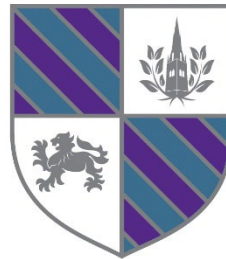


Student Name:



MAGNUS
CHURCH OF ENGLAND
ACADEMY

Knowledge Organiser: January 2025

Year 11

“Wise men and women are always learning, always listening for fresh insights.”
Proverbs 18:15 (The Message)

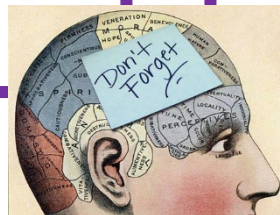
Determination – Integrity – Ambition – Humility – Compassion

Using Your Knowledge Organiser

Your teachers have worked hard to produce this document for you and have selected the most important knowledge that you will need to know to make good progress in their subjects. **You should aim to learn all the information in your knowledge organiser off by heart.**

Try out some of the strategies listed here to help you achieve this.

1. Read the knowledge organiser and ensure you understand it.
Try and make links between the information on it and what you already know and do.
2. Look, Cover, Write, Check – the traditional way of learning spellings!
3. Create a Mnemonic – Using the first letters of keywords create a memorable sentence or phrase.
4. Create an acronym – using the first letters of keywords to create a word to prompt you to remember all of the information.
5. Write it out in full on a blank version of the same format.
6. Write it out in note form, reducing it to key ideas or words. Try the same format but a smaller piece of paper.
7. Recreate the knowledge organiser as a series of images and words
8. Write a set of test questions for yourself using the organiser.
 - Answer these without the organiser the next day.
 - Swap your questions with a friend to increase challenge.
 - Turn your questions in to a game by putting them on cards and playing with friends.
9. Chunk the knowledge into smaller bitesize sections of around 5 pieces of information. Concentrate on mastering a chunk before you start on the next.
10. Try to make connections between the information and people you know. E.g. Visualise yourself trying these strategies with a specific teaching group.
11. Talk about the information on the knowledge organiser with another person. Teaching someone else about it helps us learn it.
12. Say the information out loud – rehearse it like learning lines for a play, or sing it as if you are in a musical!



Year 11 Half term three key vocabulary

<u>English Language</u> Obsessive Determined Traditional Proud Overwhelmed Passionate Nuisance Smug Superior Delighted Gloats/gloating	<u>English Literature</u> Hamartia Hubris Blank verse Iambic pentameter Unchecked ambition Equivocation Patriarchal Monologue Prophecy Tragic hero Regicide	<u>Maths (F)</u> Area Perimeter Volume Surface area Vertex Parallel Perpendicular Hypotenuse	<u>Maths (H)</u> Regular shape Interior Angle Exterior Angle Isosceles Triangle Tangent Cyclic quadrilateral Perpendicular Bisector Chord	<u>Science - Biology</u> Population Community Ecosystem Hormone Testosterone Oestrogen Homeostasis Synapse Allele Clone	<u>Science-Chemistry</u> Finite resource Renewable resource Sustainable development Dynamic equilibrium Le Chatelier's Principle Reversible reaction Concentration Atmosphere Greenhouse effect Greenhouse gases Photosynthesis
<u>Science – Physics</u> Solenoid Electromagnet Magnetic field Current Force Scalar Vector Velocity Resultant force Centre of mass	<u>History</u> Negotiators Exterminators Manifest Destiny Polygamy Humanitarians Ratification Federalism Total War Homestead Reservations	<u>Geography</u> Abiotic Biome Producer Consumer Ecosystem Biodiversity Interdependence Deforestation Subsistence	<u>French</u> Noun Adjective Verb Connective Opinion verb Infinitive Frequency expression Conjugate Adjectival agreement Wow phrase Exclamation	<u>GCSE RS</u> Worship Liturgical worship Non-liturgical worship Informal worship Private worship Nonconformist Sacraments Holy Communion Agape Mission	<u>Sociology</u> Absolute poverty Achieved status Ascribed status Bourgeoisie Culture of dependency Glass Ceiling Life chances Power Pressure group Relative poverty
<u>Drama</u> Suspense Mood Atmosphere Climax \ Anti-climax Pla within a play Tension Suspension of Disbelief Director Producer Stage manager Choreographer	<u>Child Development</u> Delayed gross motor skills Delayed fine motor skills Poor concentration levels Down's syndrome Embryo Delayed literacy skills English as an additional language Transitions Initiate play Sustain involvement Isolate	<u>Dance</u> Command words Subject Specific Vocabulary Stimulus Motif Development Choreographic device Choreographic intent Action Space Dynamics	<u>Art</u> Response Develop Experiment Annotate Review Refine Primary source Composition Analyse Resource	<u>PE</u> Participation Barriers User Groups Stereotyping Team Spirit Fair Play National Pride Tolerance and Respect NGB Sports Councils	<u>Technology</u> A static load A dynamic load Tension Tensile Compression Compression strength Torsion Torsional strength Bending Shear
<u>Construction</u> Structure Sustainability Harvesting Roofing Insulation Boarding Panels Party walls Interior Exterior	<u>iMedia</u> Visual Identity Visualisation Diagram Mind Map Moodboard Central Subject Node Topic Node Sub Node Connector/Branch/Line Conventions Concept sketches	<u>Hospitality and Catering</u> Carbon footprint Greenhouse gases Reduction Roux sauce Substitutions Blanch Organoleptic Dovetailing Mis en plas Gelation	<u>Music</u> Pizzicato Divisi Double stopping Arco Tremolo Tongued Slurred Muted Drum roll Glissando	<u>Business</u> Medium Promotional mix Push Strategies Budget Assets Capital Start-up costs Running costs Cost of sales Retained profit Net current assets Liquidity Trade Credit	<u>Core RS</u> Afterlife Eternity Funeral Heaven Hell Judgement Medium Nibbana Near death experience Paranormal activity Rebirth Reincarnation

Year 11 English Language– Component 2

Box 1 Vocabulary:

Term	Definition
Obsessive	Thinking about someone, or something too much or all the time.
Determined	Wanting to do something very much and not letting anything stop you.
Traditional	Following or belonging to the customs or ways of behaving that have continued in a group or society for a long period of time.
Proud	Feeling pleasure and satisfaction because you, or people connected with you, have done something good.
Overwhelmed	A feeling of sudden strong emotion.
Passionate	Having or showing very strong feelings or emotions.
Nuisance	Something or someone that is very annoying and causes trouble for others.
Smug	Too pleased or satisfied about something achieved or what someone knows.
Superior	Better than average or than someone or thing of the same type.
Delighted	Very pleased.
Gloats/ gloating	Verb: to think about something triumphantly or with malicious satisfaction or delight.

Box 2: Article– POV

- ♦ An article could appear in the following formats: **a magazine, certain sections of a newspaper, websites.**
- ♦ Typical subjects covered in articles: **travel/ sport/ history/ hobbies/ home/craft music/ celebrities/famous figures/ controversial topics.**
- ♦ An article should include a **catchy, memorable headline**: questions, alliteration, statement, word play, ambiguity.
- ♦ The structure of an article is as follows: **Headline, introduction or views made clear, x3 main points explored, conclusion.**
- ♦ At paragraph level, the structure should be as follows: **Discourse marker, topic sentence, exploration of this idea: examples, anecdote, evidence to support topic sentence, professional views, statistics...**

Box 3 Tier Three Vocabulary:

Term	Definition
Experiences	An even/ activity which leaves an impression on someone.
Thoughts	Ideas reflecting conscious or unconscious reflections; to consider something.
Feelings	An emotional state; a reaction; an idea or belief; an attitude or opinion.
Impressions	A thought or idea about something or someone without conscious thought/ using little evidence.
View	Regard in a particular light or with a particular attitude.
Tone	The writer's use of words and writing style to convey his or her attitude towards a topic.
Change	An act or process that makes something different; alter; modify; transform.
Enjoyable	An activity or occasion giving delight or pleasure; great.

Year 11 — Conflict Poetry and ‘Macbeth’, Shakespeare

1. Macbeth Key Quotations

<i>‘For brave Macbeth-- well he deserves that name --’</i>	Macbeth is portrayed as a strong and loyal soldier, respected by others and the King. This is important as it inflates the tragedy of his downfall and emphasises how his ambition poisons him and turns him evil.
<i>‘Stars, hide your fires; / Let not light see my black and deep desires, / The eye wink at the hand. ‘</i>	This clearly identifies the contrast between light and darkness (good and evil) and how Macbeth is conflicted by his deep evil ambitions and the consequences of his actions both personally and religiously (stars being heaven).
<i>‘Come you spirits, that tend on mortal thoughts. Unsex me here, and fill me, from the crown to the toe, top-full of direst cruelty’</i>	Lady Macbeth shows her own ambition to be less feminine and take on the role of her husband, asking spirits to fill her with evil and the ability to kill the King to achieve power. It shows her willingness to welcome evil into her life, and emphasises the link between the supernatural and evil in the play.
<i>“Will all great Neptune’s ocean wash this blood clean from my hand”</i>	After killing Duncan, Macbeth is overcome with guilt, represented through the motif/symbol of blood in the play. Here he says that even all the seas could not wash it from his hand, he will forever feel it.
<i>‘To be thus is nothing but to be safely thus’</i>	After becoming King, Macbeth is still not content that his ambition is fulfilled. His paranoia has set in and he worries about Banquo and his son.
<i>“I am in blood, steeped in so far, that, should I wade no more, returning were as tedious as go o’er”</i>	After killing Banquo and being haunted by his Ghost, Macbeth decides that his evil actions have taken him this far and to turn back would make his previous decisions pointless. To let go of his power would have it all have been for nothing.
<i>“Will these hands ne’er be clean?”</i>	Lady Macbeth is also overcome with guilt by Act 5, even after previously showing little regard for Duncan’s death in Act 1 and 2. She sleepwalks, trying to clean her hands of the blood (guilt) that eventually leads to her death.
<i>‘dead butcher, and his fiend-like queen’</i>	Malcolm’s final words on Macbeth and Lady Macbeth as he takes back the crown of Scotland in the final scene of the play, emphasising the effect their ambition ultimately had on them.

2. Macbeth — Key Terminology:

Hamartia	A fatal flaw leading to the downfall of a tragic hero or heroine.	Tragic hero	A character who makes a judgment error that inevitably leads to his/her own destruction.
Hubris	Excessive pride or self-confidence.	Regicide	The action of killing a king.
Blank verse	Dialogue without rhyme or rhythm. Shakespeare has characters of low birth speaking in blank verse.	Foil	A character who contrasts with another character, to highlight qualities of the other character.
Iambic Pentameter	Five feet, each consisting of one unstressed syllable followed by a stressed syllable. Shakespeare has characters of noble birth speaking in iambic pentameter.	Catharsis	The process of releasing, and thereby providing relief from, strong or repressed emotions.
Unchecked ambition	When ambition goes unchecked by moral constraints .	Subvert	To undermine the power and authority of an established system or institution.
Equivocation	Ambiguous language to conceal the truth or to avoid committing oneself; prevarication.	Paradox	A statement that logically can’t be true—it is self-contradictory.
Patriarchal	A society controlled by men.	Omniscient	All-knowing.
Monologue	A long speech by one character.	Usurp	Take illegally or by force.
Prophecy	A prediction of what will happen in the future.	Soliloquy	A character speaking their thoughts/feelings aloud.

3. Macbeth — Context:

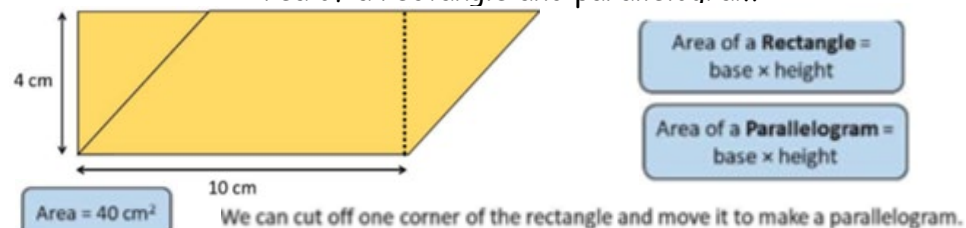
King James I	Catholic King of England. Survived the recent attempt on his life (Guy Fawkes—the gunpowder plot). He wrote a book on the supernatural — ‘Demonology’.
King Duncan	A real king who was murdered by a man named Macbeth in the 11th century.
Banquo	Is believed to be a relative of King James I - therefore he could be king as he is of noble birth. Banquo is the only truly good character; he never turns his back on his friends, family or his king.
Shakespeare	Added supernatural elements to the play after the first version was published to impress King James, who was a very superstitious man. He knew that the play would never been seen without King James’ support.

Subject terminology - Geometry

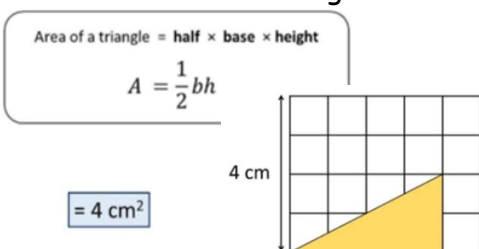
Area	The amount of space taken up by a 2D shape
Perimeter	The distance around the edge of a 2D shape
Volume	The amount of 3D space an object takes up
Surface area	The total area of all faces of a 3D shape
Vertex	A point where two or more line segments meet (also called a corner)
Parallel	Two or more lines that stay equidistant from each other, never meeting or crossing
Perpendicular	Two lines that meet at a right angle
Hypotenuse	The longest side of a triangle located opposite the right angle

Basic Area

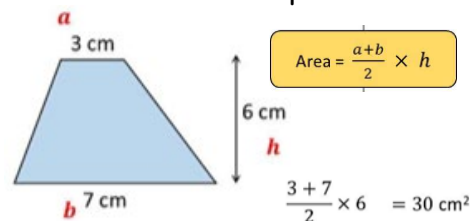
Area of a rectangle and parallelogram



Area of a triangle



Area of a trapezium



Circle Nomenclature

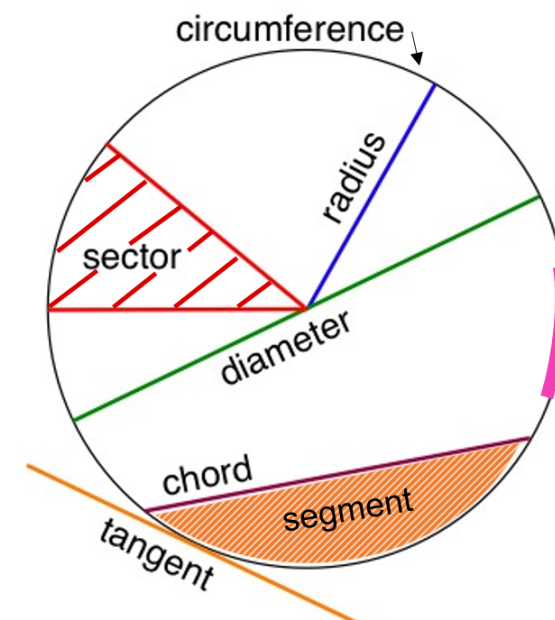
	Radius (r)
	Diameter (d)
	Circumference (C)
	chord
	tangent
	segment
	sector
	arc

Formulae for circles

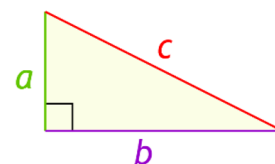
Area: $A = \pi r^2$

Circumference: $C = 2\pi r$

Or... $C = \pi d$



How to: apply Pythagoras' Theorem



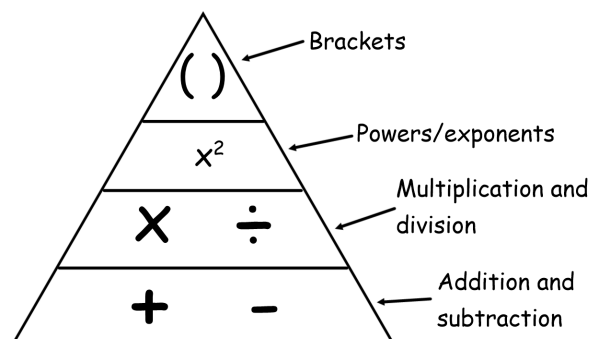
$$a^2 + b^2 = c^2$$

Finding the hypotenuse

- 1) Square the two shorter sides and add them up
- 2) Square root your answer

Finding a shorter side

- 1) Subtract the square of the short side from the square of the hypotenuse
- 2) Square root your answer

Order of Operations**Inverse Operations**

$$+ \longleftrightarrow -$$

$$\times \longleftrightarrow \div$$

$$\square^2 \longleftrightarrow \sqrt{\square}$$

$$\square^3 \longleftrightarrow \sqrt[3]{\square}$$

Multiplying Integers

If the signs are the same, the result is positive.

$$+ \times + = + \quad - \times - = +$$

$$+ \times - = - \quad - \times + = -$$

Adding Negative Numbers

+ add +	Add the numbers; end result is a positive E.g. $3 + 5 = 8$
+ add -	Find the difference between the numbers; end result takes the sign of the number with largest magnitude. E.g. $3 + -5 = -2$
- add -	Add the integers; end result is a negative $-3 + -5 = -8$

Square Numbers

$$1 \times 1 \text{ or } 1^2 = 1$$

$$2 \times 2 \text{ or } 2^2 = 4$$

$$3 \times 3 \text{ or } 3^2 = 9$$

$$4 \times 4 \text{ or } 4^2 = 16$$

$$5 \times 5 \text{ or } 5^2 = 25$$

$$6 \times 6 \text{ or } 6^2 = 36$$

$$7 \times 7 \text{ or } 7^2 = 49$$

$$8 \times 8 \text{ or } 8^2 = 64$$

$$9 \times 9 \text{ or } 9^2 = 81$$

$$10 \times 10 \text{ or } 10^2 = 100$$

$$11 \times 11 \text{ or } 11^2 = 121$$

$$12 \times 12 \text{ or } 12^2 = 144$$

Cube Numbers

$$1^3 = 1 \times 1 \times 1 = 1$$

$$2^3 = 2 \times 2 \times 2 = 8$$

$$3^3 = 3 \times 3 \times 3 = 27$$

$$4^3 = 4 \times 4 \times 4 = 64$$

$$5^3 = 5 \times 5 \times 5 = 125$$

Column Addition

$$\begin{array}{r} 1 \\ 29 \\ + 35 \\ \hline 64 \end{array}$$

9+5=14
14 is more than 10!

