Student Name:

MAGNUS
CHURCH OF ENGLAND
ACADEMY

Knowledge Organiser: November 2024

Year 10

"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

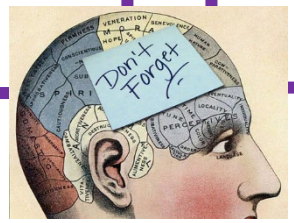
8. Write a set of test questions for yourself using the organiser.
    - Answer these without the organiser the next day.
    - Swap your questions with a friend to increase challenge.
    - Turn your questions in to a game by putting them on cards and playing with friends.

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 10 Half term two key vocabulary

English Language	**English Literature**	**Maths (F)**	**Maths (H)**	**Science - Biology**	**Science - Chemistry**
Detached	Ruthless	Term	Indices	Non-communicable disease	Reactive formula mass (Mr)
Introvert	Regicide	Co-efficient	Algebraic Fractions	Benign tumour	Relative atomic mass
Reverential	Patriarchal	Simplify	Re-arrange	Malignant tumour	Concentration
Formidable	Malevolence	Solve	Equations	Carcinogen	Limiting Reagent
Brash	Usurp	Substitute	Simultaneous Equations	Stents	Reagent in excess
Impression	Hamartia	Form	Elimination (simultaneous equations)	Statins	Electrolysis
Evaluate	Hubris	Expand	Substitution (simultaneous equations)	Risk factors	Ionic compound
Relationship	Equivocation	Factorise	Variable	Casual mechanism	Electrolyte
Dramatic	Omniscient	Variable	Expand	Emphysema	Oxidation
Explicit	Foil	Simultaneous Equation	Factorise	Homeostasis	Reduction
Science – Physics	**History**	**Geography**	**French**	**Core RS**	**GCSE RS**
Thermal conductivity	Inoculation	Brownfield	Noun	Crime	Buddha
Emit	Vaccination	Greenfield	Adjective	Punishment	Jakata
Specific heat capacity	Symptom	Megacity	Verb	Evil	Ascetics
Solar cell	Diagnosing	Regeneration	Connective	Poverty	Meditation
Solar panel	Purging	Informal Sector	Opinion verb	Mental illness	Enlightenment
Dissipated energy	Astrology	Population Density	Infinitive	Addiction	Mara
Calculation for efficiency	Flagellation	Dereliction	Frequency expression	Greed	Dhamma
Insulator	Urine Chart	Sustainability	Conjugate	Retribution	The three marks of existence
Decay	Infirmary	Urban Sprawl	Adjectival agreement	Deterrence	The four noble truths
Irradiated	Apothecary		Wow phrase	Reformation	Arhat
			Exclamation		
Enterprise	**Child Development**	**Acting**	**Musical Theatre**	**Art**	**Sociology**
Profit	Growth	Epic Theatre	Character	Response	Home education
Income Stream	Cell	Placards	Rhythm	Primary source	Vocational education
Break-even Point	Health visitors	Spass	Style	Experiment	Specialist school
Credit	Head circumference	V-effect	Musicality	Annotate	Faith school
Overheads	Centile chart	Split-role	Fluidity	Review	Academies
Consumables	Hormones	Multi-role	Spatial Awareness	Reflect	Free Schools
Overdraft	Nutrients	Political	Vocal Technique	Independent	Independent schools
Asset	Holistic development	Alienation	Interpretation	Formal elements	State schools
Retain profit	Milestones	Gestus	Intonation	Analyse	Grammar school
Venture Capital	Developmental norms	Montage	Projection	Media	Comprehensive school
Return on investment					
Guarantor					
Technology	**iMedia**	**Hospitality and Catering**	**Music**	**Construction**	**PE**
Turbines and generators	Visual Identity	Hospitality	Binary	Plasterboard	Assess
Fossil Fuels	Visualisation Diagram	Catering	Terraced Dynamics	Masonry	Accuracy
Batteries	Mind Map	Hazard analysis critical control point (HACCP)	Diatonic	Sub-soil	Performance analysis
Fibre optics	Moodboard	Environmental Health Officer (EHO)	Homophonic	Polymers	Limitations
Graphene	Central Subject Node	First in, First out (FIFO)	Monophonic	Maintenance	Protective equipment
LCD	Topic Node	Control of Substances Hazardous to Health (COSHH)	Pedal	Aggregates	Safety equipment
Gortex fabric	Sub Node	culture and society	Basso Continuo	Disposal	Aerodynamic
Kevlar	Connector/Branch/Line	Workflow	Alberti Bass	Recycle	Thermoregulation
Lever	Conventions	Charring	Anacrusis	Hard-core	Composite materials
CAMS and followers	Concept sketches			Rubble	Prosthetics

English: Varying Sentence Starts 2– Non-fiction

***When* it happened,: begin a sentence with when it happened followed by a comma, followed by an independent clause.**

For example:

Yesterday, I left your shop a very dissatisfied customer.

