your voice in performance. You can change your voice using your; Tone, pitch, pace, emotion, volume, projection, dialogue, dialect, accent, intonation, whistling, SFX, interjection.

Facial Expression: They are used to show the audience how a character is feeling through; Eye contact, eye brows, straight, emotions, gritting teeth, tense, relaxed, wrinkled, creased, staring, twitching.

Posture: This can also be called body language. This is how a character/actor holds their body. For example; Bad posture would mean someone is hunched over.

Gestures: Gestures are movements that have a meaning. For example; if you wave at someone you would be saying hello to them. Gestures can be performed by; Hands, arms, speed, clicking, rubbing, waving, mannerisms.

Movement: This is any movement that does not have a meaning. For example; Walking. Speed, pace, acceleration, gait,

Physical Theatre

Physical Theatre is the a form of drama that emphasises storytelling through use of movement and physical expression.

It often integrates elements of dance and mime. In physical theatre a story or emotion is communicated with the body.

This does not mean that speech is not allowed, it just means the focus of the performance is the movement rather than the dialogue.

Often in physical theatre, objects are created with **bodies** and actors can become the set and props.

When creating physical theatre, performers will often go through something called the, 'Devising Process'. Devising involves the development of character, script, technical elements such as costume, lighting and sound.

When creating physical theatre you have to work as an **Ensemble**. This is a group of performers all working together in a performance for the best possible outcome.

Key Physical Theatre practitioners

Frantic Assembly

Frantic Assembly is a physical theatre company that started out in 1994 in Swansea Wales.

Frantic Assembly say that they, 'create thrilling, energetic and unforgettable theatre.'

They create non-naturalistic pieces through the use of movement and music, although they have always said that this should never take away from the storyline. They have created their own performances but have also adapted other famous plays such as, 'Othello.'

They use ensemble and contact work often in their pieces, and therefore believe in creating a trusting atmosphere when devising work.

Jacques Lecoq

He was a French theatre practitioner best known for his teaching methods in physical theatre, movement, and mime which he taught at the school he founded in Paris. He created a system for acting called, 'The seven states of tension'.

Example of how to self evaluate in Drama.

STRENGTH During my performance, I wanted to show how my character was really happy to see someone. To do this, I waved my hand violently and erratically to express how overjoyed I was at seeing the other character. I also had a very big smile and wide open eyes whilst making a high pitched noise to display my excitement. This was successful because the audience could clearly see how happy I was as my character was about to see his friend after a long time apart.

AREA FOR IMPROVEMENT During my performance, I wanted to show how my character was really happy to see someone. To do this, I slowly waved my hand and had a slight smile on my face whilst quietly saying 'Hello' in a soft tone. My intention was to show how I was happy but wanted to show it in a subtle way. However, the audience were confused by this and thought that my reaction was too small. If given the chance to perform this moment again, I would make my gestures much bigger, my movements quicker and my facial expressions much more exaggerated so that the audience can see my excitement much more clearly.

Frantic Assembly Techniques

Round-By-Through

This technique was created by Frantic Assembly and allows performers to create a sequence of moves. Performers will either move Round someone, By someone or Through someone.

Chair duets

This is another Frantic assembly technique. In pairs or small groups, performers will sit next to each other on chairs. Performers will then take it in turns to move a part or parts of their body. They can also move their partners body. Eventually the performers will have a sequence of moves which they can repeat over and over again without stopping.

Puppetry

In pairs or small groups one actor will become the puppet and the others will be the puppeteers. The puppeteers will then move the body parts of the puppet one at a time. This will create a performance of one or more characters controlling another character.

Frantic Assembly's Techniques

When using the techniques

mentioned it is important to follow a system which has been created.

Firstly you need to create the moves. Before you know what the scene is going to be or who the characters are you have to just create the basic routine of movements.

Next you can add resistance to the movements. This means that you might add different levels of tension to your own movements, or if your partner is moving your arm them they might resist your movement more.

Thirdly you can change the speed at which you do the movements. Each movement can have a different speed at which it is done.