Column Subtraction

$$\begin{array}{r} 5 \\ 64 \\ - 27 \\ \hline 37 \end{array}$$

(10+4=14)

Written methods**Multiplication (Grid method)**

$$26 \times 5$$

\times	20	6
5	100	30

The 26 is broken into 20 and 6. These numbers are multiplied as shown.

The results are then added, $100 + 30 = 130$.

Division (Bus stop)

$$186 \div 6$$

$$\begin{array}{r} 0 \ 3 \ 1 \\ 6 \overline{) 1 \ 8 \ 6} \end{array}$$

6 doesn't divide into 1, so the 1 carries.

6 divides into 18, 3 times.

6 divides into 6, once.

Rounding (to different degrees of accuracy)

*** 5 and above rounds up ***

$$24.356$$
 To the nearest integer (whole number)
24

$$24.356$$
 To 3 significant figures (starting at first non-zero digit)
24.4

$$24.356$$
 To 2 decimal places (digits after the decimal point)
24.36

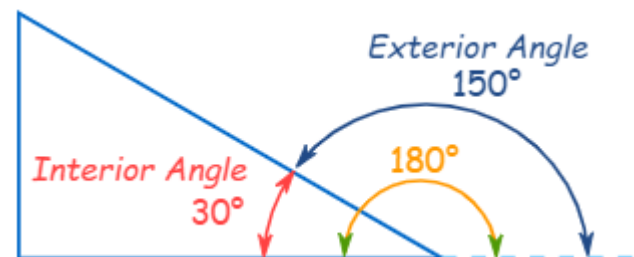
Draw in your line then check the number to the right

Subject terminology - Angles and Circle Geometry

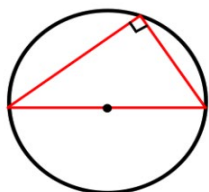
Regular shape	A shape whose sides are of equal length and angles all the same. Eg: an equilateral triangle or square.
Interior Angle	An angle inside a shape, created by two lengths of the shape meeting. Eg: The interior angles of an equilateral triangle are all 60 degrees.
Exterior Angle	The angle created when an interior angle is extended along a straight line. Formula: Interior angle + Exterior angle = 180°
Isosceles Triangle	A triangle where two sides are of equal length and corresponding angles are equal.

Tangent	A line that just touches a curve at a point, matching the curve's slope there. Fact: A tangent to a radius creates a 90° angle
Cyclic quadrilateral	A cyclic quadrilateral is a quadrilateral which has all its four vertices lying on a circle
Perpendicular Bisector	A line which cuts a line segment into two equal parts at 90°
Chord	A straight line that connects two points on a circle's circumference.

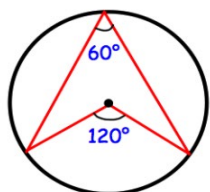
Interior and Exterior Angles



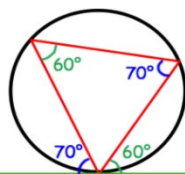
Circle Theorems



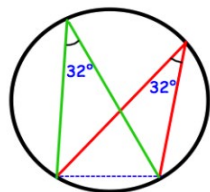
The angle in a semi-circle is 90°



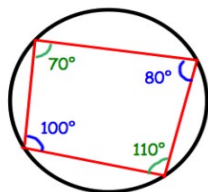
The angle at the circumference is half the angle at the centre



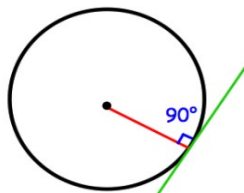
Alternate segment theorem
The angle between the chord and the tangent is equal to opposite angle inside the triangle.



The angles in the same segment from a common chord are equal

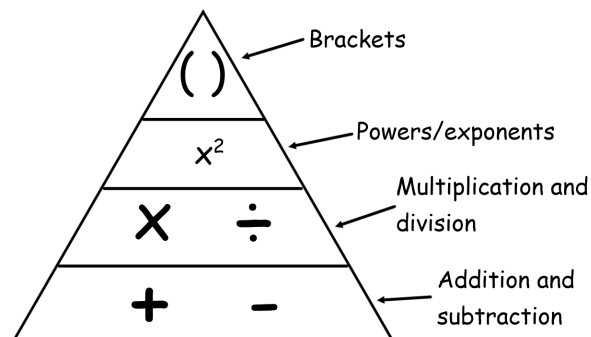


The opposite angles in a cyclic quadrilateral always add to 180°



The angle between a radius and a tangent is 90°

Polygon	Sides	Sum of Interior Angles	Each interior angle of regular polygon	Sum of Exterior Angles
Triangle	3	180°	60°	360°
Quadrilateral	4	360°	90°	360°
Pentagon	5	540°	108°	360°
Hexagon	6	720°	120°	360°
...				
Any Polygon	n	$(n-2) \times 180^\circ$	$\frac{(n-2) \times 180^\circ}{n}$	360°

Order of Operations**Inverse Operations**

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$$\times \longleftrightarrow \div$$

$$\square^2 \longleftrightarrow \sqrt{\square}$$

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24.4

24.356 To 2 decimal places (digits after the decimal point)

24.36

Draw in your line then check the number to the right

Competition in plants and animals

Competition: The process by which organisms compete for limited resources

Animals	Plants
Food	Light
Territory	Space
Mates	Water and minerals
Habitat	

Adaptations to hot and cold climates

Hot climates		Cold climate
Animals	Plants	Animals
Large surface area to volume ratio to let heat out	Small surface area to leaves to prevent transpiration	Small surface area to volume ratio to keep heat in
Camouflage to avoid predation or to aid predation	Store water (succulents)	Camouflage to avoid predation or to aid predation
Thin fur	Large surface area of root to absorb rain water	Thick fur
Active in the morning or at night when temperature is lower	Deep roots to absorb water deep underground	Hibernate or migrate during the winter

Adaptations: Special features that help an organism to survive in their habitat

Subject Terminology	Definition
Population	The number of individuals with a species living in a certain area at a certain time
Community	A group of interdependent living organisms in an ecosystem
Ecosystem	The interactions between the living and non living aspects of a habitat
Abiotic factors	The non-living factors of an ecosystem such as light, temperature and oxygen levels
Biotic factors	The living factors of an ecosystem such as competition, predation and disease

Measuring distribution – Key practical

1. Choose two habitats to be sampled that vary in an abiotic factor (light levels in an open field compared to under a tree).
2. Decide on an appropriate species to be studied (daisies or dandelions)
3. Divide the study habitat 1 into a grid (shown below)
4. Randomly sample habitat 1 using a quadrat (shown below)
5. Repeat multiple times within habitat 1
6. Repeat steps 1-5 in habitat 2
7. Compare your results to decide whether or not the abiotic factor affected the distribution of your chosen species

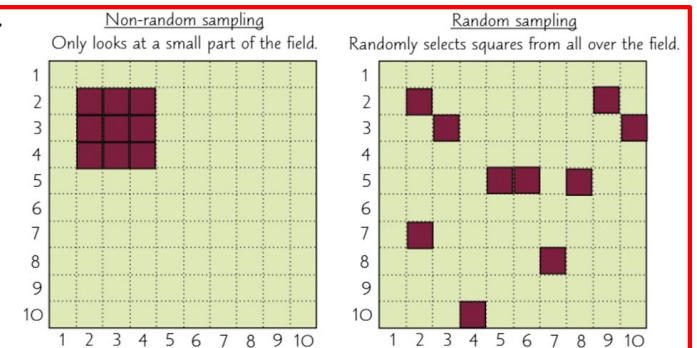
Improving validity

1. Random sampling
2. Same sized quadrat
3. Repeat multiple times

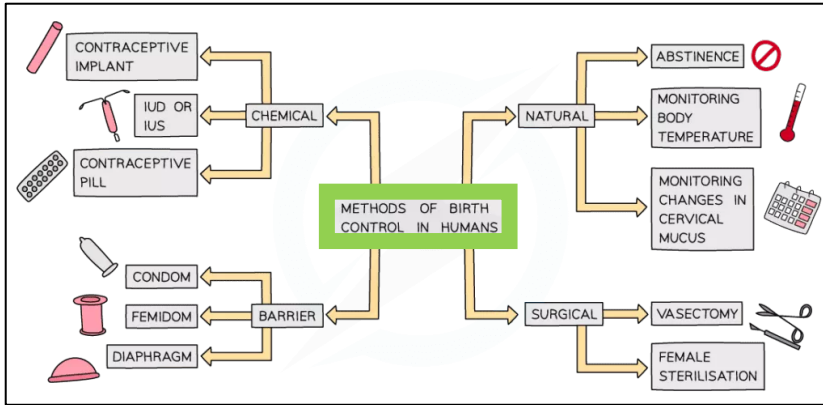
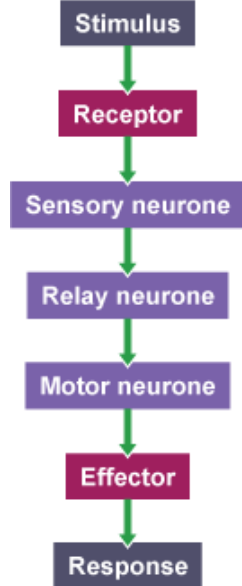


A quadrat (square frame)

- **Divide** the field into a **grid**.
- **Label the grid** along the bottom and up the side with numbers.
- Use a **random number generator** (e.g. on a computer or calculator) to select coordinates, e.g. (2,7).
- Place your quadrats at these coordinates to take your **samples**.



Reflex Action Pathway



Natural Selection Model Answer

1. A mutation causes variation in the species.
2. The organism better adapted/most suited survives.
3. The organism reproduces and passes on its genes to the next generation.

Maintaining biodiversity

Scientists and concerned members of the public help maintain biodiversity by:

- breeding programs to help preserve **endangered species**, like the panda
- protection and development of new endangered **habitats**, often by making National Parks
- replanting hedgerows because there is higher biodiversity in them than the fields they surround
- reducing deforestation and the release of **greenhouse gases**
- recycling** rather than dumping waste in **landfill sites**

How to construct Punnett squares

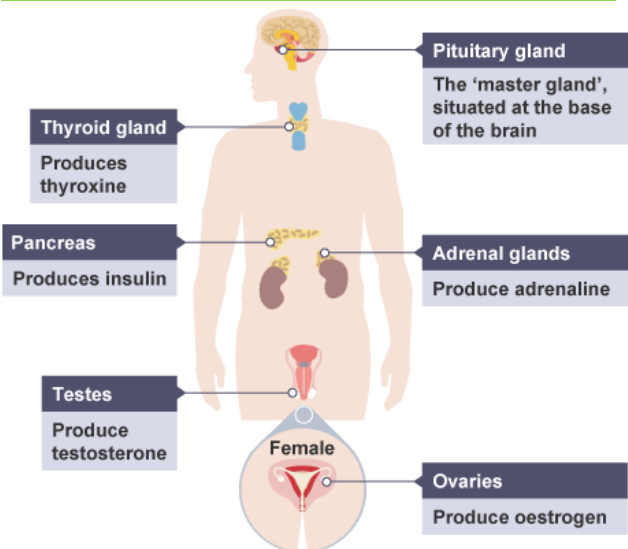
f is the cystic fibrosis allele

		mother	
		F	f
father	F	FF	Ff
	f	Ff	ff

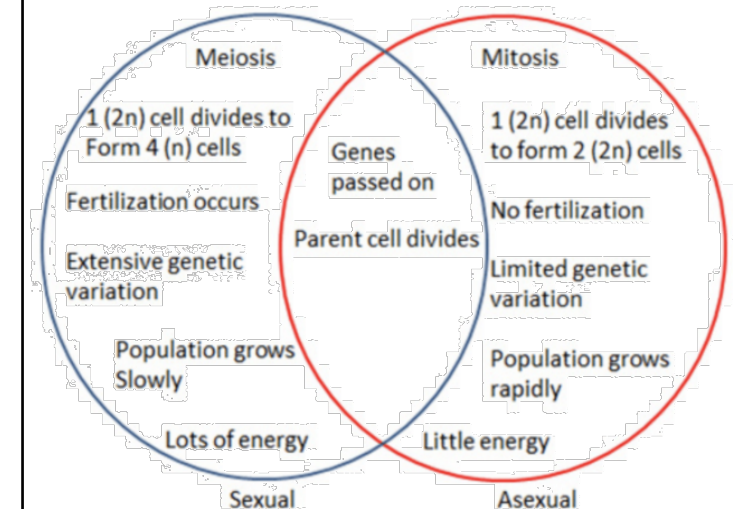
1. Determine the parental genotypes. You can use any letter you like but select one that has a clearly different lower case, for example: Aa, Bb, Dd.
2. Split the alleles for each parent and add them into your Punnett square around the edges.
3. Work out the new possible genetic combinations inside the Punnett square.

Subject Terminology	Definition
Hormone	Chemical messenger produced in glands and carried by the blood to specific organs.
Testosterone	The main male sex hormone that controls the male secondary sexual characteristics at puberty and the production of sperm
Oestrogen	Female sex hormone that controls the development of secondary sexual characteristics in girls at puberty and the build-up and maintenance of the uterus lining during the menstrual cycle
Homeostasis	The maintenance of a constant internal environment
Synapse	The gap between two neurones.
Allele	Different versions of the same gene.
Clone	Offspring that is genetically identical to the parent.
Homozygous	two identical alleles for a characteristic
Heterozygous	different alleles for a characteristic

Endocrine System



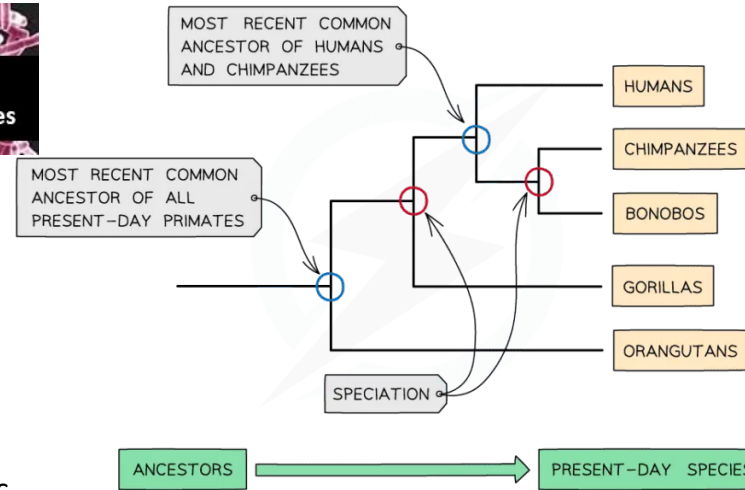
Sexual vs Asexual Reproduction



Reasons for Extinction



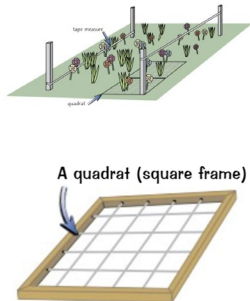
Evolutionary Trees

Measuring distribution – Key practical

1. Choose two habitats to be sampled that vary in an abiotic factor (light levels in an open field compared to under a tree).
2. Decide on an appropriate species to be studied (daisies or dandelions)
3. Divide the study habitat 1 into a grid (shown below)
4. Randomly sample habitat 1 using a quadrat (shown below)
5. Repeat multiple times within habitat 1
6. Repeat steps 1-5 in habitat 2
7. Compare your results to decide whether or not the abiotic factor affected the distribution of your chosen species

Improving validity

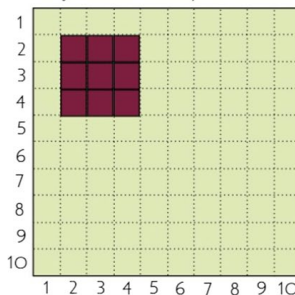
1. Random sampling
2. Same sized quadrat
3. Repeat multiple times



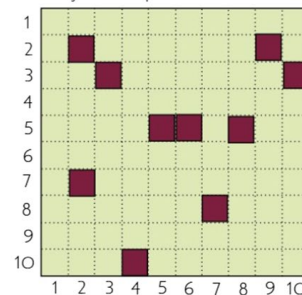
- **Divide** the field into a **grid**.
- **Label the grid** along the bottom and up the side with numbers.
- Use a **random number generator** (e.g. on a computer or calculator) to select coordinates, e.g. (2,7).
- Place your quadrats at these coordinates to take your **samples**.

Non-random sampling

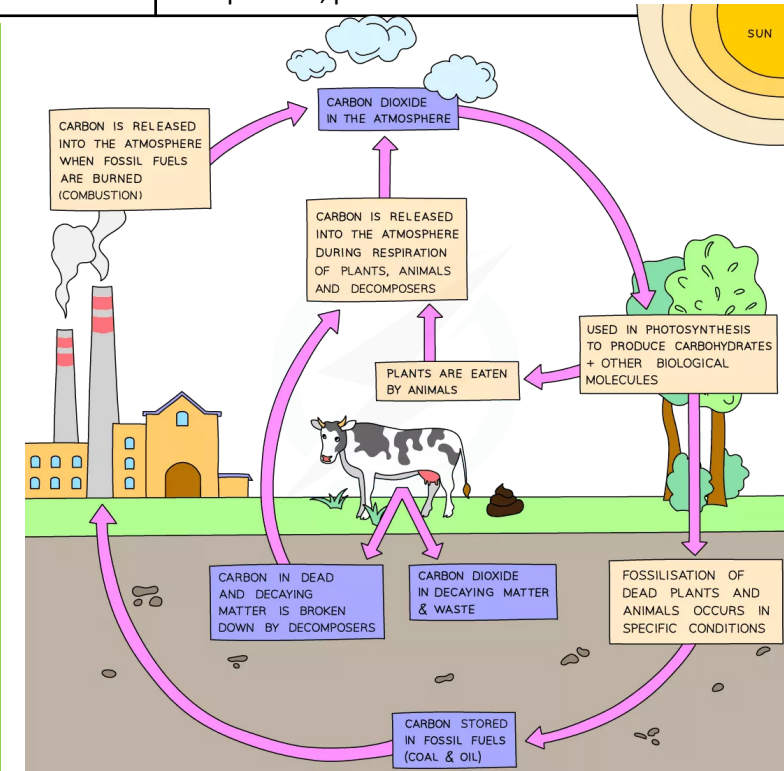
Only looks at a small part of the field.

Random sampling

Randomly selects squares from all over the field.