When I was a student, I worked hard, enjoyed studying and put 100% into my learning.

Over three years ago, I stayed in one of your hotels and had a truly different experience to the one I had last month.

Before I sat my exams, I revised as much as I possibly could.

When it happened , independent clause.

1

***Where* it happened, :begin a sentence with where it happened followed by a comma, followed by an independent clause.**

For example:

From the bedroom, I could hear a constant whistling sound all through the night.

Towards the end of the year, it would be wonderful to celebrate with our year group with an immense party.

In the noisy corridor, all the students pushed and shoved, shouted and yelled and disrespected each other.

At the breakfast table, the family ate their breakfast and discussed their plans for the day.

Where it happened , independent clause.

2

What if…? Begin a question with What if…?

For example:

What if we decided to save the planet together?

What if everyone pulled together to make this happen?

What if we all played our part in this to make sure that it happened?

What if we all shared a responsibility for the amount of waste that is going into the sea each year?

What if….?

3

It wasn't just…, it was…
It isn't just…., it is….

Begin a sentence with It wasn't just followed by a description and a comma followed by it was and a stronger/ more elaborate description.

For example:

It wasn't just hot, it was unbearable scorching weather.

It isn't just annoying, it is incredibly irritating.

It wasn't just dangerous, it was an act of reckless stupidity.

It isn't just practical, it is incredibly clever piece of architecture.

It isn't just… , it is…..

4

Triple adjective + colon + independent clause. Begin the sentence with three adjectives followed by a colon (:) followed by an independent clause (full sentence) to explain.

For example:

Colourful, vibrant, healthy : the flowers are particularly impressive this season.

Dangerous, rough aggressive: it is not a sport for the faint- hearted.

Beautiful, unique, inspiring: this story and the characters will stay with you for a long time after you have finished the book.

Ugly, hideous, permanent: inking the body is a terrible mistake.

Triple adjective + colon + independent clause.

5

Adverb start: begin a sentence with an adverb (-ly,) to show/ emphasise your opinion.

For example:

Sadly, sea life is being destroyed all over the world.

Regrettably, we cannot reverse the damage that has been done.

Unfortunately, it's too late; the impact of not acting sooner has already taken effect.

6

Non-fiction sentence starts to master:

Transactional Writing

To show certainty:

Assuredly, Undeniably,
Certainly, Unmistakeably,
Clearly, Unquestionably,
Indisputably, Without a doubt,
Irrefutably, With confidence,
Surely, With certainty,
Undoubtedly, With certainty,

To show *positivity*:

Confidently, Positively,
Expectantly, Perfectly,
Fortuitously, Unexpectedly,
Fortunately, Uniquely,
Hopefully, Surprisingly,
Luckily, Without reservation,
Optimistically, With any luck,
Without prior notice,

To show *negative* emotion:

Alarmingly, Terrifyingly,
Carelessly, Thoughtlessly,
Distressingly, Tragically,
Disturbingly, Sadly,
Distressingly, Shockingly,
Foolishly, Startlingly,
Horrifically, Worryingly,

English: Varying Sentence Starts 2– Non-fiction

Ambitious Sentence Starts: **Transactional Writing.**

If..., if,..., if..., then.....: **Start a sentence with a subordinating clause beginning with 'If....,' and repeat three times followed by then..... .**

For example:

- **If you want to help make a change, if you want to live in a better place, if you want your children to live in a better world, then** you must act now.
- **If we don't act now, if we sit back and do nothing, if we allow this to continue, then** the next generation won't get the chance to see the beauty of this countryside on their doorstep.
- **If we want to improve, if we want to succeed, if we want to be successful, then** we need to put the hard work in now.

If...., if...., if...., then + action required.