The penultimately element to add is eye contact. You have to find some moments where you can make eye contact with your partner.

Finally you can add any extras such as Lighting or sound.

Once you have done all of this you will be able to see a story and characters being created without needing to think about it.

Physical Theatre Techniques

Ensemble movement

This is a technique which started during Greek Theatre. Performers will work as a team to create one moving object or scene. An example of this is performers creating the object of a moving car.

Total Theatre

This is a style of theatre created by a practitioner called Steven Berkoff. His style of theatre is physical and exaggerated. It is completely non-naturalistic. Total theatre is where voice, movement, music, lighting all work together with equal importance to create performance. Actors will use their whole bodies to create physical objects such as a bed. The actors will have to physically create the whole object.

Mirroring

Actors will stand opposite each other and copy one another's moves exactly. The audience should not be able to tell who the leader of the pair is as the performers should be so in sync with one another.

How to create tension in performance.

Eye contact – Maintaining eye contact with the person you are in direct conflict with will increase the tension dramatically. It connects you to each other in a non physical way but still very personal.

Pauses – Arguably the most important of the three. Moments of silence are essential when building tension as not only do they show that each character is carefully weighing up their next move but it allows the audience to take some time to absorb the situation and keep them guessing what is going to happen next.

Volume and pace – speaking at a natural volume and pace lulls the audience into a false sense of security. By slowing decreasing both, the audience naturally begin to feel tension building. This can then be increased to a quicker pace and louder volume until the scene reaches a climax.