The carbon cycle



Potable water

MAKING POTABLE WATER

1 Source of fresh water

1st filtration
pass through mesh

2

2nd filtration
pass through sand
and gravel beds

3

treatment with chlorine,
ozone or uv light

4 sterilisation chamber

other treatments
checks on purity

5 Store and supply of potable water

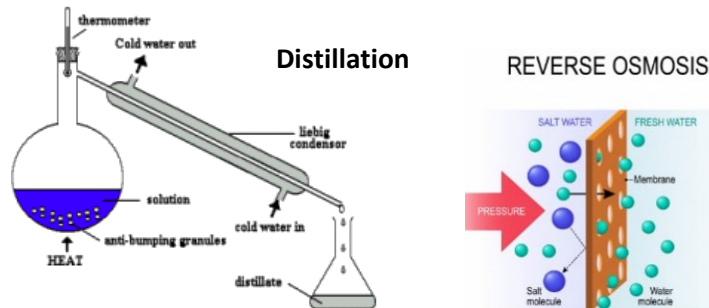
© Doc Brown

Water that is safe for humans to drink is called **potable water**.

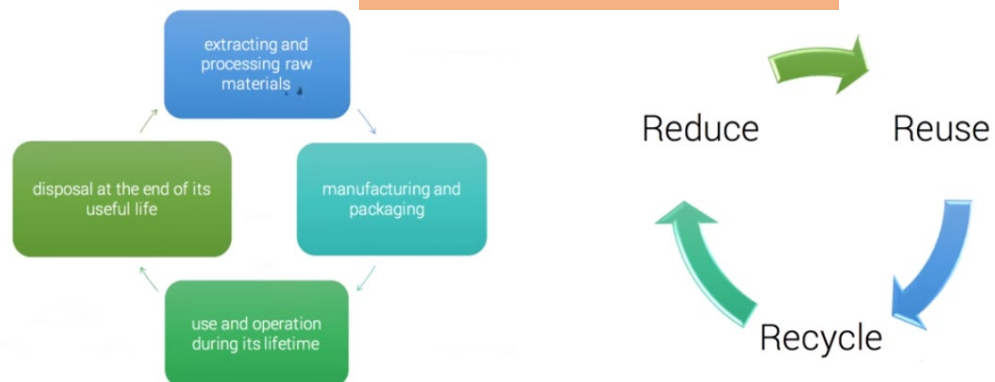
Waste water from homes, industry and agriculture must be treated before being released into the environment.

Potable water can be made from sea water, through a process known as **desalination**.

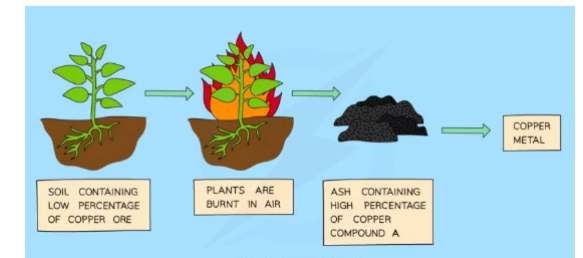
Desalination can be done by **distillation** and by **reverse osmosis**



Life Cycle Assessments



Alternative methods of extracting metals from Ores (higher only)


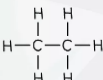
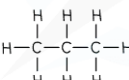
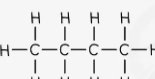


Phytomining: Using plants to absorb metal compounds from the ground through their roots. The plants are then burned to produce an ash containing a high concentration of the metal compounds.

Bioleaching: Using bacteria to extract metals from their ores.

Key Word	Definition
Finite resource	Resource that can only be used once and is in limited supply. For example, oil is a finite resource.
Renewable resource	Resources which will not run out in the foreseeable future. This could be because the reserves of the resources is huge, or because the current rate of extraction is low.
Sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs
Agricultural	Agriculture, or farming, is the cultivation of crops and animals to produce food and other products
Synthetic	A material made by a chemical process, not naturally occurring
Potable water	Water that is safe for humans to drink
Filtration	Used to separate an insoluble solid from a liquid.
Desalination	The removal of salt from seawater
Fertiliser	A nutrient added to the soil to increase the soil fertility

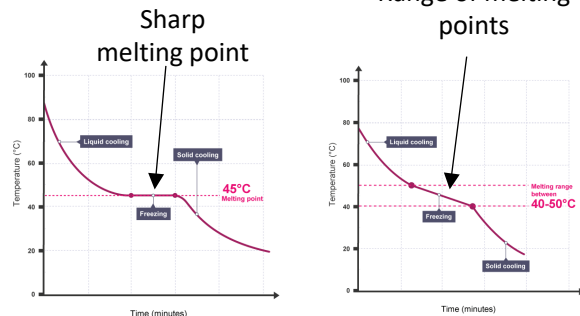
This table shows the first four members of the alkane homologous series

Structural Formula	Name	Molecular Formula
	methane	CH ₄
	ethane	C ₂ H ₆
	propane	C ₃ H ₈
	butane	C ₄ H ₁₀

Pure and impure substances

Pure substances have a sharp **melting point** but mixtures **melt** over a range of temperatures.

Range of melting points



Subject terminology	Definition
Dynamic equilibrium	If a chemical reaction happens in a container where none of the reactants. or products. can escape, this is a closed system.
Le Chatelier's Principle	is the principle when a stress is applied to a chemical system at equilibrium, the equilibrium will shift to relieve the stress.
Reversible reaction	A reaction that occurs in both directions at the same time shown by \rightleftharpoons
Concentration	The concentration of a solution tells us how much of a substance is dissolved in water in g/dm ³ . The higher the concentration, the more particles of the substance are present
Rate of reaction	Refers to the speed at which the products are formed from the reactants in a chemical reaction
Activation energy	The minimum amount of energy that colliding particles must have for them to start to react.
Catalyst	A substance that increases the rate of a chemical reaction without being changed by the reaction itself.
Hydrocarbon	A compound containing hydrogen and carbon atoms only
Alkane	Saturated hydrocarbon with the general formula C _n H _{2n+2}
Alkene	Unsaturated hydrocarbon containing at least one C=C and with the general formula C _n H _{2n}
Fractional distillation	the process of separating crude oil into groups of hydrocarbons with similar numbers of carbon atoms using the physical process of evaporation then condensation.
Combustion	A chemical reaction where carbon and hydrogen atoms are oxidised and energy is released.
Formulations	complex mixtures of chemicals which have a specific use
Mobile phase	Phase in chromatography that moves, usually a solvent or mixture of solvents (most commonly water or alcohol).
Stationary phase	Phase in chromatography that does not move, for instance, the paper in chromatography.

Methods for calculating the mean rate of reaction

$$\text{mean rate of reaction} = \frac{\text{quantity of reactant used}}{\text{time taken}}$$

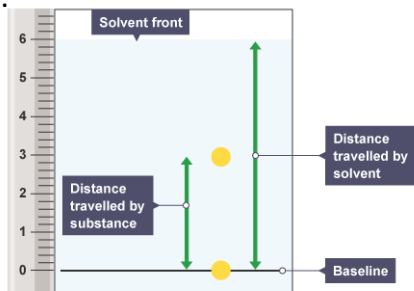
$$\text{mean rate of reaction} = \frac{\text{quantity of product formed}}{\text{time taken}}$$

Chromatography

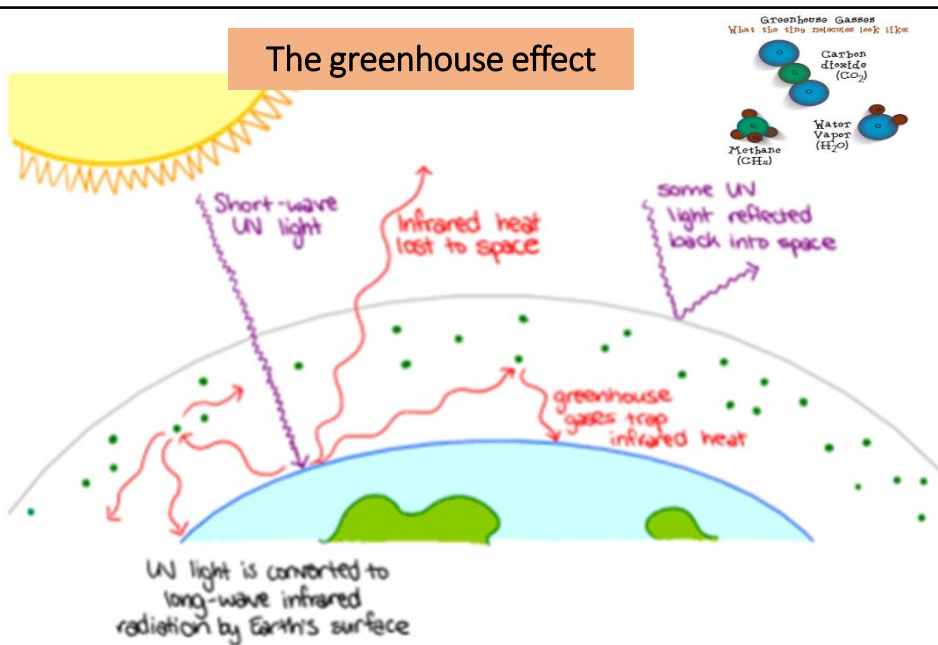
Paper **chromatography** is used to separate mixtures of **soluble** substances.

R_f values can be used to identify unknown chemicals if they can be compared to a range of reference substances. The R_f value is always the same for a particular substance.

$$R_f = \frac{\text{distance travelled by substance}}{\text{distance travelled by solvent}}$$



The greenhouse effect

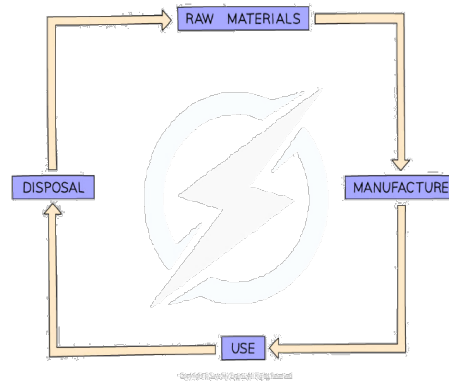


Subject terminology

Definition

Atmosphere	the layers of gases that surround the Earth. The important gases in the atmosphere are nitrogen, oxygen and carbon dioxide
Greenhouse effect	the retention of heat in the atmosphere caused by the build-up of greenhouse gases.
Greenhouses gases	the gases responsible for global warming - carbon dioxide, methane, and water vapour.
Photosynthesis	a chemical process used by plants to make glucose and oxygen from carbon dioxide and water, using light energy
Climate change	the long-term alteration of weather patterns.
Pollutant	a toxic chemical or object that causes damage to the land, air or water.
Carbon footprint	a measure of how much carbon is used through the activities of a person, company or country.
Complete combustion	burning in a plentiful supply of oxygen or air. Complete combustion of a hydrocarbon produces water vapour and carbon dioxide.
Sustainable development	development that meets the needs of the present without compromising the ability of future generations to meet their own needs
Potable water	water that is safe for humans to drink
Desalination	the removal of salt from seawater

Life cycle assessment



MAKING POTABLE WATER

- 1 Source of fresh water
 - 1st filtration pass through mesh
- 2 2nd filtration pass through sand and gravel beds
 - treatment with chlorine, ozone or uv light
- 3 sterilisation chamber
 - other treatments
 - checks on purity
- 4 Store and supply of potable water

Testing for gases

Test for Carbon dioxide, CO₂

Carbon dioxide gas

Limewater (clear/colourless)

Limewater (cloudy/milky)

Test for Chlorine, Cl

Chlorine bleaches damp blue litmus paper

Blue

Red

White

Chlorine gas

Test for Hydrogen, H₂

Hydrogen makes a squeaky pop with a lighted splint

POP!

H₂ gas

Test for Oxygen, O₂

Oxygen relights a glowing splint

Glowing splint

oxygen

Test for Water, H₂O

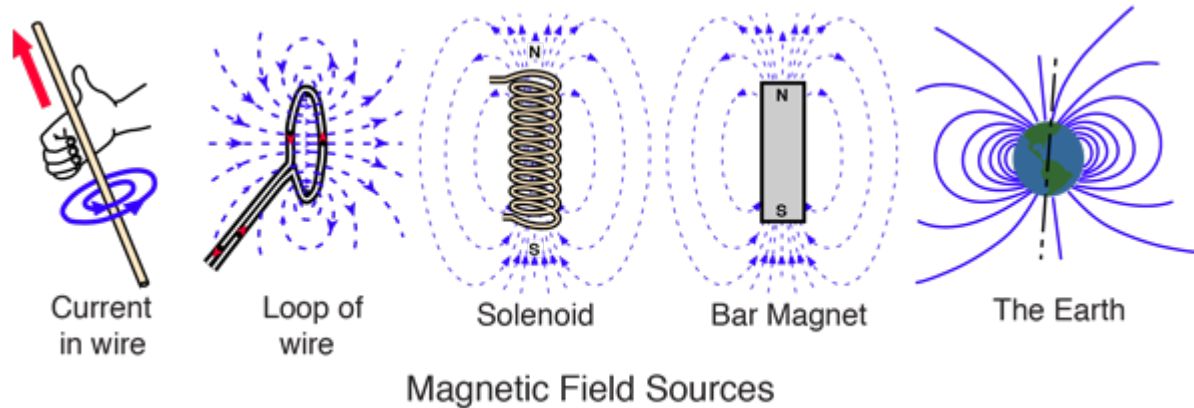
Water turns cobalt chloride paper from blue to pink

blue

pink

Cobalt chloride paper

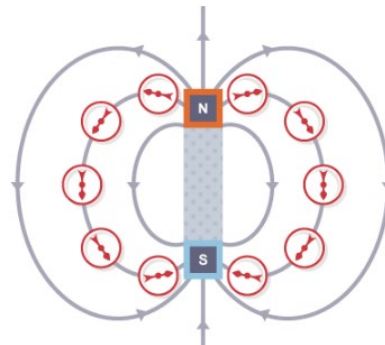
Magnetic fields



Magnetic fields can be mapped out using a small plotting compass

1. place the plotting compass near the magnet on a piece of paper
2. mark the direction the compass needle points
3. move the plotting compass to many different positions in the magnetic field, marking the needle direction each time
4. join the points to show the field lines

The needle of a plotting compass points to the south pole of the magnet.



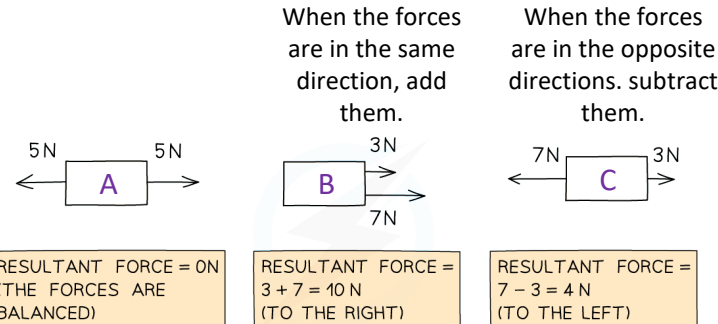
Subject Terminology	Definition
Solenoid	A long piece of conducting (and insulated) wire is looped into a coiled cylinder. The magnetic field is uniform and strong.
Electromagnet	An electromagnet is a solenoid with an iron core
Magnetic field	The region around a magnet where a force acts on another magnet or on a magnetic material
Current	Rate of flow of electrical charge measured in amps
Force	A push or pull that acts upon an object as a result of that objects interactions with its surroundings
Magnetic flux density	Magnetic field strength (force per unit length per unit current)
Density	A mass of a unit volume of a material substance Density = mass ÷ volume

Ways in which you can make the magnetic field around a solenoid/electromagnet stronger:

1. Using a larger current.
2. Using an iron core.
3. Add more turns to the wire.
4. Place the turns of the wire more closely together.

SCALAR	VECTOR
DISTANCE	DISPLACEMENT
SPEED	VELOCITY
TIME	ACCELERATION
ENERGY	FORCE
MASS	WEIGHT
	MOMENTUM

Calculating resultant forces



Subject Terminology

Key Word	Definition
Scalar	Quantities that have magnitude only e.g. speed, temperature, mass
Vector	Quantities that have magnitude and direction e.g. velocity, displacement, force
Velocity	Speed in a given direction. A vector. Measured in m/s
Resultant force	A single force which can replace all the forces acting on an object and have the same effect.
Centre of mass	The point in an object where all the mass of an object appears concentrated.
Stopping distance	Thinking distance + stopping distance.
Thinking distance	The distance travelled during a person's reaction time.
Braking distance	The distance taken to stop once the brakes are applied.
Directly proportional	Shown on a graph by a straight line through the origin.
Longitudinal wave	The oscillations are parallel to the direction of energy transfer.
Transverse wave	The oscillations are perpendicular to the direction of energy transfer.

Representing Motion on Distance-Time and Velocity-Time Graphs

	Distance-Time	Velocity-Time
Stopped		
Constant Speed	The steeper the line the faster the speed. 	
Constant Acceleration		The steeper the line the greater the acceleration.

Gradient = Speed

Gradient = Acceleration

Area = Distance travelled

Typical Speeds

Walking	1.5 m/s
Running	3 m/s
Cycling	6 m/s
Car	13 – 30 m/s
Train	50 m/s
Plane	250 m/s
Sound	330 m/s
Light breeze – gale force winds	3 m/s – 20 m/s

Using Equations

$$\text{speed} = \frac{\text{distance travelled}}{\text{time taken}}$$

$$\text{acceleration} = \frac{\text{change in velocity}}{\text{time taken}}$$

$$v^2 = u^2 + 2as$$

Remember FIFA

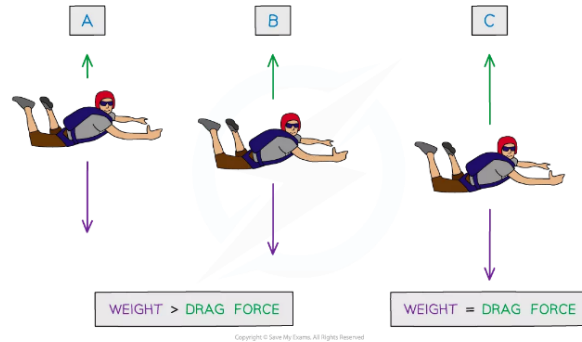
Formula: Write down the equation to use

Insert values: Substitute your numbers into the equation

Fine tune: Rearrange the equation and convert units if you need to

Answer: Calculate the answer and write the unit

A skydiver reaching terminal velocity



THE SKYDIVER IS IN FREEFALL.

THEIR VELOCITY INCREASES DUE TO THE DOWNWARD FORCE OF THEIR WEIGHT.

THE INCREASE IN VELOCITY MEANS AIR RESISTANCE ALSO INCREASES AND ACCELERATION DECREASES.