If a celebrity misbehaves in the public eye, if a celebrity continuously breaks the law, if a celebrity doesn't acknowledge when they have been wrong, then how can we expect our young people to do the same?

7

Not only...but also... . Begin the sentence with not only and make a point followed by but also and a further point.

For example:

Not only do we need to reduce the amount of plastic that we but also we need to encourage companies to stop using it altogether.

Not only does it hurt our family and friends but also it hurts ourself.

Not only do we need to work harder but also we need to encourage each other to try their best too.

Not only do we need to work together now but also we need to get the next generation on board too.

Not only.... but also.....

8

So. So. So: .... . Begin three successive sentences with So... followed by a colon and an independent clause.

For example:

So annoying. **So** disruptive. **So** selfish: preventing others from learning must stop.

So talented. **So** skilled. **So** athletic: she is the most impressive diver in this year's Olympics.

So tall. **So** impressive. **So** imposing: the cathedral was worth a visit, particularly at night.

So petite. So delicate. So dainty: the extraordinary necklace was second to none.

So... So.... So... + colon + independent clause.

9

No... . No... . No... , only... . Begin three successive sentences with No... followed by a comma + only... .

For example:

No joy. No hope. No love, only misery.

No time for myself. No break from school. No relaxation, only school work and homework.

No freedom. No independence. No living, only rules and curfews.

No self-expression. No personal choice. No freedom to look the way you want, only uniforms.

No... . No... . No... , only... .

10

Year 10 — Component 1 English Language

Box 1: Vocabulary– Character Traits	
Term	**Definition**
Attentive	Pays close attention to something; concentrating.
Loner	A person that prefers not to associate with others; reclusive.
Detached	Separate or disconnected; isolated.
Considerate	Careful not to inconvenience or harm others; caring; selfless.
Sensitive	Having or displaying a quick and delicate appreciation of others' feelings; thoughtful.

Box 2:	Traits within relationships:
Fickle	Changing loyalties or affections frequently; inconstant.
Self-obsessed	Thinking only about oneself.
Reckless	Heedless of danger; careless; rash; impulsive.
Adventurous	Willing to take new risks; daring; bold; brave.
Introvert	A shy person; reserved; withdrawn.
Impulsive	Acting without thinking; instantaneous; rash.
Self-confident	Trusting in your own ability; secure.
Determined	Decided on a decision and standing firm with it; set on.
Stubborn	Determination not to change one's mind.
Brash	Self-assertive in a rude, noisy way; impatient.
Wilful	Intentional; deliberate.
Responsible	Having an obligation to do something or having control or care over someone as part of role or job.
Patronising	Treat in a way that is ***apparently*** kind and helpful; condescending.

Box 3: Vocabulary: Character Traits	
Term	**Definition**
Well-educated	Having or showing a high level of education; well- read; cultured.
Honest	Free of deceit; truthful; direct.
Integrity	The quality of being honest and having strong morals; truthfulness.
Attractive	Pleasing or appealing to the senses; good-looking.
Humourless	Lacking humour; unable to appreciate humour.
Reverential	Respectful; humble.
Self-sufficient	Needing no help from outsiders; independent.
Patient	Able to accept or tolerate problems without getting irritated; easy going; tolerant.
Intimidating	Having a frightening or threatening affect; unapproachable.
Formidable	Inspiring fear or respect by being impressively large; intimidating.
Unbending	Inflexible; don't change your mind easily; rigid.
Uncomplaining	Resigned; patient; doesn't complain; tolerant.

Box 4: Subject Terminology:	
Term	**Definition**
Impression	An idea, feeling, or opinion about something or someone, especially one formed without conscious thought or on the basis of little evidence.
Relationship	The way in which people regard and behave towards each other.
Evaluate	Form an idea of the amount, number, or value of; assess.

Year 10 — *'Macbeth', by William Shakespeare*

1. Quotes:

'For brave Macbeth-- well he deserves that name --'	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.
'Stars, hide your fires; / Let not light see my black and deep desires, / The eye wink at the hand. '	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).
'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'	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.
"Will all great Neptune's ocean wash this blood clean from my hand"	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.
'To be thus is nothing but to be safely thus'	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 am in blood, steeped in so far, that, should I wade no more, returning were as tedious as go o'er"	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.
"Will these hands ne'er be clean?'	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 top her death.
'dead butcher, and his fiend-like queen'	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.