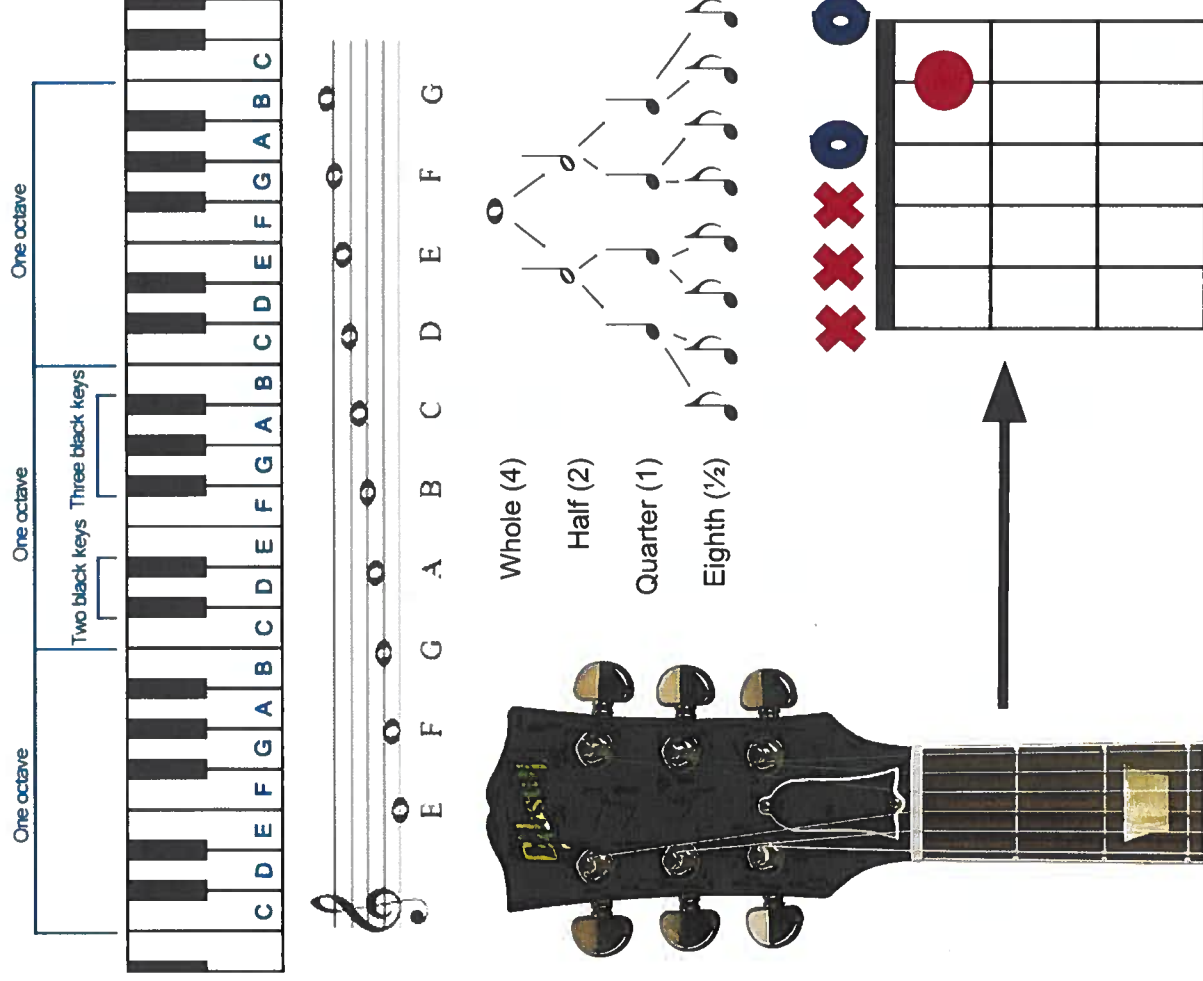
MUSIC - The Elements of Music

Key Terminology

- Conductor** - A person who directs the performance.
- Note** - A singular sound.
- Chord** - A group of three or more notes played at the same time.
- Harmony** - Different notes played or sung together.
- Melody** - A small arrangement of notes that make a tune.
- Scale** - A series of eight notes starting somewhere between A-G.
- Arpeggio** - When you play the 1st, 3rd, 5th, and 8th note of a scale one after each other.
- Rhythm** - The pattern of how notes are played.
- Beat** - The pulse or heartbeat of the music.
- Tempo** - The speed of the music.
- Dynamics** - The volume of the music.
- Octaves** - The jump between the same note going higher or lower on the piano (e.g. lower C to higher C).
- Pitch** - How high or low the notes are played.
- Guitar** - 6-stringed instrument. Can be electric or acoustic.
- Bass Guitar** - Low sounding 4-stringed instrument. Usually electric.
- Piano/Keyboard** - Percussion instrument made up of white keys and black keys.
- Drum Kit** - Percussion instrument made up of drums and cymbals.

Feedback Starters

Positives: *What I thought went well was...*
 Points for improvement: *It would be even better if...*