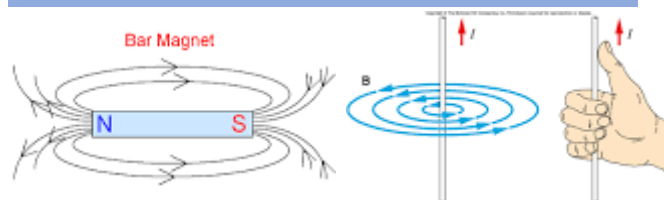
EVENTUALLY THE SKYDIVER REACHES A VELOCITY WHERE THEIR WEIGHT EQUALS THE FORCE OF AIR RESISTANCE.

THEIR ACCELERATION IS 0.
THIS IS THE TERMINAL VELOCITY.

Factors affecting...

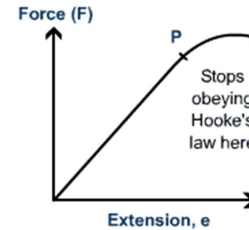
Thinking Distance	Stopping Distance
Speed	Speed
Distraction	Worn brakes
Alcohol	Wet/Icy road
Drugs	Mass of car
Tiredness	Worn tyres

Magnetic Field Diagrams



Force Extension Graph

The graph shows a directly proportional relationship until point P



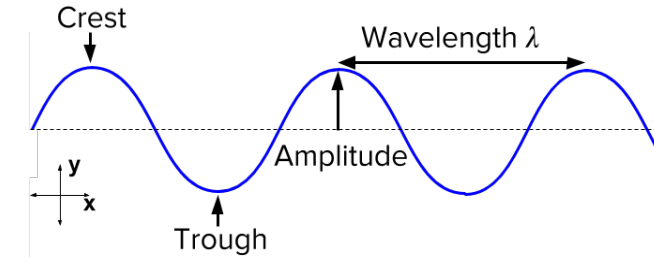
Units to learn

Newton, N	Force, weight
Kilogram, kg	Mass
m/s^2	Acceleration
m/s	Speed or velocity
m	Distance, wavelength
Hertz, Hz	frequency
Joules, J	Energy or work done
Seconds, s	Time, period
N/m	Spring constant

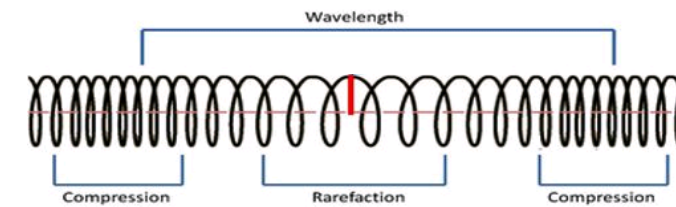
Ways to increase the strength of an electromagnet

1. Using a larger current.
2. Using an iron core.
3. Add more turns to the wire.
4. Place the turns of the wire more closely together.

Transverse wave



Longitudinal Wave



Dangers of EM Waves


Wave	Danger
Radio	◦ No known danger
Microwave	◦ Possible heat damage to internal organs
Infrared	◦ Skin burns
Visible light	◦ Bright light can cause eye damage
Ultraviolet	◦ Eye damage ◦ Sunburn ◦ Skin cancer You must specify <u>skin</u> cancer to get the mark here
X-rays	◦ Kills cells ◦ Mutations ◦ Cancer
Gamma Rays	◦ Kills cells ◦ Mutations ◦ Cancer

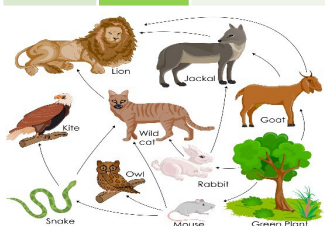
What is an Ecosystem?

An ecosystem is a system in which organisms interact with each other and with their environment.

Ecosystem's Components

Abiotic	These are non-living , such as air, water, heat and rock.
Biotic	These are living , such as plants, insects, and animals.

	Flora	Plant life occurring in a particular region or time.
	Fauna	Animal life of any particular region or time.



Food Web and Chains

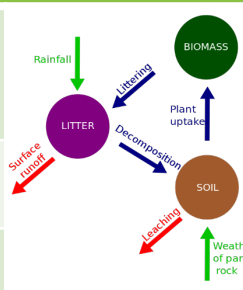
Simple **food chains** are useful in explaining the basic principles behind ecosystems. They show only one species at a particular trophic level. **Food webs** however consists of a network of many food chains interconnected together.

Nutrient cycle

Plants take in **nutrients** to build into new organic matter. Nutrients are taken up when animals eat plants and then returned to the soil when animals die and the body is broken down by **decomposers**.

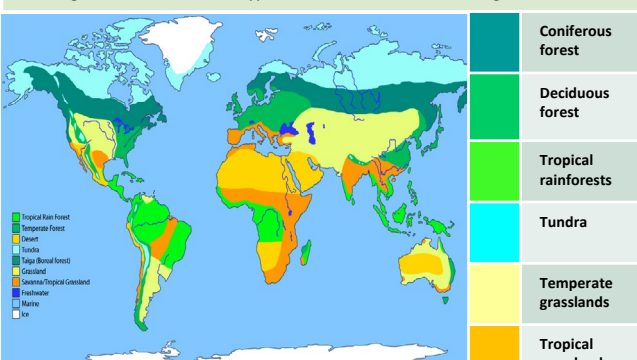
Litter This is the **surface layer** of vegetation, which over time breaks down to become **humus**.

Biomass The total **mass of living organisms** per unit area.



Biomes

A biome is a **large geographical area of distinctive plant and animal groups**, which are adapted to that particular environment. The climate and geography of a region determines what type of biome can exist in that region.



The **most productive biomes** – which have the greatest biomass- grow in climates that are **hot and wet**.

Biome's climate and plants

Biome	Location	Temperature	Rainfall	Flora	Fauna
Tropical rainforest	Centred along the Equator.	Hot all year (25-30°C)	Very high (over 200mm/year)	Tall trees forming a canopy; wide variety of species.	Greatest range of different animal species. Most live in canopy layer
Tropical grasslands	Between latitudes 5°- 30° north & south of Equator.	Warm all year (20-30°C)	Wet + dry season (500-1500mm/year)	Grasslands with widely spaced trees.	Large hoofed herbivores and carnivores dominate.
Hot desert	Found along the tropics of Cancer and Capricorn.	Hot by day (over 30°C) Cold by night	Very low (below 300mm/year)	Lack of plants and few species; adapted to drought.	Many animals are small and nocturnal: except for the camel.
Temperate forest	Between latitudes 40°- 60° north of Equator.	Warm summers + mild winters (5-20°C)	Variable rainfall (500-1500mm/year)	Mainly deciduous trees; a variety of species.	Animals adapt to colder and warmer climates. Some migrate.
Tundra	Far Latitudes of 65° north and south of Equator	Cold winter + cool summers (below 10°C)	Low rainfall (below 500mm/year)	Small plants grow close to the ground and only in summer.	Low number of species. Most animals found along coast.
Coral Reefs	Found within 30° north – south of Equator in tropical waters.	Warm water all year round with temperatures of 18°C	Wet + dry seasons. Rainfall varies greatly due to location.	Small range of plant life which includes algae and sea grasses that shelters reef animals.	Dominated by polyps and a diverse range of fish species.

Unit 1b

The Living World

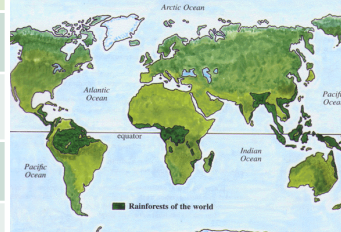


Tropical Rainforest Biome

Tropical rainforest cover about **2 per cent** of the Earth's surface yet they are home to **over half of the world's plant and animals**.

Interdependence in the rainforest

A rainforest works through **interdependence**. This is where the plants and animals **depend on each other** for survival. If one component changes, there can be **serious knock-up effects** for the entire ecosystem.



Rainforest nutrient cycle

The **hot, damp conditions** on the forest floor allow for the **rapid decomposition** of dead plant material. This provides plentiful nutrients that are easily absorbed by plant roots. However, as these nutrients are in high demand from the many fast-growing plants, they do not remain in the soil for long and stay close to the surface. If vegetation is removed, the soils quickly become **infertile**.

Distribution of Tropical Rainforests

Tropical rainforests are **centred along the Equator** between the Tropic of Cancer and Capricorn. Rainforests can be found in South America, central Africa and South-East Asia. **The Amazon** is the world's largest rainforest and takes up the majority of northern South America, encompassing countries such as Brazil and Peru.

Climate of Tropical Rainforests

- Evening temperatures rarely fall below **22°C**.
- Due to the **presence of clouds**, temperatures rarely rise above **32°C**.
- Most afternoons have heavy showers.
- At night with no clouds insulating, temperature drops.

CASE STUDY: UK Ecosystem: Epping Forest, Essex

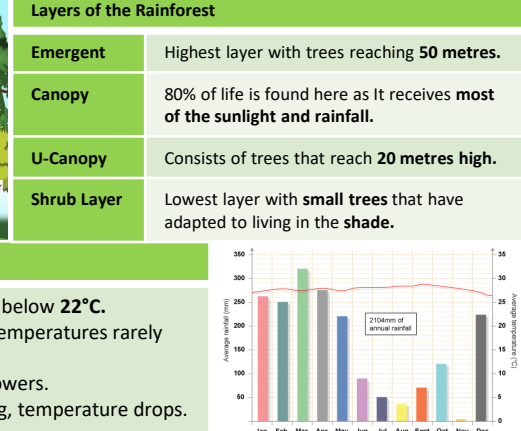
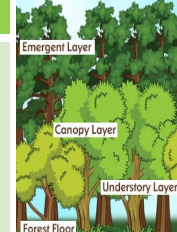


This is a typical English lowland deciduous woodland. **70% of the area** is designated as a **Site of Special Scientific Interest (SSI)** for its biological interest, with **66 %** designated as a **Special Area of Conservation (SAC)**.

Components & Interrelationships	Management
Spring Flowering plants (producers) such as bluebells store nutrients to be eaten by consumers later.	<ul style="list-style-type: none">Epping has been managed for centuries.Currently now used for recreation and conservation.Visitors pick fruit and berries, helping to disperse seeds.Trees cut down to encourage new growth for timber.
Summer Broad tree leaves grow quickly to maximise photosynthesis .	
Autumn Trees shed leaves to conserve energy due to sunlight hours decreasing.	
Winter Bacteria decompose the leaf litter, releasing the nutrients into the soil.	

Layers of the Rainforest

Emergent	Highest layer with trees reaching 50 metres .
Canopy	80% of life is found here as It receives most of the sunlight and rainfall .
U-Canopy	Consists of trees that reach 20 metres high .
Shrub Layer	Lowest layer with small trees that have adapted to living in the shade .







Tropical Rainforests: Case Study Brazil





Brazil is a NEE country in South America.

Adaptations to the rainforest		Rainforest inhabitants
Spider Monkey	Strong limbs to help it climb	Many tribes have developed sustainable ways of survival. The rainforest provides inhabitants with... <ul style="list-style-type: none"> • Food through hunting and gathering. • Natural medicines from forest plants. • Homes and boats from forest wood.
Drip Tips	Allows heavy rain to run off leaves easily .	
Lianas & Vines	Climbs trees to reach sunlight at canopy.	


Issues related to biodiversity	What are the causes of deforestation?
--------------------------------	---------------------------------------

Why are there high rates of biodiversity?	Logging 	Agriculture 
<ul style="list-style-type: none"> • Warm and wet climate encourages a wide range of vegetation to grow. • There is rapid recycling of nutrients to speed plant growth. • Most of the rainforest is untouched. 	<ul style="list-style-type: none"> • Most widely reported cause of destructions to biodiversity. • Timber is harvested to create commercial items such as furniture and paper. • Violent confrontation between indigenous tribes and logging companies. 	<ul style="list-style-type: none"> • Large scale ‘slash and burn’ of land for ranches and palm oil. • Increases carbon emission. • River saltation and soil erosion increasing due to the large areas of exposed land. • Increase in palm oil is making the soil infertile.

Main issues with biodiversity decline	Mineral Extraction 	Tourism 
<ul style="list-style-type: none"> • Keystone species (a species that are important of other species) are extremely important in the rainforest ecosystem. Humans are threatening these vital components. • Decline in species could cause tribes being unable to survive. • Plants & animals may become extinct. • Key medical plants may become extinct. 	<ul style="list-style-type: none"> • Precious metals are found in the rainforest. • Areas mined can experience soil and water contamination. • Indigenous people are becoming displaced from their land due to roads being built to transport products. 	<ul style="list-style-type: none"> • Mass tourism is resulting in the building of hotels in extremely vulnerable areas. • Lead to negative relationship between the government and indigenous tribes • Tourism has exposed animals to human diseases.

Impacts of deforestation		land due to roads being built to transport products.	• Tourism has exposed animals to human diseases .
Economic development		Energy Development	
<ul style="list-style-type: none">+ Mining, farming and logging creates employment and tax income for government.+ Products such as palm oil provide valuable income for countries.- The loss of biodiversity will reduce tourism.		<ul style="list-style-type: none">• The high rainfall creates ideal conditions for hydro-electric power (HEP).• These have relatively short life spans and can cause river water to become acidic due to rotting of organic material	Road Building
Soil erosion			 <ul style="list-style-type: none">• Roads are needed to bring supplies and provide access to new mining areas, settlements and energy projects.• In Brazil, the Trans-Amazonian Highway has opened up large areas of the forest to development

Sustainability for the Rainforest
Uncontrolled and unchecked exploitation can cause irreversible damage such as loss of biodiversity, soil erosion and climate change.

Possible strategies include:
<ul style="list-style-type: none"> • Agro-forestry - Growing trees and crops at the same time. It prevents soil erosion and the crops benefit from the nutrients. • Selective logging - Trees are only felled when they reach a particular height. • Education - Ensuring those people understand the consequences of deforestation • Afforestation - If trees are cut down, they are replaced. • Forest reserves - Areas protected from exploitation. • Ecotourism - tourism that promotes the environments & conservation
Climate Change  <ul style="list-style-type: none"> -When rainforests are cut down, the climate becomes drier. -Trees are carbon ‘sinks’. With greater deforestation comes more greenhouse emissions in the atmosphere. -When trees are burnt, they release more carbon in the atmosphere. This will enhance the greenhouse effect.

Cold Environment: Alaska, USA


Alaska is located to the north west of mainland USA next to Canada. It is mostly wilderness with most of the state above the Arctic circle leading to extremes in temperatures.

Opportunities and challenges in the Cold Environments

Opportunities	Challenges
The fishing industry There are two main sectors of the industry: Commercial fishing. Since the 1870s, the sector has grown to employ one in ten Alaskans. Some of the biggest salmon, crab, and whitefish fisheries in the world are in Alaska. They provide 78,500 jobs and add US\$6 billion to the state economy annually.	The low population density of less than one person per square kilometre means that most of Alaska lacks surfaced roads. Hunters, miners and explorers must make their own way across the tundra. Snow and ice make some roads and tracks unusable for months of the year.
Mineral extraction In the late 1800s, Alaska was known as ‘the gold rush state’. Today, one-fifth of the state’s mining wealth still comes from gold (although silver, zinc and lead mining are also very important). Large gold mines must be managed carefully to minimise environmental impacts. Humans and ecosystems can be harmed by the toxic chemicals used to process gold ore (such as mercury, cyanide and nitric acid). Mining development has sometimes been halted due to environmental campaigns..	A process called solifluction takes place in summer. On slopes, the soil’s active layer starts to flow downhill. The thawed soil slides easily over the impermeable frozen layer below. Large amounts of soils and mud can collect at the base of slopes, covering highways that run along valley floors, cutting places off for months.
Tourism Tourism attracts between one and two million summer visitors each year, making tourism one of Alaska’s biggest employers, although some work is seasonal and poorly paid. Some tourists enjoy fishing, while others merely view the wildlife, with popular activities including whale watching and kayaking. Approximately 60 per cent of summer visitors are cruise ship passengers.	Permafrost underlies most of Alaska (Figure 8.14). The seasonal melting of the active layer means that offroad travel cannot take place during summer.
Energy Energy production is another big employer, especially the oil industry (see pages 106–107). More than 50 hydroelectric power (HEP) plants supply Alaskan communities with one-fifth of their electricity. Previously glaciated U-shaped valleys in Alaska are a perfect site for HEP generation. Geothermal energy is also being harnessed in tectonically active parts of the state. Alaska’s coastline is part of the Pacific ‘Ring of Fire’. A tourist resort at Chena Hot Springs near Fairbanks is now powered entirely by geothermal power.	Over time, the seasonal melting and re-freezing of the active layer results in great expanses of uneven ground surface called thermokarst (Figure 8.15) making travel impossible in some places. Frost heave – where pebbles and stones slowly rise upwards to the ground – can make tracks dangerous.
What can be done?	
Indigenous people and newcomers alike use high-pitched steep roofs for their homes so snow can slide off. Triple glazed windows help to keep the cold at bay. Today, new buildings are always raised on piles to prevent melting. These piles can lift a structure several metres above the surface and are sunk deep into the land, well below the lower limit of the active layer. Roads are now built on gravel pads one to two metres deep that stop heat transfer from taking place. Utilities such as water, sewerage and gas cannot be buried underground or they would freeze too. Instead, they are carried by utility corridors or ‘utilidors’. Airport runways are painted white to reflect sunlight and stop them from warming up too much on sunny days.	

Key Dates In the Consolidation of America	
1865	Assassination of Abraham Lincoln
1866	Civil Rights Act
1868	Fort Laramie Treaty & the Fourteenth Amendment passed by Congress
1869	Fifteenth Amendment passed by Congress & the Transcontinental railroad completed.
1876	The Battle of Little Bighorn
1877	End of reconstruction in the south
1887	Dawes General Allotment Act
1890	Battle of Wounded Knee

TECHNICAL VOCABULARY	
Polygamy	The practice or custom of having more than one wife or husband at the same time – commonly practiced by Mormons.
Humanitarians	The people who took the view of wanting to help integrate the Native Americans into society by teaching them to live like White people – schools, farming etc.
Ratification	When states formally accept changes to the constitution. An Amendment is ratified once three quarters of States have agreed.
Federalism	Idea that individual states hold political power – each state decides how to govern itself.
Ku Klux Klan	White supremacy group that formed in 1865. They murdered, lunched, beat and threatened African-Americans. They also burned churches, homes and schools.
Total War	Waging a war against a whole enemy population, not just the fighting troops. It meant destroying all the food, shelter, clothing and animals of the Plains Indians.
Homesteads	A farm run by a family.
Reservations	Usually established on worthless land, far from their original territory and often with unfriendly tribes in the same area. Only survived by being fed by the government on a fraction of the promised ration.
Ghost Dance	New religious movement incorporated into numerous Native American belief systems. Wovoka taught the special Ghost Dance could raise the dead and bring a new world free from the White settlers.