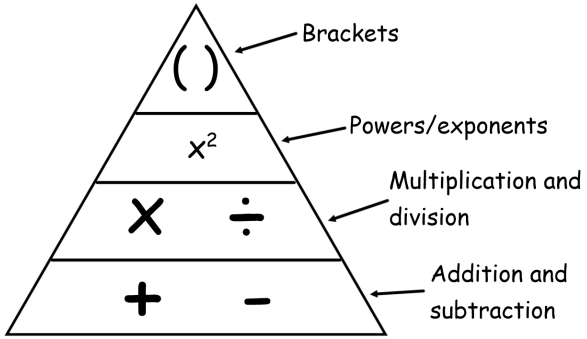
2. Macbeth — Key Terminology:

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.

Order of Operations



Inverse Operations

+ ⟷ −

× ⟷ ÷

$\square^2$ ⟷ $\sqrt{\square}$

$\square^3$ ⟷ $\sqrt[3]{\square}$

Square Numbers

1×1 or $1^2 = 1$
2×2 or $2^2 = 4$
3×3 or $3^2 = 9$
4×4 or $4^2 = 16$
5×5 or $5^2 = 25$
6×6 or $6^2 = 36$
7×7 or $7^2 = 49$
8×8 or $8^2 = 64$
9×9 or $9^2 = 81$
10×10 or $10^2 = 100$
11×11 or $11^2 = 121$
12×12 or $12^2 = 144$

Cube Numbers

$1^3 = 1 \times 1 \times 1 = 1$
$2^3 = 2 \times 2 \times 2 = 8$
$3^3 = 3 \times 3 \times 3 = 27$
$4^3 = 4 \times 4 \times 4 = 64$
$5^3 = 5 \times 5 \times 5 = 125$

Written methods

Multiplication (Grid method)

26 x 5

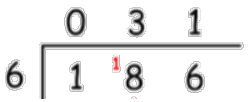
×	20	6
5	100	30

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 ÷ 6



6 doesn't divide into 1, so the 1 carries.
6 divides into 18, 3 times.
6 divides into 6, once.

Multiplying Integers

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

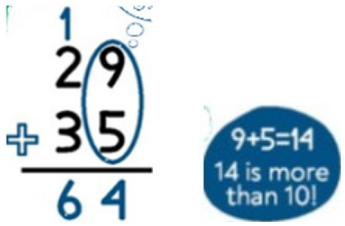
+ × + = + − × − = +

+ × − = − − × + = −

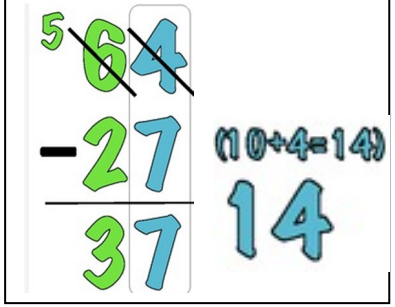
Adding Negative Numbers

+ 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

Column Addition



Column Subtraction



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

Algebra can be seen in many forms. The ones you will see most often are in an equation, expression, inequality and identity

Expression: x + 3

An expression is made up of terms and never has an equals sign

Equation: x + 3 = 4

An equation always has an equals sign

Inequality: x + 3 < 4

An inequality has either a <, >, ≤ or ≥ sign

Identity: 2x ≡ x + x

The two sides are always equal n matter the value of x

Inverse Operations

A pair of inverse operations are when two operations performed on a number (or variable), results in the original number (or variable)

+	⟷	−
×	⟷	÷
a^2	⟷	$\sqrt{a}$
a^3	⟷	$\sqrt[3]{a}$

Subject Terminology

Term	A term is either a single number or variable, or numbers and variables multiplied together.
Co-efficient	A number used to multiply a variable.
Simplify	Collect like terms (with same variable) to make an expression or equation simpler
Solve	To find a value (or values) we can put in place of a variable that makes the equation true.
Substitute	To replace variables with given values
Form	To represent problems algebraically
Expand	Multiply each term inside brackets by terms on the outside of the brackets.
Factorise	Factorising is the inverse of expanding brackets by finding what to multiply to get an expression.