Year 9 Unit 5 - More Python

Lesson 1	Write programs that display messages, receive keyboard input, and use simple arithmetic expressions in assignment statements. <pre> 1 print("Enter length of the rectangle: ") 2 length = float(input()) 3 print("Enter width of the rectangle: ") 4 width = float(input()) 5 area = length * width 6 perimeter = 2 * length + 2 * width 7 print("The area of the rectangle =", area) 8 print("The perimeter of the rectangle =", perimeter) Use selection (if-elif-else statements) to control the flow of program execution 1 print("Enter length of the rectangle: ") 2 length = float(input()) 3 print("Enter width of the rectangle: ") 4 width = float(input()) 5 area = length * width 6 perimeter = 2 * length + 2 * width 7 print("The area of the rectangle =", area) 8 print("The perimeter of the rectangle =", perimeter) 9 ~ if area > 20: 10 print("The area is too big.") 11 ~ else: 12 print("The area is not too big.") </pre>	Keywords Algorithm/Set of computer instructions An algorithm is a list of instructions/set of computer instructions, used to solve problems or perform/(do/complete) tasks. Program A program is a set of operations for a computer to perform. Programming language A programming language is a language that can be used to control a computer. Program translation A translator is a program that converts source code (python) into code that the computer can use. Program execution To execute/run a program is to run the program in the computer. Interpreter A computer program that directly executes/ runs instructions written in a programming language Programming environment/(surrounding conditions)
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	Create lists and access individual list items <pre>1 fruit = ["apple", "banana", "pear", "pineapple"] 2 print("The first fruit in the list =", fruit[0]) 3 print("The second fruit in the list =", fruit[1])</pre>	A program that contains language specific/clearly stated/particular editors and source level debugging/ (finding and correcting mistakes in) facilities. (Replit.org) Input Data that is entered into or received by a computer Output The information that it displays on a screen or prints on paper as a result of a particular program. Variables/(numbers that change) change/things that change) A variable is a value that is stored by a computer. Assignment A statement in computer programming that is used to set a value to a variable./(number or thing that changes). Operators An operator is a specific mathematical or logical action or process. Expressions A combination of values and functions that are combined to create a new value Integer and string type Integer is a numeric/number-based value, while string is a character value represented in quotes.
Lesson 2	Perform common operations on lists or individual items <pre>1 fruit = ["apple", "banana", "pear", "pineapple"] 2 print("The first fruit in the list =", fruit[0]) 3 print("The second fruit in the list =", fruit[1]) 4 fruit.append("cherry") 5 fruit.insert(1, "grape") 6 fruit.pop(3) 7 fruit.remove("apple") 8 fruit.sort() 9 print(fruit)</pre>	

Lesson 3	Use iteration (while statements) to control the flow of program execution <pre>1 fruit = ["apple", "banana", "pear", "pineapple"] 2 exit = False 3 while exit == False: 4 print("Enter the next fruit or x to exit: ") 5 nextFruit = input() 6 if nextFruit == "x": 7 print("Goodbye!") 8 else: 9 fruit.append(nextFruit) 10 print(fruit)</pre> Perform common operations on strings or individual characters <pre>1 print("Enter the first piece of text: ") 2 text1 = input() 3 print("Enter the second piece of text: ") 4 text2 = input() 5 print("The first letter in text1 = ",text1[0]) 6 print("The second letter in text2 = ",text2[1]) 7 print("Text1 is ",len(text1), "letters in length.") 8 print("Text2 is ",len(text2), "letters in length.") 9 text2 = text2 + " " + text1 10 print(text2)</pre>	Execution To execute/run a program is to run the program in the computer Selection Where a section of code is run only if a condition is met Relational operators Relational operators compare numericnumber-based, character string, or logical data. The result of the comparison, either true (1) or false (0). Examples include =, > < and <>. Logical (or Boolean) expressions An operation involving the use of logical functions, such as AND or OR. Conditions Conditions are statements which evaluate/(figure out the worth, amount, or quality of) if something is true or false. Multi-branch selection Where the flow of a program can go in many different directions depending on a particular value. Iteration/Cycle A sequence of instructions or code being repeated until a specific end result is achieved.
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		Flags A flag is a variable/(number or thing that changes) that acts as a signal within a program.
Lesson 4	Use iteration (for statements) to iterate over list items <pre>1 print("Enter the first piece of text: ") 2 text1 = input() 3 ~ for i in range(0,len(text1)-1): 4 print(text1[i]) 1 print("Enter the times table you wish to see: ") 2 timesTable = int(input()) 3 ~ for i in range(1,13): 4 print(i,"*",timesTable,"=",timesTable*i)</pre>	