A buffalo skinner. Buffalo skins were much in demand.

The rest of the animal would be left to decay on the plains.

This killed the main source of food for the Plains

Buffalo slaughter forced Native Americans to accept Reservations.

Buffalo were slaughtered in large numbers by white settles. They were killed to feed soldiers and railroad construction workers.

People also killed them for their skins – there was a demand for buffalo robes in the East from the 1850’s and from 1871 a process was developed to make buffalo hides into leather.

Others just killed them for sport – men would shoot the animals from windows of trains.

As a result, buffalo numbers decreased rapidly – in 1865 there were 13 million buffalo but by the end of the century they were almost extinct.

Why the Homesteaders went west.	
The actions of the US Government.	The U:S government recognised the need to populate the West and help to help achieve this the Homestead Act was passed in 1862. Intended to encourage people to settle in the West by allowing each family 160 acres of land for free. Other acts were: 1. Timber Culture Act, 1873. 2. The Desert Land Act, 1877
The end of the American Civil War	Thousands of Demobilised soldiers and their families were looking to rebuild their lives. Thousands of newly freed black slaves were looking for new beginnings. They looked west and became homesteaders’ cowboys, miners, soldiers & railroad-builders.
The building of the transcontinental railroads.	The Native Americans believed in the spirit world and believed that a superior being, known as the Great Spirit was responsible for all things. They also believed that lesser spirits controlled different elements of the world. The Native Americans believed that land could not be possessed by mankind and we merely occupy it.

Key People				
<u>George Armstrong Custer</u>	<u>General Sheridan</u>	<u>Sitting Bull</u>	<u>Big Foot</u>	<u>Crazy Horse</u>
United States Army officer and cavalry commander in the Civil War and American Indian Wars. Led the US Army at the Battle of Little Bighorn.	Planned and ordered a three-pronged campaign in order to defeat the hostile Indians.	Important chief of the Sioux and refused to live on the Great Sioux reservation. Became involved in the Ghost Dance movement and was shot and killed by Indian police sent to arrest him on 15 th Dec 1890.	Indian Chief who helped lead the Ghost Dance movement. Involved in Battle of Wounded Knee.	A farsighted chief committed to safeguarding the traditional values of the Sioux. Great general who led his people into war against US Army



MONARCHY

The white settlers in the United States believed in the idea of Manifest Destiny, the idea that the United States is destined – by God, its advocates believed – to expand its dominion and spread democracy, Christianity and capitalism across the entire North American continent.

RELIGION

White Americans begin to travel across America for a variety of reasons. They passed through the Plain's Indians territory which causes issues due to the clash of cultures. The Government create Acts and Treaties to allow their continued expansion to happen.

INVASION

In 1860 Abraham Lincoln was elected President of the United States of America, despite receiving zero votes from the Southern States. This was one of the factors that led to the American Civil War. In 1863, President Lincoln signed the Emancipation Proclamation which declared “all persons held as slaves are and henceforward shall be free”.

POLITICAL REFORM

American West

HISTORICAL SUBSTANTIVE CONCEPTS

IDEOLOGY

Many white Americans believed it was Gods will that they occupied the new land and should take with them their ideas and beliefs of Christianity, Freedom and Democracy. This was called Manifest Destiny

CONFLICT

The Mexican-American War (1846-48) was won by America. This victory brought a lot of states into America from Mexico (including Arizona, New Mexico, Nevada, Colorado and Utah) which opened up a land of opportunity to the white Americans. Slave states (the southern states of America) and Free States (the northern states of America) begin to argue over the future of the newly acquired territories.

REVOLUTION

TAX & ECONOMY

Between 1820 to 1860 the Southern states grew increasingly reliant upon Slavery to support their cotton-based economy. Westward migration, technological advances and a rapid economic development pushed America forward as they claimed millions of acres and thousands of people as part of the United States.

Verb	Noun	Connective	In my opinion	I think that	Verb	Infinitive
Me encantaría ser = I would love to be	ama de casa = housewife albañil = bricklayer	because	en mi opinión	creo que	puedo = I can	ayudar otras personas = to help other people
Me chiflaría ser = I would love to be	azafato = flight attendant	porque				ganar mucho dinero = to earn a lot of money
Me molaría ser = I would love to be	bombero = firefighter abogado = lawyer	dado que				reparar coches = to repair cars
Me fliparía ser I would love to be	cajero = cashier panadero = baker				vigilar los niños = to look after children	
Me apetecería ser = I would be interested to be	camarero = waiter	puesto que		pienso que	quiero = I want	enseñar los niños = to teach children
Me interesaría ser = I would be interested to be	cocinero = cook carnicero = butcher		encargarme = to be in charge of			
Me fascinaría ser = I would be fascinated to be	enfermero = nurse gerente = manager	ya que	para mí	tengo ganas de = I want to	montar mi propio negocio = to set up my own business	
Me gustaría ser = I would like to be	fontanero = plumber electricista = electrician	aunque =			voy a = I am going to	viajar por todo el mundo = to travel the world
Quisiera ser = I would like to be	ingeniero = engineer secretario = secretary	although	a mi modo de ver	considero que	cuidar a los clientes / pacientes / jubilados= to look after the customers / patients / retired people	
	jardinero = gardener				contestar llamadas telefónicas = to answer phone calls	
	mecánico = mechanic				preparar platos = to prepare meals	
	medico = doctor				servir comida y bebida = to serve food and drink	
	militar = soldier soldado = soldier				vender ropa de marca = to sell designer clothes	
No me gustaría ser = I wouldn't like to be No me interesaría ser = I wouldn't be interested to be	peluquero = hairdresser repcionista = receptionist contable = accountant		desde mi punto de vista		trabajar al aire libre / en un hospital / en un taller / en una tienda / en una oficina = to work in the fresh air / in a hospital/ in a workshop/ in a shop / in an office	
Detestaría ser I would hate to be	periodista = journalist veterinario = vet				ambiciosa = ambitious trabajadora = hardworking paciente = patient inteligente = intelligent	
No me apetecería ser = I wouldn't be interested to be	policía = police officer traductor = translator				soy una persona...	creativa = creative organizada = organized seria = serious práctica = practical
Odiaría ser I would hate to be	profesor = teacher				= I am a ... person	extrovertida = outgoing

	Opinion	Infinitive	Connective	Opinion
Si pudiera = If I could	me encantaría = I would love	ganar mucho dinero = to earn a lot of money	porque = because dado que = because puesto que = because ya que = because aunque = although	lo pasaría bomba = I would have a great time
Si fuera posible = If it was possible	me molaría= I would love	buscar un trabajo = to look for a job formar una familia = to have a family		lo pasaría fenomenal = I would have a great time
Si ganara la lotería = If I won the lottery	me chiflaría = I would love	ir a España = to go to Spain casarme = to get married		lo pasaría fantástico = I would have a fantastic time
Si tuviera bastante dinero = If I had enough money	me interesaría = I would be interested	pasar un año en Australia = to spend a year in Australia		lo pasaría fatal = I would have an awful time
Cuando sea mayor = When I am older	me apetecería = I would be interested	aprender a esquiar = to learn to ski		lo encontraría aburrido = I would find it boring
Cuando tenga dieciocho años = When I am 18	me fascinaría = I would be fascinated	viajar con mochila por el mundo = to go backpacking around the world		lo encontraría interesante = I would find it interesting
Después de haber estudiado = After having studied	me gustaría = I would like	comprar un coche / una casa = to buy a car / house		sería estupendo = it would be great
Cuando termine mis estudios = When I finish studying	no me gustaría = I wouldn't like	ser famoso / rico = to be famous / rich		sería fantástico = it would be fantastic
Después de haber terminado mis exámenes = After having finished my exams	no me apetecería = I wouldn't be interested	trabajar en un orfanato = to work in an orphanage		sería guay = it would be cool sería divertido = it would be fun
Después de haber terminado en la universidad = After having finished university	no me interesaría = I wouldn't be interested	apoyar un proyecto medioambiental = to support an environmental project		sería aburridísimo = it would be extremely boring

	PRESENT I do (add to stem)	PRETERITE I did (add to stem)	IMPERFECT I was doing (add to stem)	CONDITIONAL I would do (add to infin)	FUTURE I will do (add to infin)	PERFECT I have done		PRESENT CONTINUOUS I am doing
	AR ER IR	AR ER/IR	AR ER/IR	AR/ER/IR	AR/ER/IR		AR> ado ER/IR> ido	AR> ando ER/IR> iendo
I	o o o	é í	aba ía	ía	é	heado		estoyando
You	as es es	aste iste	abas ías	ías	ás	has.....ado		estásando
He	a e e	ó íó	aba ía	ía	á	ha.....ado		estáando
We	amos emos imos	amos imos	ábamos íamos	íamos	emos	hemos.....ado		estamosando
You.pl	áis éis ís	asteis isteis	abais íais	íais	éis	habéis.....ado		estáisando
They	an en en	aron ieron	aban ían	ían	án	han.....ado		estánando
Some common I R R E G U L A R S	ir> voy ser>soy dar>doy estar>estoy hacer>hago tener>tengo poner>pongo salir>salgo	ir>fui ser>fui dar>di estar>estuve hacer>hice tener>tuve poner>puse saber>supe	ser>era ir>iba hay>había	Same as future tener>tendría venir>vendría poner>pondría salir>saldría saber>sabría poder>podría haber>habría decir>diría querer>querría	Same as conditional tener>tendré venir>vendré poner>pondré salir>saldré saber>sabré poder>podré haber>habré decir>diré querer>querré	abrir>abierto escribir>escrito hacer>hecho poner>puesto romper>roto ver>visto volver>vuelto		dormir>durmiendo seguir>siguiendo sentir>sintiendo vestir>vistiendo

Una entrevista	Interview
El sueldo / el salario	Salary
Repartir periódicos	To deliver newspapers
Hacer de canguro	To babysit
Ayudar en casa	To help at home
Pasear al perro	To walk the dog
Pasar la aspiradora	To do the vacuuming
Ganar _ libras a la hora	To earn £_ per hour
Mi jefe / jefa	My boss
Mis compañeros	My colleagues
Mis prácticas laborales	My work experience
Una año sabático	A gap year
El paro / el desempleo	Unemployment
Solicitar	To apply
La universidad	University
Un título	Degree
El bachillerato	A levels
Experiencia previa	Previous experience

GCSE DANCE KNOWLEDGE ORGANISER

EXAM COMMAND WORDS

Analyse: Separate information into components and identify characteristics to be able to explain and interpret.

Comment: Present an informed opinion.

Compare: Identify similarities and/or differences.

Consider: Review and respond to information given.

Define: Specify meaning.

Describe: Set out characteristics.

Discuss: Present key points taking into account different ideas, characteristics and/or features.

Evaluate: Judge from available evidence and make an informed design on the effectiveness.

Explain: Set out purposes or reasons.

Give: Produce an answer from recall.

How: State in what ways.

Identify: Name or characterise.

Interpret: Translate information into recognisable form demonstrating an understanding of meaning.

Name: Identify correctly.

Outline: Set out main characteristics.

State: Express in clear terms.

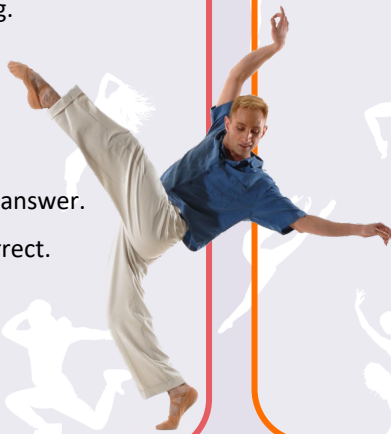
Suggest: Present a possible case or possible answer.

Tick: Put a mark to indicate something is correct.

What: Specify something.

Which: Specify from a range of possibilities.

Why: Give a reason or purpose.



KNOWLEDGE, UNDERTSANDING AND SKILLS FOR PERFORMANCE

Expressive skills

Projection

Focus

Spatial awareness

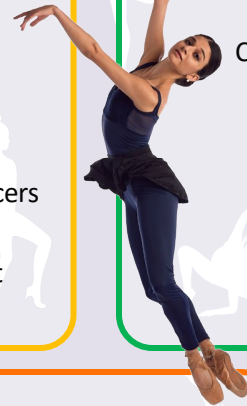
Facial expression

Phrasing

Musicality

Sensitivity to other dancers

Communication of choreographic intent



Physical skills

Posture

Alignment

Balance

Coordination

Control

Flexibility

Mobility

Strength

Stamina

Technical skills

Action

Space

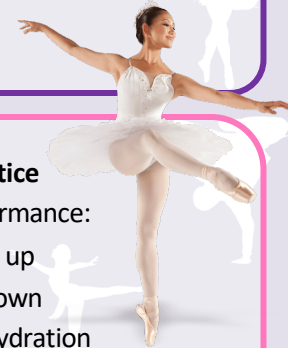
Dynamics

Relationships

Timing

Rhythmic content

Moving in a stylistically accurate way



Mental Skills

Prep for performance:

Systematic repetition

Mental rehearsal

Rehearsal discipline

Planning of rehearsal

Response to feedback

Capacity to improve

During performance:

Movement memory

Commitment

Concentration

Confidence



Safe Practice

Prep for performance:

Warming up

Cooling down

Nutrition & Hydration

During performance:

Safe execution

Appropriate dance wear:

Footwear

Hairstyle

Clothing

Absence of jewellery

GCSE DANCE KNOWLEDGE ORGANISER

KNOWLEDGE, UNDERTSANDING AND SKILLS FOR CHOREOGRAPHY

Action
Travel
Turn
Elevation
Gesture
Stillness
Use of different body parts
Floor work
Transfer of weight

Dynamics
Fast/slow
Sudden/sustained
Acceleration/deceleration
Strong/light
Direct/indirect
Flowing/abrupt

Spatial Content
Pathways
Levels
Direction
Size of movement
Patterns
Spatial design

Relationship Content
Lead and follow
Mirroring
Action and reaction
Accumulation
Complement and contrast
Counterpoint
Contact
Formations

Choreographic Processes
Researching
Improvising
Generating
Selecting
Developing
Structuring
Refining and synthesising



Structuring devices and form
Binary
Ternary
Rondo
Narrative
Episodic
Beginning/middle/end
Unity
Logical sequence
Transitions

Choreographic devices
Motif and development
Repetition
Contrast
Highlights
Climax
Manipulation of number
Unison
Canon



KNOWLEDGE, UNDERTSANDING AND SKILLS FOR CRITICAL APPRECIATION

Features of Production

Staging/set: Eg. projection, furniture, structures, backdrop, screens
Features of these such as colour, texture, shape, decoration, materials.
Lighting: Eg- Colour, placement, direction, angles etc.

Properties: Eg- Size, shape, materials, how used etc.

Costume: Footwear, masks, make up, accessories

Features such as colour, texture, material, flow, shape, line, weight, decoration and how they define character or gender, identify characters, enhance or sculpt the body and enhance the action.

Dancers: Number and gender.

Aural setting: Eg: Song, instrumental, orchestral, spoken word, silence, natural sound, found sound, body percussion, style, structure and musical elements such as tone, pitch and rhythm.

Dance for camera: Eg- Placement, angle, proximity, special effects.



CHOREOGRAPHY KEY WORDS

Stimulus

The starting point for a dance piece.

Motif

A short phrase of movement that reflects a stimulus.

Choreographic Intention

What the choreographer would like the audience to learn about the dance.

Choreographic Approach

How the choreographer created movement material
eg. improvisation, collaboration, choreographic tasks.

Communication of Choreographic Intent

Mood
Meaning
Idea
Theme Style/style fusion

Performance Environment

Proscenium arch
End stage
Site-sensitive
In-the-round



Building Tension:

Tension, or **dramatic tension**, often lies with the development of **suspense** in a drama. As the **audience** anticipates certain outcomes in the plot, the **tension builds**. An example of **rising tension** occurs in a mystery play or whodunit. In these instances, the audience is left in a constant state of **suspense** trying to guess the real culprit.

The development of **tension** usually parallels the advancement of the plot, leading to a **crisis or climax**. **Tension** is closely linked with the **element of timing**.

The Audience:

Using the **imagination** of the **audience** and the **suspension of disbelief** is extremely important when developing **tension, suspense and atmosphere**.

Technical elements:

The use of **sound effects, music, lighting, costume and set** in a performance can be pivotal in creating **suspense and atmosphere**.

Symbol

A symbol is something which stands for, or **represents something else**. **Symbols** are often used in drama to deepen its meaning and remind the audience of the themes or issues it is discussing. A **prop** often has a particular significance that an **audience** will instantly recognise when used **symbolically** in the work.

**Lighting**

Altering the **level of light** and combining the light with various colours can help to significantly change the **mood** and **atmosphere** of a scene.

- A **low lighting level**, with dark blues, greens or reds, can make the stage very **eerie** and filled with **dramatic tension**.
- A **high lighting level** of warm, coloured light can produce a very **happy** and **energetic** feeling on **stage**.

Subject Terminology

Suspense	A state or feeling of excited or anxious uncertainty about what may happen.
Mood	Created by the director, performers and performance elements all working together. Eg: mysterious, stressful
Atmosphere	Atmosphere is the overall feeling the audience experiences as a result of the mood created in the scene.
Climax/ Anti-climax	This is the building and release of tension in drama .
Play within a play	It means that your characters are performing a play on-stage for their own benefit, as a part of the play
Tension	Tension is a growing sense of expectation within the drama
Suspension of Disbelief	The people in the audience know that what they are seeing on stage or screen is a pretend reality, but they are pretending that they do not know that.

Music and Sound

Sound and music are extremely effective when conveying the **atmosphere** required for a specific **scene** or moment. A **sound designer**, working with the director, will:

- Identify moments where the **sound** can enhance the **action** on stage for an audience.
- Decide what sort of **sound** is required (**music, sound effect** or combination).

Music will often imply that the drama on stage is building to a **climax**, making the **audience** think that something is going to happen and putting them on edge.

Other factors that will affect your performance

To determine what factors will affect your performance, you should ask yourself the following questions:

- Where will the performance take place?
- Who will be your target audience?
- What style or genre will the performance be in?