Year 9 PCSHE Topic 1 – Peer Influence and Gangs

Key Words: Gangs: a group of people that are committing illegal acts together. Coercion: the act of persuading someone to do something by using force or threats. Identity: being who or what a person is. Peer Influence: when you choose to do something that you wouldn't usually do because you want to feel accepted and valued by your friends. Drug dealing: an individual or group who sells illegal drugs. Criminal responsibility: the age at which a child may be arrested, prosecuted, tried in a court of law. Manipulation: to influence or control someone to your advantage. Support Network: the people in your life that you can trust and can help you to achieve your goals. Exit Strategies: a way to escape Bullying: Doing something that harms another person (physically, emotionally etc.). Career prospects: The chance of future success in a job. Stop and Search: a law that gives a police officer the power to stop and search an individual if they have 'reasonable grounds' to suspect someone could be carrying: illegal drugs, a weapon, stolen property, something that could be used to commit a crime. Joint Enterprise: a if a persons' presence, actions or knowledge lead to a murder or assault then they can be charged even if they didn't directly do anything.	KPI 1: What is a gang? - A gang is usually considered to be a group of people who spend time in public places that: - See themselves (and are seen by others) as a noticeable group - Engage in criminal activity and violence - The specific crimes and behaviours relevant to each individual gang will vary, however it is important to be aware of common trends in gang. Common features of gang membership: - Being engaged in criminal activity and violence, usually starting with petty crime and developing to selling drugs, stealing phones or stabbings. - Laying claims over specific territory, often a postcode or estate - Wearing an identifying feature, often an item of clothing worn in a particular way e.g., turned up trouser leg, bandana, a specific colour - Usually in constant conflict with other gangs and unable to enter another gang's territory - Gang activity is rapidly moving online; encrypted messaging services are used to organise criminal activity and communicate - Gang membership is decreasing in age, with children as young as 11 recruited into gang life - Young gang members (usually aged between 12-17) are often used to transport drugs through a network to sell in less well-policed areas, this is known as maintaining or crossing 'county lines.	KPI 2: Signs of someone being in a gang: - Wearing gang symbols/clothes or tattoos - Risk taking behaviours - Mixing with well known gang members - Members have a lot of money/expensive clothing without a clear source of income. - Using nicknames KPI 3: Reasons why people join gangs - Sense of belonging and/or identity - Protection - Enjoying risk taking - To get respect - Looking for a glamorous lifestyle - Expectation to join from friends KPI 4: Laws around knife crime: - Possession of a knife has a 5-year prison sentence, even if it is not used. - You can be arrested, charged and sent to prison if someone you are with stabs another person. - The police can stop and search someone if they have 'reasonable grounds' to suspect they are carrying illegal drugs, a weapon, stolen property, something which could be used to commit a crime. - It is illegal to sell knives to anyone under 18. - You can be charged with a crime if you are over the age of 10.	KPI5: Consequences of being in a gang: - Being subject to threats, blackmail and violence - Being exploited and forced to commit crimes - Being arrested, including for crimes committed by the gang that they have not directly committed under the law of joint enterprise. - Not being able to leave or cut off ties with the gang - Having their safety or the safety of friends and family threatened. - Risk of physical harm, rape and sexual abuse. - Risk of emotional abuse. - Risk of severe injury or being killed. - Abusing drugs, alcohol and other substances. - Long-term impact on education and employment options. If you need further support... Home/School Support: Friends, family members, teacher, tutor, Mr Ogden, Mrs Jones, Mrs Loveridge, Mrs Aston, Mr Hayward. Reputable Organisations: - A Better Medway: www.abettermedway.co.uk - Medway Youth Service (Local advice and support): 01634 33228, youth.enquiries@medway.gov.uk - Childline (Free confidential and emotional support for young people): 0800 1111 www.childline.org.uk - Crimestoppers (Anonymous crime reporting service, independent of the police): 0800 555111 https://crimestoppers-uk.org/ - Fearless Site (providing non-judgmental information and advice about crime and criminality): https://www.fearless.org/en/give-info - Victim Support (A charity working to support people who have been the victim of crime) 0808 16 89 111, www.victimsupport.org.uk - Runaway helpline (A confidential support service for young people in conflict at home): Call or Text 116 000 www.runawayhelpline.org.uk/advice/gangs - Young Minds (A charity offering support for the emotional health and wellbeing of young people) www.youngminds.org.uk
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Year 9 PCSHE Topic 2 – The Justice System

Key Terms	KPI1: Introduction to Laws	KPI2: Types of Court:	Youth Justice System:
Law: a system of rules which a country uses to regulate the behaviour of its citizens. Civil Law: When there is a dispute between two people and is usually a personal matter, rather than a crime. E.g. divorce Criminal Law: When someone breaks a law. E.g. stealing Barrister: A type of lawyer that defends the person charged with a crime in court. Jury: is made up of 12 adults, who sit in a crown court and decide whether the accused person is innocent or guilty. Judges: a person who is in charge of a trial in a court and decide how a guilty person should be punished. Magistrate's Court: All trials starts in a Magistrate's court. A Magistrate can give out sentences but don't have the same power as a Judge so they only rule over minor offenses. More serious crimes get referred to a Crown court, in front of a Judge. The Crown Prosecution Service: They advise the police on whether they have enough evidence to prosecute someone. They prepare cases for the court and can decide what charge they think the accused should receive. Probation Officer: they supervise offenders in the community when they've been released from prison. Bail: an amount of money that a person who has been accused of a crime pays so that they can be released until their trial. Custody: being kept in prison, while waiting to go to court for trial. Caution: a spoken warning given by the police to someone who has broken the law Reoffend: To offend again Joint Enterprise: a if a persons' presence, actions or knowledge lead to a murder or assault then they can be charged even if they didn't directly do anything.	Our law comes from legislation (laws passed by parliament) Common law and EU law. England and Wales have the same legal system; Northern Ireland has a very similar system. Scotland has its own system of laws Types of Law: Criminal law: A specific crime has been committed. Case between an offender and the government (acting for all citizens) These cases will go through the criminal justice system and could lead to a custodial sentence. Range in severity, not all 'serious' An Act of Parliament has been broken. Civil law: Disputes between individuals or group. Often linked to rights e.g. company law, adoption, consumer rights. A claimant can bring a case to civil court, normally to claim damages (to sue for money) Can still be 'serious' and involve very emotive issues. Legal responsibilities: - Many people in the UK take a role in the running of the legal system. You still have rights, even if you are an offender Citizens can be on a jury (compulsory) train to be a magistrate (to hear cases in courts in their community), become a special constable (trained volunteers who support police) or advise in a tribunal (as an expert) These roles offer great support to justice within the community. If you are arrested you must be told the reason for the arrest, can tell someone, able to get legal aid, offered medical help if needed, provided with a written notice about your rights and offered an interpreter. Human Rights must also be followed in prison (within reason e.g. liberty, democracy.	Criminal Courts - Magistrates court: 95% of cases, less serious crimes e.g. theft. Led by trained magistrates, no jury can only give minimal penalties. - Crown court: Serious cases e.g. murder. Led by judge, formal, jury decides on guilt. Courts must consider mitigating factors. The Crown prosecution Service (CPS) advises the police on cases for possible prosecution. It reviews cases submitted by the police for prosecution and decides the charge in very serious or complex cases. Civil Courts: - A dispute between two individuals or groups that requires legal advice Disputes can be solved in civil courts, but also via tribunals (less formal courts) Ombudsmen (expert decision makers) Mediation (talking it through) these are often cheaper and quicker. - Tribunals produce rulings that are legally binding; an expert judge takes the lead. Ombudsmen are independent and free of charge but can be slow. Mediation can lead to a legally binding agreement.	- The part of the justice system that deals with young people (10- 17) The youth justice system aims to prevent youth crime. - The UK recognise that YP who break the law should be treated differently. - Sentences will often focus on rehabilitation. - YP must have an appropriate adult with them before they are questioned. - Youth Offending Teams will work with YP to support and educate. - Youth courts (less formal) are used but very serious crimes can be passed to a crown court. Office for national statistics: - The organisation that collects data about what is happening in the UK (including crime). - Most YP who commit crime have low literacy or difficult backgrounds. Rates of reoffending are high (especially with YP) Violent crime has fallen over the last 20 years - There is a growing view that prisons need to focus more on rehabilitating prisoners. - Questions what government are doing to address the root causes of crime (literacy, poor home life) - Crime statistics can be misleading as certain crimes (e.g. rape) may be underreported