Whether you specialise in acting, singing or dancing, creating a performance piece could potentially involve all three disciplines. As the director, you manage the creative process and final production. Your first big decision is deciding what type of performance you want to create. For example, it could be:

- a community play
- a street performance
- a performance in a small-scale theatre
- an open-air production
- a festival
- a concert.

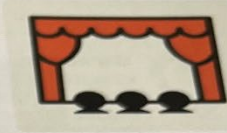
Behind-the-scenes roles



- **Director** – a person who is responsible for the overall creative vision of a production. They have to lead a team through the creative process so that all elements of the show come together to produce the final outcome. A director works directly with the producers, creative team and performers.
- **Producer** – a person who researches funding and investment to finance a production. They also supervise the creation and performance of the show. They work directly with the director, creative team and performers and manage the technical and stage management teams.
- **Stage manager** – a person who is responsible for the technical details of the production and is fully responsible for the stage during each performance. They assist the director during rehearsals and supervise the lighting, costume and set.
- **Choreographer** – a choreographer creates dance routines for performances. They must follow the brief to create routines appropriate for the type of performance. A choreographer recruits and auditions dancers, teaches the set repertoire and develops movement material that forms part of the final performance. They work alongside costume, prop, lighting and set designers, and directly under the director and show producer.
- **Set designer** – a person who designs, creates and builds the set for a show or scene.
- **Theatre technician** – a person who works backstage and manages the stage crew. They prepare and maintain the set/stage by moving scenery and may be responsible for setting up or adjusting video, audio and lighting equipment. The theatre technician works with the stage crew, set designer, lighting designer and director.
- **Sound designer** – a person who creates sound effects and atmosphere to fit the narrative of a film or live performance. A sound designer would work directly with the musical director, composers and live musicians.
- **Lighting designer** – a person who designs the lighting plot for a film or live performance to help create a specific atmosphere to fit the narrative. The lighting designer works directly with the director, choreographer, set designer, costume designer and sound designer to ensure the safety of performers and that all elements are functioning as intended.
- **Stage crew** – a group of people also known as stage hands who work behind the scenes during the show or a live performance to ensure that scene changes are carried out at the correct time.

Stage roles

- **Actor** – a person who acts on stage, or in TV or film. They work with the director and choreographer.
- **Stand-up comedian** – a person who entertains a live audience using humour and comedy.
- **Circus artist** – a person who entertains a live audience with circus skills and acts. They work with the director and choreographer.
- **Session musician** – a singer or instrumentalist who performs in a live or recorded session or gig. The performer is usually employed on a session-by-session basis. The ability to read music, improvise and perform by ear are essential for a session musician. Knowledge of a wide range of styles is also important. Most session musicians work as freelancers. Production companies or record labels may contact the session musician directly or use a contractor (fixer). There are usually agreed rates and terms and conditions for session musicians; most of the time, a session musician is paid a fee and the deal is done – no further payment is required. Unions will usually support musicians with their rights and payments if appropriate. They work with the musical director.
- **Singer** – a person who sings to entertain a live audience individually or as part of an ensemble. They work with the director, choreographer and musical director.
- **Dancer** – a person who performs routines to live audiences as part of entertainment shows, or TV or film productions. A dancer works with a choreographer or director to learn a repertoire and create choreography. In musical theatre, a dancer would also be required to act and sing.



Key Signature

The sharps or flats at the start of a piece of music, showing what key the music is in.

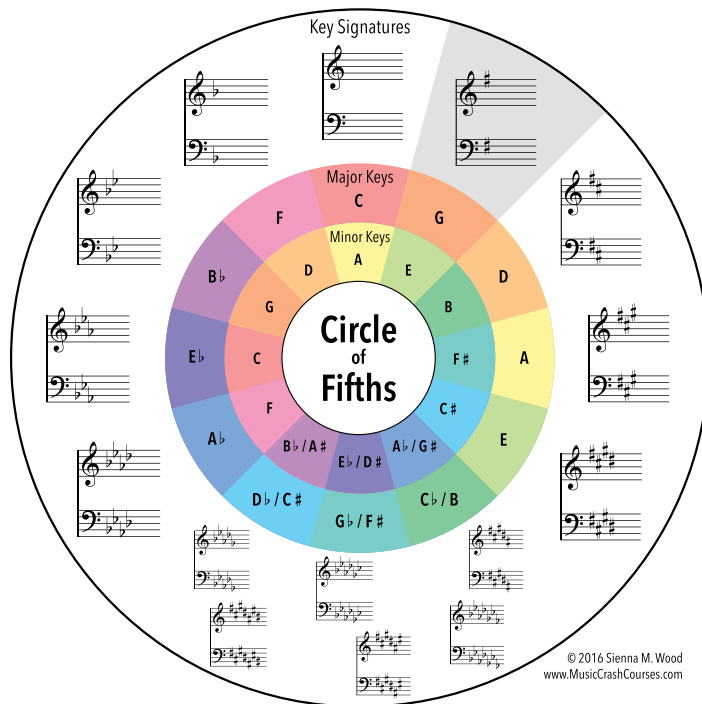
HARMONY & TONALITY

(The chords and keys used in the music)

Modulation

Musical word for key change. Most common changes: to **Dominant** or **relative Major/Minor**.

Major and Minor Key Signatures



*When you write music in a minor key you also need to raise the 7th note (leading note) up one small step - e.g. A minor uses G#, not Gs.

Identifying The Tonality...

- Tonal** - In a major or Minor Key
- Atonal** - There is no sense of key
- Modal** - Uses 'old-fashioned' scales called modes
- Pentatonic** - The music only uses 5 notes

Chords

- Triad** - A chord with three notes (See below)
- Power Chord** - Only playing the Root and Fifth of a triad (used in Rock music)
- Dissonance** - Clashing notes played together
- Consonance** - Notes that fit / sound nice together
- Primary Chords** - The three most commonly used chords used in music: I, IV, V
- Secondary Chords** - The other chords: II, III, VI, VII
- Chord Sequence** - The order the chords in a piece of music follow (containing cadences at the ends of phrases)

Cadences

The last two chords in a phrase. Only sounds 'complete' if ends on chord I.

Sounds Complete		
Perfect Cadence	V Dominant	I Tonic
Plagal Cadence	IV Subdominant	I Tonic
Sounds Incomplete		
Imperfect Cadence	I Tonic	V Dominant
Interrupted Cadence	V Dominant	*Not chord I Minor Chord

*Sometimes the final cadence of a piece in a minor key ends with a major chord instead of the expected minor chord. This effect is known as a **Tierce de Picardie**.

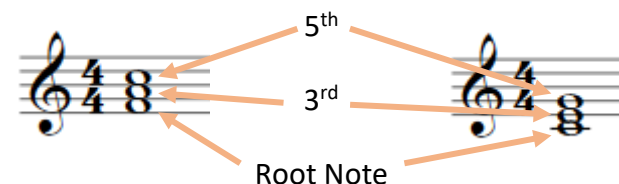
Diatonic

Music only uses notes that are found in the key signature of the piece

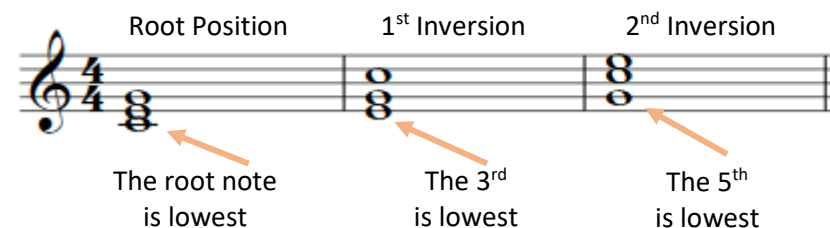
Chromatic

Music uses the notes found in the key of the piece but also adds in extra accidentals (# / b)

Triad A Chord with three notes:



Inversions Changing which note of a chord is the lowest sounding:



Some film **SOUNDTRACKS** include specially composed **SCORES**, either for orchestra (e.g. composers like John Williams, Ennio Morricone) or songs written especially for the film (e.g. Disney films). Other films use pre-existing music e.g. popular songs from the era/place in which the film is set.

STRINGS

- Violin
- Cello
- Viola
- Double bass
- Harp

WOODWIND

- Flute
- Clarinet
- Oboe
- Bassoon
- Saxophone

BRASS

- Trumpet
- Trombone
- French horn
- Tuba

KEYBOARDS

- Piano
- Electronic keyboard
- Harpsichord
- Organ
- Synthesizer

PERCUSSION

- Bass drum
- Snare drum
- Triangle
- Cymbal
- Drum kit (untuned)
- Timpani
- Glockenspiel
- Xylophone (tuned)

OTHER

- Electric guitar
- Bass guitar
- Spanish/classical guitar
- Traditional world instruments

Musical elements

Film composers use the **MUSICAL ELEMENTS** (tempo, texture, dynamics, timbre, tonality, rhythm, melody, harmony) to create mood and atmosphere to help to tell the story and enhance the action.

For example:
In a **sad, reflective scene**, a composer might use slow tempo, minor tonality, soft dynamics, legato, homophonic texture, long sustained notes, and a conjunct melody.

An **exciting car chase scene** in a thriller might have a fast tempo, busy, polyphonic texture, dissonant chords, loud dynamics, syncopated rhythms, a disjunct melody and short riffs.

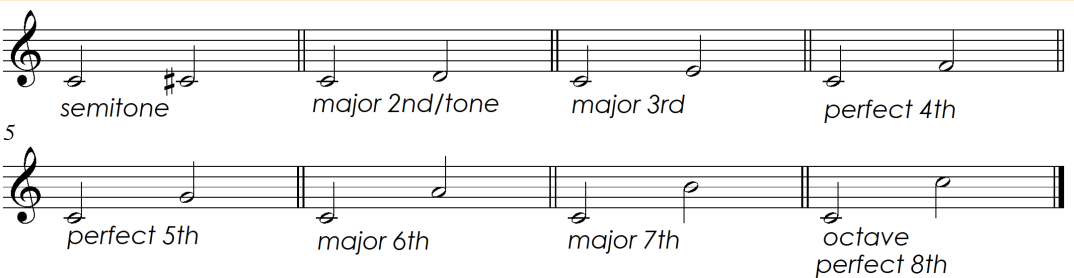
A scene where the **superhero ‘saves the day’** might use a major tonality, brass fanfares, loud dynamics, accents, 4^{ths} and 5^{ths} (intervals).

Composers will often use **CONTRASTS** to create effect (e.g. using a wide range of pitch from very high to very low).

Intervals

Film composers often use intervals to create a particular effect (e.g. a rising perfect 4th sounds ‘heroic’, and a semitone can sound ‘menacing’).

An **interval** is the distance between two notes.



Rising interval: moving upwards (ascending)
Falling interval: moving downwards (descending)

Specific instrumental terms

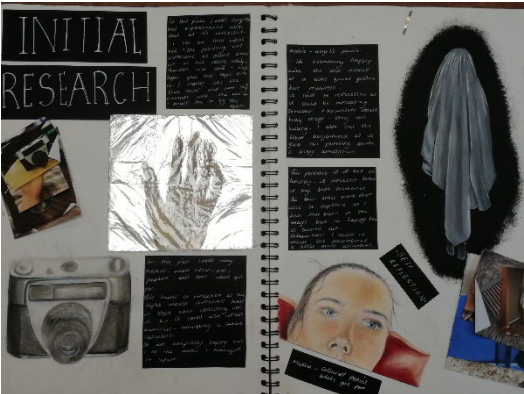
Pizzicato	Plucking the strings.
Divisi	Two parts sharing the same musical line.
Double stopping	Playing two strings at the same time.
Arco	Using a bow to play a stringed instrument.
Tremolo	A ‘trembling’ effect, moving rapidly on the same note or between two chords (e.g. using the bow rapidly back and forth).
Tongued	A technique to make the notes sound separated (woodwind/brass).
Slurred	Notes are played smoothly.
Muted	Using a mute to change/dampen the sound (brass/strings).
Drum roll	Notes/beats in rapid succession.
Glissando	A rapid glide over the notes.
Trill	Alternating rapidly between two notes.
Vibrato	Making the notes ‘wobble’ up and down for expression.

Composers also use:

Theme	The main tune/melody.
Motif	A short musical idea (melodic or rhythmic).
Leitmotif	A recurring musical idea linked to a character/object or place (e.g. Darth Vader’s motif in Star Wars).
Underscoring	Music playing underneath the dialogue.
Scalic	Melody follows the notes of a scale.
Triadic	Melody moves around the notes of a triad.
Fanfare	Short tune often played by brass instruments, to announce someone/something important; based on the pitches of a chord.
Pedal note	A long, sustained note, usually in the bass/ lower notes.
Ostinato/riff	A short, repeated pattern.
Conjunct	The melody moves by step.
Disjunct	The melody moves with leaps/intervals.
Consonant harmony	Sounds ‘good’ together.
Dissonant harmony	Sounds ‘clashy’.
Chromatic harmony	Uses lots of semitones/accidentals that’s not in the home key.
Minimalism	A style of music using repetition of short phrases which change gradually over time.

Assessment Taxonomy					
LIMITED	BASIC	EMERGING COMPETENT	COMPETENT & CONSISTENT	CONFIDENT & ASSURED	EXCEPTIONAL
Unstructured Clumsy Disjointed Minimal Elementary	Deliberate Methodical Superficial Unrefined Simplistic Tentative	Reflective Predictable Growing Control Broadening Endeavour Safe	Informed Purposeful Secure Engaged Skilful Thoughtful Cohesive	Advanced Convincing Comprehensive Focused Perceptive Refined Resolved Risk-taking	Accomplished Inspired Intuitive Insightful Powerful Extraordinary Unexpected Outstanding
1-12 marks	16-24marks	28-36 marks	40-48 marks	52-60 marks	64-72 marks

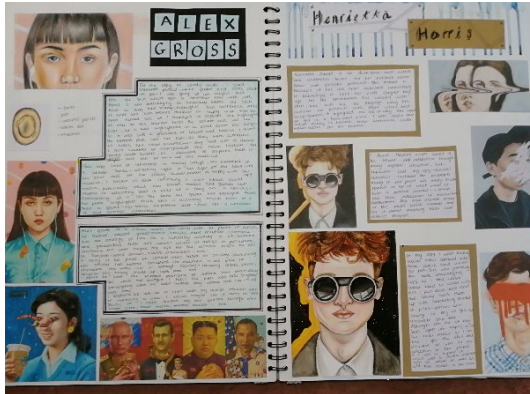
TECHNICAL VOCABULARY	
Response	A reaction (to the work of an artist)
Develop	To evolve, grow and improve
Experiment	To test (with different art media)
Annotate	Explanatory notes
Review	Evaluate
Refine	Improve
Primary source	Observed first hand
Composition	How objects, shapes and patterns are arranged
Analyse	To examine in detail
Resource	An aid to help develop ideas



Week 1+2
Initial research



Week 8+9
Use your own photos for lots of responses and composition ideas and then select the best to draw



Week 3,4+5
Artist copies



Week 6+7
Artist responses



It will be very important to keep up to date with the schedule and meet deadlines as once the timed exam piece starts you can no longer work in your exam book.

Your exam is worth 40% of your final mark and should be the best work you have done so far.

Week	Exam Sketchpad layout
1	Title page+ Spider diagram Initial Research
2	Initial research
3,4+5	Artist copies
6+7	Artist responses
8	Primary sources + compositions
9	Compositions
10,11 + 12	Experiment
12+13	Final choices

Technical principles – Knowledge organiser

<u>What</u>	<u>Definition</u>	<u>What</u>	<u>Definition</u>
A static load	Does not move	<u>NET</u>	2D object which is cut scored and folded into a 3d. Cut lines shown as solid lines
A dynamic load	Moving	<u>Carbon footprint</u>	is the amount of carbon produced from its raw material being made to its product.
Tension	pulling force is applied to either end of a material Stretching	<u>Ecological and social footprint</u>	
Tensile	resist being pulled apart	<u>Folding and bending</u>	techniques can be used to improve the mechanical and physical properties of a material
Compression	occurs when a pushing force is applied to either end of a material	<u>Laminating</u>	bonding two or material to improve its strength, stability and flexibility.
Compression strength	the ability of a material to resist being compressed or squashed	<u>Fabric interfacing</u>	Used in textiles and garments to add support, strength and structure to areas that are needed. These are sewn in Collars in shirts - Peak in the baseball caps.
Torsion	when something is twisted two ends of the material rotate the opposite way.	<u>Folding and bending</u>	Materials manipulated through reshaping can gain many physical advantages
Torsional strength	is the ability of a material to resist being twisted	<u>Curves, arches and tubes</u>	can also be added to give more strength whilst using minimum material
Bending	occurs when both sides are under compression and tension.	<u>Ecological and social footprint</u>	This measures the impact of a persons life on the environment by quantifying the amount of Co2 that are being used.
Shear	occurs when a force applies on an object in a perpendicular to its length	<u>Safe working conditions</u>	In Britain we have employment protect laws that protect us workers. The law holds accountability to the company/ Boss!!! Heath and Safety Executive HSE
Strengthening and enhancing materials	To strengthen or enhance its strength you need to consider the forces that it will have upon it.	<u>Ecological issues in the design and manufacturing</u>	When products are made, natural resources are used, so designers and manufacturers have to make decisions which have a direct impact on the consumption of the earths resources
Webbing	Webbing is a strong fabric woven into strips from yarns, which are often made of synthetic fibres such as nylon or polyester, or even Kevlar Very light but strong and flexible	<u>Deforestation</u>	cutting down of trees
Stiffening Materials	Materials can be <i>laminated</i> to improve strength.	<u>Mining</u>	used to gather finite materials Surface and underground mining!
Interfacing	to stiffen a fabric	<u>Drilling</u>	getting oil and gas
Farming	A huge proportion of the earths crust is used as farmland. 11% - agriculture. 36% - growing crops		

Considerations for planning a menu	
Who <ul style="list-style-type: none">Who are your possible customers?Specific age group/ children/ adults/ ethnic/ ethnic/ religious background, ethnicity	Is going to eat it Specific age group/ children/ adults/ ethnic/ religious background, ethnicity
Where <ul style="list-style-type: none">What type of venue is itIndoors or out	In the city- potentially a lot of business people In the country- families Outside space available
What <ul style="list-style-type: none">Type of food will be eatenType of food service	Finger food, no need for cutlery Carvery, buffet- less staff Complex three courses requiring time and more crockery, skilled chef
When <ul style="list-style-type: none">Time of daySpecial occasionsLunchesTake away	Time of day- lunch has more time constraints Lighter foods served Dinner- more varied, several courses, more filling Special occasion- wedding, birthday, religious holiday

Environmental issues to consider when proposing a menu (2.2)
Preparation and cooking methods <ul style="list-style-type: none">Fill the oven up when cooking, so all the meal will cook togetherUse a tiered steamer so more than one vegetable can be cooked at onceLids on saucepans, right size pan for the job, correct sized ring on hob
Ingredients used Sustainable- ingredients farmed in a way which maintains the environment, Seasonal- They are cheaper and will be more local so reducing carbon footprint- Locally sourced Organic- No fertilizers or pesticides used so environment not contaminated with them Farm assured- Farms and food producers have a high standard of animal welfare
Reduced if food is bought locally from producers and bought in bulk Avoid using single serve sachets and individually packaged condiments Reuse containers where ever possible, leftovers to produce other meals Recycle –Use plastic containers for storage, and compost raw vegetable waste
Food waste <ul style="list-style-type: none">Plan meals properly- reuse left overs to produce new dishes, daily specialsGood portion control- special portions for childrenStoring food correctly at the correct temperature using the FIFO ruleMisunderstanding the use buy date

TECHNICAL VOCABULARY	
Carbon footprint	The amount of greenhouse gases produced by a particular product during production
Greenhouse gases	Gases that trap heat and raise the earth’s temperature
Reduction	A sauce is simmered to drive off the water and create a thicker and richer sauce
Roux sauce	A mixture of fat and flour which when heated with liquid becomes a thickening agent
Substitutions	Alternative ingredients or dishes to suit customers with special dietary needs: Lactose free milk
Blanch	Plunging fruit or veg into boiling water for 2 mins and then cold water.
Organoleptic	The qualities which people experience with their senses
Dovetailing	When your plan shows you are working on more than one product at a time
Mis en plas	Preparation time before cooking
Gelation	Solidifying a mixture by chilling or freezing

Unit 2

AC2.1/ 2.2 LO2

How dishes meet a customer’s needs (Can be completed as a table) (2.3)
Reason for choice- Think about the customers in your brief, how do your chosen two dishes meet their needs. This dish will appeal to both adults and children because... Menu needs to be balanced and offer a variety of cooking methods, flavours, textures and colours
Nutritional needs- Refer to the customer nutritional needs (1.2) and justify your choices. Which nutrients are in the dishes chosen, give examples .e.g. pasta is a carbohydrate and good source of energy, tomato sauce is rich in vitamin A, good for healthy eyesight.
Organoleptic- Sight, taste, texture, sound and aroma- Justify how dishes meet these criteria What dishes would be served with them to compliment and complete the menu?
Adaptable- How the selected dish can be made vegetarian, gluten free, lactose free, vegan, suggesting alternative and substitute ingredients .e.g. Quorn in place of beef mince
Preparation time- Can elements be made before hand to reduce waiting time? can left overs be used in another dish?
Cost- The cost of each item to the customer should ensure the restaurant makes a profit. <ul style="list-style-type: none">Software can do this very accurately.Prices should be competitive with similar establishments in the areaPrice should reflect value for money, consider seasonal price changesCost needs to cover overheads such as gas, electric, equipment, wages, rent



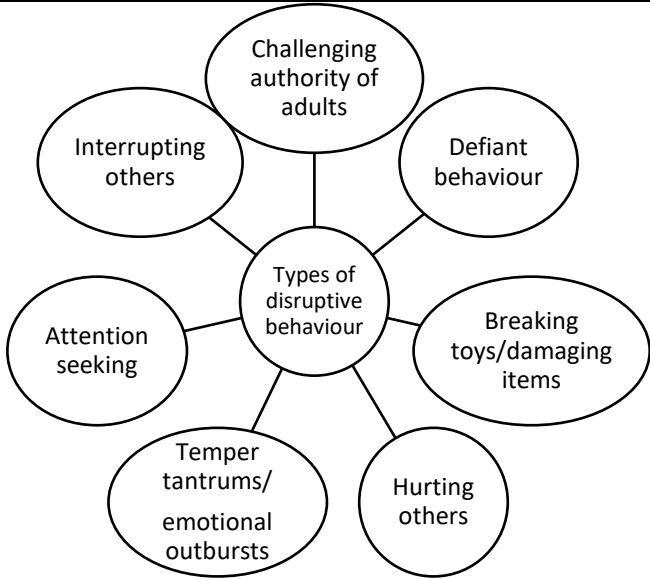
Physical needs that may impact on play, learning and development.	
What is a sensory impairment?	A sensory impairment would include a difficulty in seeing (visual impairment) or hearing (hearing impairment).
What are some possible impacts of visual impairments?	Motor skills can be affected; may not move towards things as they can't see them; won't be able to fully explore so won't develop concepts easily; may struggle to talk as can't copy lip movements of others; not able to make eye contact causes difficulties in social situations; can't see facial expressions clearly; maybe less independent.
What are some possible impacts of hearing impairment?	Discharge from the ears; posture issues; difficulties with reading and maths concepts; difficulty in speech as they cannot hear the sounds required to speak; restricted language can affect social development; can have low self-esteem.

Cognitive and intellectual needs that may impact on play, learning and development.	
What are the possible impacts of poor concentration levels?	Can lead to disruptive behaviour; can talk a lot and interrupt others; can be restless or fidgety; won't persevere with learning skills; lose interest quickly; difficulties in paying attention, following instructions or completing activities.
Why do some children have difficulties remembering instructions?	Developmental disabilities (ADHD; autism; Down's syndrome); concussion or traumatic brain injury; medical conditions like epilepsy.
What are difficulties in problem-solving?	Some children find this difficult as they haven't reached their age milestones for cognitive development. Developmental conditions like Down's syndrome which can mean a lower cognitive ability. Other reasons could be trauma; birth injuries; mothers using drugs/alcohol during pregnancy.
What impact can delayed literacy skills have?	Children who are left-handed can struggle with writing- longer to form letters; learning difficulties; behavioural problems.

Communication and Language needs that may impact on play, learning and development	
What are the benefits of children learning English as an additional language?	Cognitive skills are developed if using more than 1 language; problem-solving and creativity skills; memory improves; can socilaise with different people; closer bonds if have a shared language; links between language and culture/religion = self-identity/self-esteem.
What can be the negative impacts of learning English as an additional language?	Children in a setting where they don't understand the language may be frightened, they may feel different to others = low self-esteem. May take longer to settle in as they need time to learn the language; may lose their 'home' language; may have gaps in language or develop a speech delay.
How do we recognise speech delay?	A child may have a speech delay if at 3 years old they are hard to understand; don't ask for things by name; learn words but don't remember them; know fewer words than you'd expect. Delayed language can also come from medical issues; lack of stimulation or no opportunities to interact and learn language.

TECHNICAL VOCABULARY	
Delayed gross motor skills	Large movements of the body are not progressing as quickly as other children of the same age.
Delayed fine motor skills	Small movements of a child's hands and fingers are not progressing as quickly as other children of the same age.
Poor concentration levels	Children find it difficult to focus on what they are doing and/or focus for a long time.
Down's syndrome	A biological disorder which occurs during embryo development when cells are dividing, and an error occurs causing development delays.
Embryo	Stage of pre-birth when the egg has been fertilised.
Delayed literacy skills	A child's reading and writing skills are not progressing to expected milestones of their age and stage of development.
English as an additional language	English is not a child's first language, the first language is the one a child is exposed to from birth.
Positive role model	Someone who sets a good example.
Social norms and values	Attitudes and behaviours that are considered 'normal' in society.
Limited interaction	When a child has limited communication and contact with adults.

Social and emotional needs that may impact on play, learning and development	
What impact can limited interaction with adults have?	Children may have a lack of interest in things; may not learn how to join in and play with others; behave unacceptably to gain attention and do not develop language skills.
What impact can having poor awareness of social norms and values have?	May display inappropriate and unwanted behaviour in social situations and public places; difficulties concentrating or making friends; can be withdrawn and have low self-esteem.
Why do some children have difficulty forming bonds with adults?	Premature birth; Postnatal depression; a child's health or a parent/parents health and abuse. If a child has difficulty forming bonds with adults this impacts on play, learning and development.
What are the impacts on a child if they don't play?	Child will not know what they like or are interested in; find it hard to control emotions; unable to make friends or cooperate; won't learn how to use resources and equipment; won't progress in development; won't be able to adapt; can lead to anxiety and depression.
Why do some children have difficulties forming friendships?	May not have the skills – can't share or take turns; may not have formed bonds with adults making it difficult to trust and understand the needs of others; delayed language skills; English as an additional language; not tolerant of others; domineering; argumentative.



TECHNICAL VOCABULARY	
Friendships	Relationships between friends.
Disruptive behaviour	Unwanted behaviour that disturbs and interrupts activities.
Transitions	Changes in children’s lives.
Care or education providers	Settings that provide formal care/education for children – school for example.
Sibling	Brother or sister.
Significant family member	A close family member – parent, sibling or grandparent.
Family structure	The way in which a family is organised.
Expected milestones	Development that is expected at a particular age.
Initiate play	To start play.
Sustain involvement	Being involved for an extended period without interruption.
Perceived	Interpreting something in a particular way.
Isolate	Cause a person to be alone/apart from others.
Emotional resilience	A person’s ability to adapt to stressful situations.

Social and Emotional needs that may impact on play, learning and development: transitions	
What can transitions bring to a child?	A new environment or a new relationship which can have different effects on different children.
How will children feel during transitions?	A range of feelings from excitement to stressed, anxious and nervous.
Why do children prefer things to stay the same?	Things being consistent helps children feel safe and secure- changes are unsettling.
How do children cope starting nursery/school?	Depending on age children may be nervous or excited; could suffer from separation anxiety; may cry; be clingy; ask lots of questions.
How do children cope with a new sibling?	This is a huge adjustment – many children are jealous or start to behave like a baby to gain attention (regression) may be aggressive and may try to hurt the baby or take their things.
How do family structures change?	Births; divorce; separation; death. Children may also move house or spend time at two different houses’ Some children go into care and many children find adjusting to changes difficult.

Possible impact of not meeting expected milestones: -
<ul style="list-style-type: none">- Unable to develop own ideas and make connections.- May not develop language and social skills.- Unable to understand concepts such as shape and colour.- May not learn to control movements.- Will not develop imagination and creativity.- Poor concentration, perseverance and memory skills.

Possible impact of individual needs on physical learning and development: -
<ul style="list-style-type: none">- Unable to access learning activities at varying levels.- May not develop stamina.- May not develop friendships.- Unable to grasp small objects or manipulate materials.- May tire easily and not be able to sustain involvement in activities.- May be unable to navigate play areas and activities.
Possible impact of individual needs on cognitive development: -
<ul style="list-style-type: none">- May not understand rules.- Poor awareness of social norms.- May not be able to sustain attention.- May have difficulties taking turns; listening to others; sharing or being respectful.
Possible impact of individual needs on communication and language development: -
<ul style="list-style-type: none">- Difficulties with speaking and listening.- May not be able to make sense of information.- Play with others may be limited.- May lack confidence.- May not be able to build friendships.
Possible impact of individual needs on social and emotional development: -
<ul style="list-style-type: none">- May find cooperative play difficult.- May have poor emotional resilience.- May isolate themselves or be isolated by others.- May refuse or find it difficult to join in team or group activities.- May have limited expression of thoughts and feelings.- May find building positive relationships difficult.- May find it difficult to cope with change.- May have low self-esteem.

Key studies

Davis and Moore (functionalist)

Society needs to place people into roles / social positions that need to be filled for society to operate smoothly. Some roles come with higher status (doctors, lawyers). People who fill the top roles are the most able, have the most drive/ambition and are the most competitive.

Marx (Marxist)

Class is an important division, the bourgeoisie have power/control over the proletariat who are exploited for profit. The working class and petty bourgeoisie didn't benefit from the growth of capitalism. Small business couldn't compete and had 'downward social mobility'. The working class are not aware of their exploitation.

Devine

Conducted interviews at a car factory in the 1980s. She found evidence of the working class still being separate and still had working class values. This goes against the idea of embourgeoisement.

Townsend

Conducted surveys on 2000 households about poverty, used relative poverty index and found the government underestimated poverty (6% vs. 22%). Concluded that poverty should be measured using a number of factors.

Murray (New Right)

There is a growing underclass in British society caused by overgenerous welfare benefits. Can be seen in three ways – welfare dependency, juvenile delinquency, loss of traditional values.

Weber

Believed class is important but is not just tied to income/wealth, status and power can affect someone's position in society too. He thought capitalism actually expanded the middle class and a revolution by the working class is possible. Distinguished between three types of power in society – charismatic, traditional and rational legal.

Walby (Feminist)

Men have more power in society due to patriarchy. This is shown in 6 ways – paid work/employment, labour in the home, patriarchal culture, sexuality, male violence and the state. Public patriarchy is now more likely to exist than private patriarchy.

Poverty

Definitions of poverty

Absolute

Not being able to afford things you need to survive e.g. food/shelter
Politicians prefer it (looks like less people are in poverty) and is a fixed definition, does not change between countries

Relative

Not being able to afford the general standard of living in society e.g. internet
Sociologists prefer it (more accurate) and takes into account differences in standards of living between countries.

Reasons / explanations of poverty

Reasons

Poor health, divorce, old age, disability, unemployment, lack of education

The poor are responsible

Culture of poverty – Socialised within a subculture to accept poverty, see it as normal, unlikely to try and get themselves out of it. Leads to a cycle of deprivation – poverty being passed from one generation to the next.

Cultural deprivation – May not have the correct norms and values to be motivated to get out of poverty, may seek immediate gratification (e.g. spending money rather than saving)

Welfare dependency – Overgenerous welfare benefits could mean there's no incentive to work for less than you would receive. Can lead to the poverty trap.

Society is responsible

Class inequality – Marxists argue capitalism is responsible for poverty as the working class are not given opportunities to get out of poverty (low wages and zero hour contracts, low social mobility)

Globalisation – Has led to a higher cost of living and low minimum wages, with less manufacturing jobs as these have moved abroad.

Are poverty statistics accurate?

Yes

Functionalists – official statistics are accurate

No

Marxists – statistics underestimate poverty so the working class believe society is fair and do not revolt
Feminists – statistics underestimate female poverty due to lower wages, less opportunities etc.
Townsend – governments underestimate poverty and should use relative measures

Is poverty still an issue in society?

Yes

Poverty rates are increasing for all age groups (1/5 people)
Marxists – minimum wages and zero hour contracts still cause poverty
Feminists – poverty is still an issue for women

No

Functionalists – government policies have aimed to reduce poverty
Less people are in absolute poverty now

Power and authority

Formal power – power from the title/role someone has

Informal – power from respect/appreciation earned

Forms of power / authority

Traditional – inherited (e.g. monarchy), based on established customs/traditions

Charismatic – shown by a leader with persuasive/inspirational qualities

Rational legal – shown by organisations through laws, rules and regulations

Who has power?

The ruling class have power over the working class (Marxist view)

Men have power over women (in employment, the home, society, violence, the government) (feminist view)

Heterosexuals – LGBT may have less power in politics/police etc.

White individuals – BAME groups under-represented in politics

Older people – younger may be excluded from politics (vote at 18)

Power of the state

Political system in the UK – democracy, first past the post system (MPs elected based on votes in constituency)
Other systems – dictatorships (one person in power), proportional representation

Can the public influence the state?

Yes – pluralist view, pressure groups, petitions, protests etc.

No – conflict approach, Marxists, power of businesses rather than the public

The underclass

Does the underclass still exist?

Yes

Murray – underclass is in Britain, can be seen in welfare dependency, juvenile delinquency and a loss of values
Members of the underclass were blamed for the London riots
There are more lone-parent families in the underclass

No

Murray blames the victims for being welfare dependent but could be due to divorce etc.
Marxists – the underclass are scapegoated to blame for society's problems
Many people who are on benefits still aspire to have paid employment/better themselves

Key terms

Absolute poverty - Not being able to afford the basic things you need to survive in life e.g. food, clothing,

Achieved status - Social positions are earned through personal talent, merit and effort, not fixed at birth

Ascribed status - Social positions/status are fixed at birth (due to class) and do not change over time

Bourgeoisie - The ruling class who owned the means of production and exploited the working class

Culture of dependency - The welfare system encourages people to stay on benefits rather than support themselves through work

Glass ceiling - An invisible barrier in employment that prevents some groups such as women or ethnic minorities from gaining promotions

Life chances - The opportunity/chance of achieving positive or negative outcomes (e.g. healthy/ill, rich/poor) as you progress throughout life

Power - The ability to get what you want, despite opposition

Pressure group - A group formed to influence government policy on a particular issue

Relative poverty - Not being able to afford to meet the general standard of living compared to most other people in their society

Social exclusion - The inability of some groups in society (e.g. the elderly, the working class) to play a full part in society/access the full benefits

Social inequality - The uneven distribution of resources (e.g. money or power) and opportunities

Social mobility - The ability to move up the social ladder

Social stratification - How society is structured in a hierarchy of layers based on factors such as age, gender

Status - The social standing or prestige someone is given by other members of society.

Underclass - A group in society who have different attitudes and values to others. They experience long-term unemployment, tend to be reliant on benefits

Wealth - The ownership of assets (e.g. property, land, jewelry) and savings, shares etc.

Welfare dependency - When individuals are reliant on the government for income for a prolonged period of time

Gender & Poverty:


- Women have longer life expectancy so more female pensioners living alone.
- Women more likely to head lone-parent families. Usually have a low income.
- Gender pay gap
- Women are more likely to be in part-time income than men.

Ethnicity & Poverty:

- Lower income families
- Generally disadvantaged in employment, pay and quality of job.

Child Poverty: More likely to live in poverty if:

- Household has four or more children.
- Where the head of the house is a lone parent or from an ethnic minority
- With no paid workers.

	Poverty	Power
Functionalists	Focus on the positive functions of poverty for some groups e.g. knowing you could live in poverty means people will undertake undesirable jobs, creates jobs for groups who deal with the poor. The poor also reinforce mainstream norms and provide examples of deviance such as lazy and dishonest.	Government and politics serves a purpose to regulate main stream norms and values. 
Marxists	Poverty is the result from class-based inequalities. It is inevitable that some people will be poor in a capitalist society. Poverty serves the interests of the bourgeoisie who can hire and fire people e.g. if they demanded higher wages, the bourgeoisie could threaten to higher from the unemployed.	Weber- power is based on coercion or authority. The main sources of authority are traditional, rational legal and charismatic authority. Marxists argue the bourgeoisie use their power to exploit the proletariat. They have economic and political power.
Feminists	Women face the greatest risk of poverty than men, lone-mothers and the older women living alone in particular. The gender pay gap and the inequality of the division of caring responsibilities contribute to this.	Patriarchy- the system of our social structures and practices are male dominated and they use this power to oppress and exploit women.
New Right	Focus on individuals behaviour rather than structural causes of poverty. Stress the importance of traditional values and self-reliance. Welfare dependency and the underclass are key ideas in this approach.	The government does not meet it's peoples needs, and they believe their should be minimal government intervention from the welfare state.

Sex & Gender

Sex: Male or female (biology)

Gender: masculine or feminine.


Gender & power:

Feminists see gender inequality as the most important source of division in society. Society is mainly controlled by men who have considerable power within politics and the workplace.

The crisis of masculinity:

Men are currently experiencing this because of the underachievement of boys in school, the decline of paid work in manufacturing, women's increased participation in paid employment.

Inequalities:

- Gender dominated occupations e.g. fire-fighting, nursery worker.
 - Glass ceiling for women- invisible barriers for promotion.
 - Gender pay gap.
 - Women's triple shift.
 - Childcare provision- barrier preventing women from returning to work.
- 

Ethnicity

A social group that share an identity based on their cultural traditions, religion or language

Ethnicity & Power:

Under-represented in political power/decision makers. Also under-represented in teaching, armed forces, police officers, particularly at high levels of the organisation. Although 40% of highest positions in the NHS are from ethnic minority groups

Inequalities:

- Unemployment
- Discrimination in the labour market
- Minority groups have become an underclass (see Charles Murray)
- Racism is built into the workings of capitalism.

Evidence to support a belief in life after death	
	Why might this support a belief in life after death?
Near Death Experiences	These are first hand accounts from those who have been near to death, providing information about what happens after life earth ends. Accounts often share similarities i.e. bright lights or seeing loved ones.
Past Life Memories	People have provided details of a previous life which when researched have been proven to be accurate, with other possible way to know this information.
Ghost Sightings	Ghosts are believed to be the spirits of the dead which appear in visible from to the living. A reliable witness may claim to have seen someone who is known to have died. Some believe these have unfinished business on earth which prevents them passing over completely.
Receiving a message from medium	People have received messages from mediums containing information that links directly to deceased loved one. Often there is no other way could have gathered that information.

Beliefs about heaven

1. Heaven is a spiritual existence of peace and happiness in the eternal presence of God.
2. It is often depicted as above the earth, a place where good people go after death for eternity.
3. Heaven is only for Christians as you have to believe in God to guarantee a place in heaven.
4. You have to believe in Jesus and live a good life to go to heaven.
5. Believers in God, not just Christians, will go to heaven.
6. It is a place of reward for both faith and good actions in life.



Beliefs about hell

1. Some Christians understand it to be a state of existence without God.
2. Traditional paintings depict it as a fiery place of eternal torment, suffering, torture and terror ruled by the Devil (Satan). It is usually depicted as below the earth.
3. Hell is the place where those who don't believe in God or Jesus go for eternity after death.
4. If you live an immoral life then you will go to hell.
5. Hell is an eternal state cut off from God. Any person not acknowledging God or follow God's teachings in their lifetime would face that eternity.



SUBJECT TERMINOLOGY	
Afterlife	The belief in continued existence in some form after physiological death. The belief that some aspect of an individual survives after death—usually, the individual's soul—is common to the great majority of the world's religions.
Eternity	Endless life after death.
Funeral	A ceremony or service held shortly after a person's death, usually including the person's burial or cremation.
Heaven	a place regarded in various religions as the place where God and the angels reside, and of the good after death.
Hell	a place regarded in various religions as a spiritual realm of evil and suffering, often traditionally depicted as a place of perpetual fire beneath the earth where the wicked are punished after death.
Judgement	The belief that a person will be judged by God to decide their destiny in the afterlife.
Medium	A person who claims to be able to communicate with dead people in the spirit world.
Nibbana	A Buddhist word meaning ‘quenching’ of the activities of the world and its suffering.
Near death experience	An occurrence in which a person comes very close to dying and has memories of a spiritual experience (such as meeting dead friends and family members or seeing a white light) during the time
Paranormal activity	Events or phenomena such as telekinesis or clairvoyance that are beyond the scope of normal scientific understanding.
Rebirth	The process of being reincarnated or born again.
Reincarnation	The belief that an individual does not live just one life, but that they live multiple lives, one after the other..
Revelation	The divine or supernatural disclosure to humans of something relating to human existence.
Spiritualism	A system of belief or religious practice based on supposed communication with the spirits of the dead, especially through mediums.

Tibetan Wheel of Life

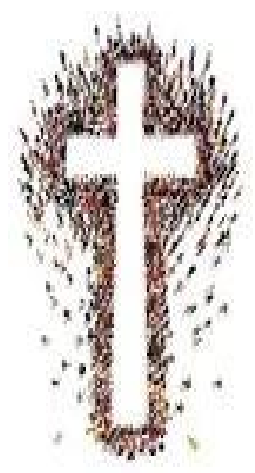


1. To Buddhists, existence is a cycle of life, death, rebirth and suffering that they seek to escape altogether, and the Tibetan Wheel of ife shows this.
2. The Tibetan Wheel of Life illustrates the process of dependent arising (the idea that all things change and all things are interconnected) in relation to human life, death and rebirth.
3. The Wheel is divided into five or six realms, or states, into which a soul can be reborn. It is held by a demon. Around the rim are depicted the twelve stages of dependent origination.
4. The frightening figure holding the wheel is Yama, the Lord of Death or Monster of Impermanence. He has three eyes and wears a crown of skulls. Yama symbolises the impermanence of everything. The beings he holds are trapped in eternal suffering by their ignorance of the nature of the universe. Buddhism teaches that death is not the end and is not to be feared.
5. The outer circle is 12 links or stages of a human’s life (nidanas); the 12th link (old age and death) leads to the first link (ignorance). This shows the Buddhist teaching of rebirth; the wheel shows the cycle of birth, death, then rebirth this cycle is called **samsara**.
6. Depicted in the spokes of the wheel are the six (originally, five) realms of rebirth (*gatis*): the god realm, the realm of the *asuras* (originally included in the god realm), the realm of the hungry ghosts (*pretas*), the hell realm, the animal realm, and the realm of human beings.

Y10 Subject Christian Practices 1

Worship	
What is Liturgical worship?	More likely to be seen in Roman Catholic and Anglican services. There is a liturgy (a set order) of things including set prayers and readings from the Bible.
What is non-Liturgical worship?	This is usually in non-conformist churches and tends to be Bible based. There is a pattern, but the service leader has free choice, the prayers are usually in the person’s own words and style - extemporary prayer.
What is charismatic worship?	This contains elements of the other forms of worship but is free flowing. It focuses on the gifts of the Holy Spirit including speaking in tongues and the worship is often lively.
What is Quaker worship?	There is no leader or structure; people sit in a circle around a table on which there is the Bible and Quaker writings. If someone wants to speak they can, otherwise people sit in silence.
What is private worship?	It can be liturgical – an Anglican saying Morning Prayer or a Roman Catholic the Rosary. It can be non-liturgical – meditating on a Bible passage.
Why is worship important?	It brings a sense of togetherness as a community; makes people feel close to God; it is an external expression of faith and it is peaceful allowing time for prayer and meditation.
What is prayer?	Prayer is talking to and listening to God and the guidance of the Holy Spirit, it should be humble and persistent. You can pray for yourself; others; thank God; confess and praise.

Christian Festivals	
What are the two most important festivals?	Christmas and Easter.
When and why do we celebrate Christmas?	We celebrate Christmas on the 25 th December and we remember the events around Jesus’ birth.
Where do we find information about Christmas?	The main accounts are in the Gospels of Matthew and Luke.
How is Christmas celebrated?	The most important parts are Christmas Eve and the Midnight Mass – the service starts in darkness and when the Gospel is read the lights come on (Jesus = the light of the world). There are carols, Christingles services and the giving of gifts (Jesus = God’s gift to the world).
Why is Christmas important?	Christians thank God for the Incarnation, presents represent love shared, it’s a time to remember families in difficult circumstances.
When and why do we celebrate Easter?	Easter follows Holy Week remembering the passion and death of Jesus. It remembers his arrival, teaching, betrayal, the Last Supper, arrest, crucifixion and resurrection. It is celebrated in April.
How is Easter celebrated?	Giving out of Palm Crosses; the Monarch gives out maundy money to represent the money paid to Judas; on Good Friday all colour is removed from churches and there are procession. On Easter Sunday there are vigils and Christians may be baptised.



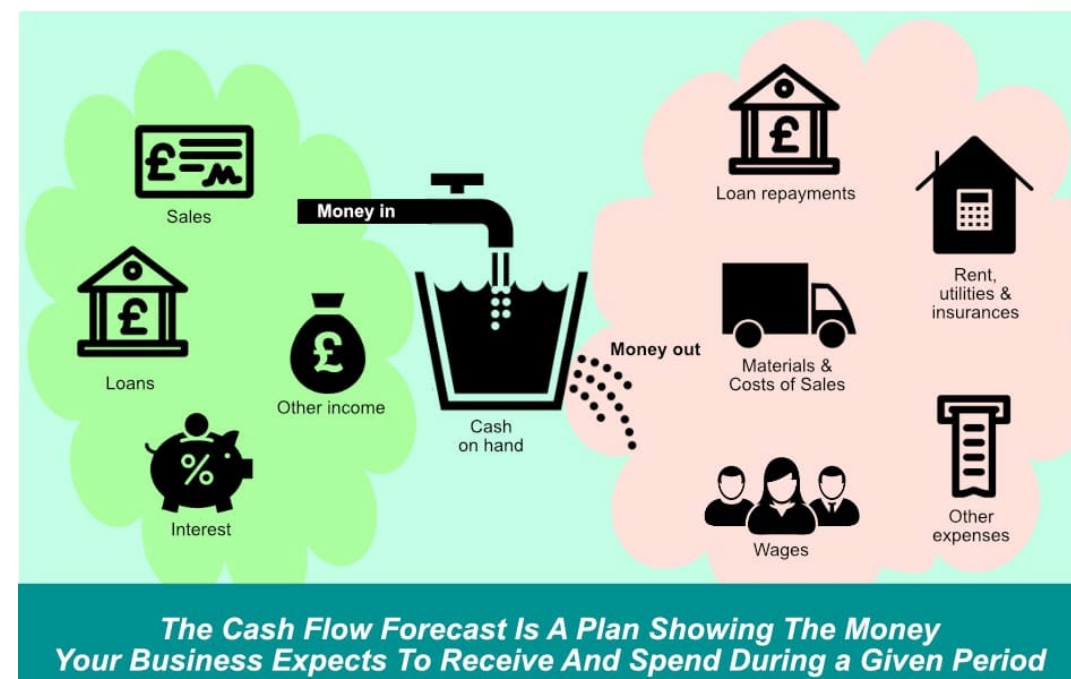
TECHNICAL VOCABULARY	
Worship	Acts of religious praise, honour or devotion.
Liturgical worship	A church service that follows a set structure or ritual.
Non-liturgical worship	A service that does not follow a set text or ritual.
Informal worship	A type of non-liturgical worship, sometimes ‘spontaneous’ or ‘charismatic’ in nature.
Private worship	When a believer praises or honours God on his or her own.
Nonconformist	An English Protestant who does not conform to the doctrines or practices of the established Church of England.
Sacraments	Rites and rituals through which the believer receives a special gift of grace; for Catholics, Anglicans and many Protestants, sacraments are ‘outward signs’ of ‘inward grace.’
Holy Communion	A service of thanksgiving in which the death and resurrection are celebrated using bread and wine – Eucharist, Mass, Lord’s Supper, Breaking of Bread, Divine Liturgy.
agape	A word used in the Bible that describes selfless, sacrificial, unconditional love.
Mission	The vocation or calling of a religious organisation or individual to go out into the world and spread their faith.

Eucharist	
What is the Last Supper?	This was the meal that Jesus had with his disciples celebrating Passover. Jesus gave new meaning to breaking the bread and drinking the wine. The bread became his body and the wine his blood.
Do all Christians celebrate the Eucharist?	All Christians apart from Quakers and members of the Salvation Army.
What are the main parts of the service?	The blessing of the bread and wine (consecration); Repeating Jesus’ words from the Last Supper; The bread and wine are shared with the <u>people (congregation)</u> .
How is the Eucharist understood?	Roman Catholics – the bread and wine <u>actually</u> become the body and blood of Jesus (transubstantiation); Many Protestants see it as an act of <u>remembrance</u> .
What are the variations of the Eucharist?	The Orthodox Church calls it the Divine Liturgy and the bread and wine are consecrated behind the iconostasis and brought through the Royal Doors. This emphasises the mystery of what is happening. Roman Catholics believe the bread and wine actually become the body and blood.
What is the significance of the Eucharist for Christians?	All denominations who practise it see it as important, either enough to do it every week or every month so it doesn’t lose its significance. Orthodox Christians don’t describe what is happening spiritually as it is a mystery.

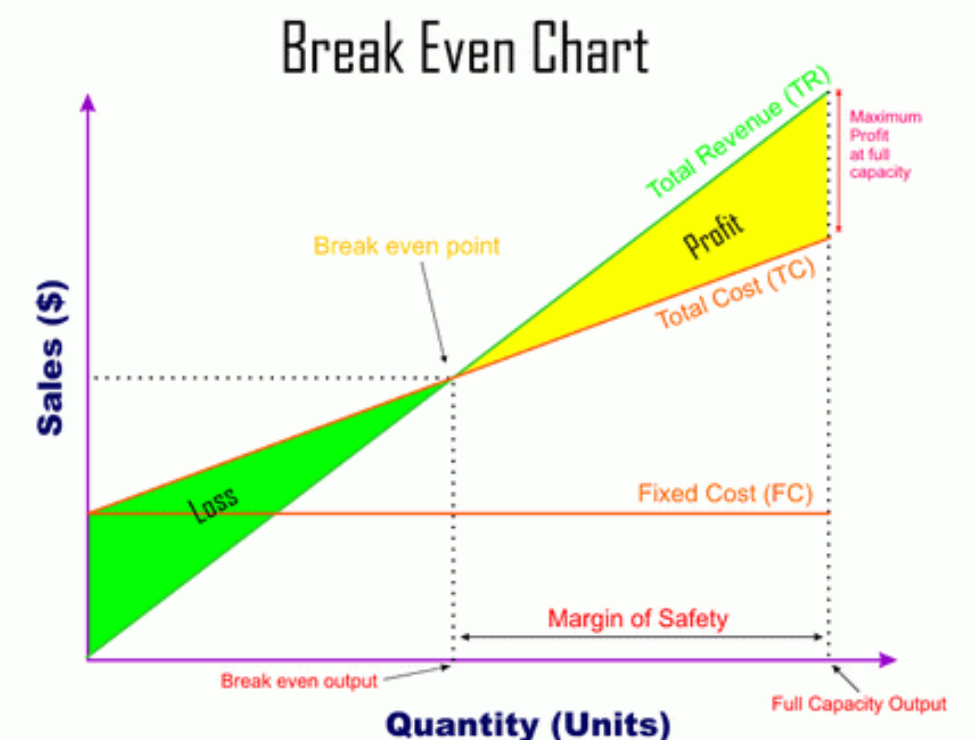
Topic Formula	
Revenue	Number of Sales x Price
Total costs	Total Fixed Costs + Total Variable Costs
Gross Profit	Sales revenue – Cost of sales
Net profit	Gross profit – Other expenses
Interest	$\frac{\text{Total repayment} - \text{borrowed amount}}{\text{Borrowed amount}} \times 100$
Break-even Point in units	$\frac{\text{Fixed Costs}}{(\text{Sales price} - \text{variable cost})}$

Profit and loss Account
Sales revenue minus
Cost of Sales (raw materials, packaging, direct wages) ↓ Equals
Gross Profit ↓ minus
Operating Costs (salaries, rent, insurance, advertising) ↓ Equals
Net profit

Cash flow forecast



TECHNICAL VOCABULARY	
Medium	How an enterprise chooses to communicate with and advertise to its market
Promotional mix	The range of techniques used to communicate with current and potential customers. Advertising, public relations, direct marketing, personal selling and sales promotions.
Push Strategies	Push goods and services directly to the customer at the point of purchase. Making them aware of the brand.
Budget	Is the amount of money designated for a specific activity or period of time.
Assets	Items an enterprise owns. Includes property, machinery and cash.
Capital	Is the money, buildings and equipment that an enterprise uses in order to trade.
Start-up costs	The amount of money spent setting up a business before it starts trading.
Running costs	Are the fixed and variable costs that have to be paid to keep the business trading.
Cost of sales	Is the cost of producing the product.
Retained profit	Is profit earned and accumulated from previous trading reinvested back into the enterprise.
Net current assets	Are the difference between current assets and current liabilities. They show the value of the enterprise.
Liquidity	The ability of an enterprise to pay its debts
Trade Credit	Allows a customer to 'buy' things from a business without paying for them at the time. The money is paid back later in instalments.



Exam – Topic Area 1 – Issues affecting Participation in Sport	
Participation	Taking part and being involved in a sporting activity.
Barriers	Factors that may make participation particularly difficult.
User Groups	A specific group of people with similar characteristics.
Stereotyping	A widely held but simple and sometimes unjust viewpoint or idea about a particular type of person.

Exam – Topic Area 2 – Role of Sport in Promoting Values	
Team Spirit	The feeling of pride and loyalty that exists among the members of a team, that makes them want their team to do well or to be the best.
Fair Play	Appropriate, polite behaviour, which involves respecting fellow competitors, adhering to the rules and does not involve illegally doping.
National Pride	A sense of pride in the name, culture and practices of a country.
Tolerance and Respect	Willingness to accept others’ differences, such as ethnicity and culture.

Exam – Topic Area 3 – Hosting a Major Sporting Event	
Regular Sporting Events	Happen often at set intervals
One-off Sporting Events	Held once in a certain place or at a certain time.
Regular and recurring sports events	Happen often at set intervals and are periodically held or hosted at the same venue.
Venue	Where something is held.
Sponsorship	The act of supporting an event, activity, or person through the provision of finance, products, or merchandise.

Exam - Topic Area 4 – National Governing Bodies	
NGB	National Giverning Bodies
Sports Councils	There are five sports councils: Sport England, Sport Scotland, Sport Wales, Sport Northern Ireland, and UK Sport.
LTA	Lawn Tennis Association
RFU	Rugby Football Union