Expanding and Simplifying Double brackets

To expand two binomials, we multiply each term by both terms in the other bracket

Expand (a + b)(c + d)

ac + bc + ad + bd

Example: Expand (a + 2)(a − 3)

×	a	+2
a	a^2	2a
-3	-3a	-6

$a^2 - a - 6$

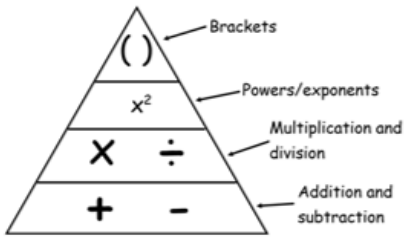
Expanding and Factorising

$3(x+2)$ ⇄ 3

×	x	$+2$
3	$3x$	$+6$

⇄ $3x+6$

Order of Operations



Solving equations

$4x + 7 = 31$

-7 -7

$4x = 24$

$\div 4$ $\div 4$

$x = 6$

Subject terminology	
Indices	Another name for powers, these can be positive, negative, integer or fractional.
Algebraic Fractions	Fractions which involve variables, either to solve or simplify
Re-arrange	Change the subject of an equation
Equations	A process which has an equal sign, used for solving
Simultaneous Equations	Two equations with two different variables, both of which can be solved
Elimination (simultaneous equations)	When there is a common term in both equations, these can be cancelled out
Substitution (simultaneous equations)	When there is a common variable in both equations, one can be substituted into the other
Variable	The letter which is used in algebra

General rule: $a^m \times a^n = a^{m+n}$

$2^5 \times 2^7 = 2^{5+7} = 2^{12}$ $\quad x^3 \times x^8 = x^{3+8} = x^{11}$

General rule: $a^m \div a^n = a^{m-n}$

$2^{14} \div 2^7 = 2^{14-7} = 2^7$ $\quad x^{10} \div x^8 = x^{10-8} = x^2$

General rule: $(a^m)^n = a^{m \times n}$

$(5^4)^2 = 5^{4 \times 2} = 5^8$ $\quad (4h^9)^3 = 4^3 \times h^{9 \times 3} = 64h^{27}$

Key Fact

Remember:

$p = p^1$

$p^0 = 1$

Negative indices: A negative power performs the reciprocal

General rule: $a^{-m} = \frac{1}{a^m}$

$3^{-1} = \frac{1}{3}$ $\quad \left(\frac{3}{4}\right)^{-1} = \frac{4}{3}$ $\quad 7^{-2} = \frac{1}{7^2} = \frac{1}{49}$ $\quad 2^{-3} = \frac{1}{2^3} = \frac{1}{8}$

Fractional indices: The denominator of a fractional power acts as a root. The numerator acts as a normal power.

General rule: $a^{\frac{m}{n}} = (\sqrt[n]{a})^m$

$27^{\frac{2}{3}} = (\sqrt[3]{27})^2 = 3^2 = 9$ $\quad \left(\frac{25}{16}\right)^{\frac{3}{2}} = \left(\frac{\sqrt{25}}{\sqrt{16}}\right)^3 = \left(\frac{5}{4}\right)^3 = \frac{125}{64}$

Simultaneous Equations

Solving through elimination

$3x + 8y = 23$

$x + 2y = 7$ (×3)

$3x + 6y = 21$ (×3) ☆

$2y = 2$

$y = 1$

☆ $3x + 6(1) = 21$

$3x + 6 = 21$

$3x = 15$

$x = 5$

Solving through substitution

① $3x + 2y = 21$

② $y = x + 3$

A) Substitute y and solve to find x.

① $3x + 2(x + 3) = 21$

$3x + (2x + 6) = 21$

$5x + 6 = 21$

$5x = 15$

$x = 3$

B) Input x to find y.

② $y = (3) + 3$

$y = 6$

Adding algebraic fractions

To add algebraic fractions

1) Find the common denominator of the fractions
2) Cross multiply and write as a single fraction
3) Expand and simplify any brackets

Example: $\frac{4}{x+3} + \frac{5}{x-2}$

$\frac{4}{x+3} + \frac{5}{x-2} = \frac{4(x-2) + 5(x+3)}{(x+3)(x-2)}$

Find a common denominator.

Write as a single fraction straight away.

$= \frac{4x - 8 + 5x + 15}{(x+3)(x-2)}$

$= \frac{9x + 7}{(x+3)(x-2)}$

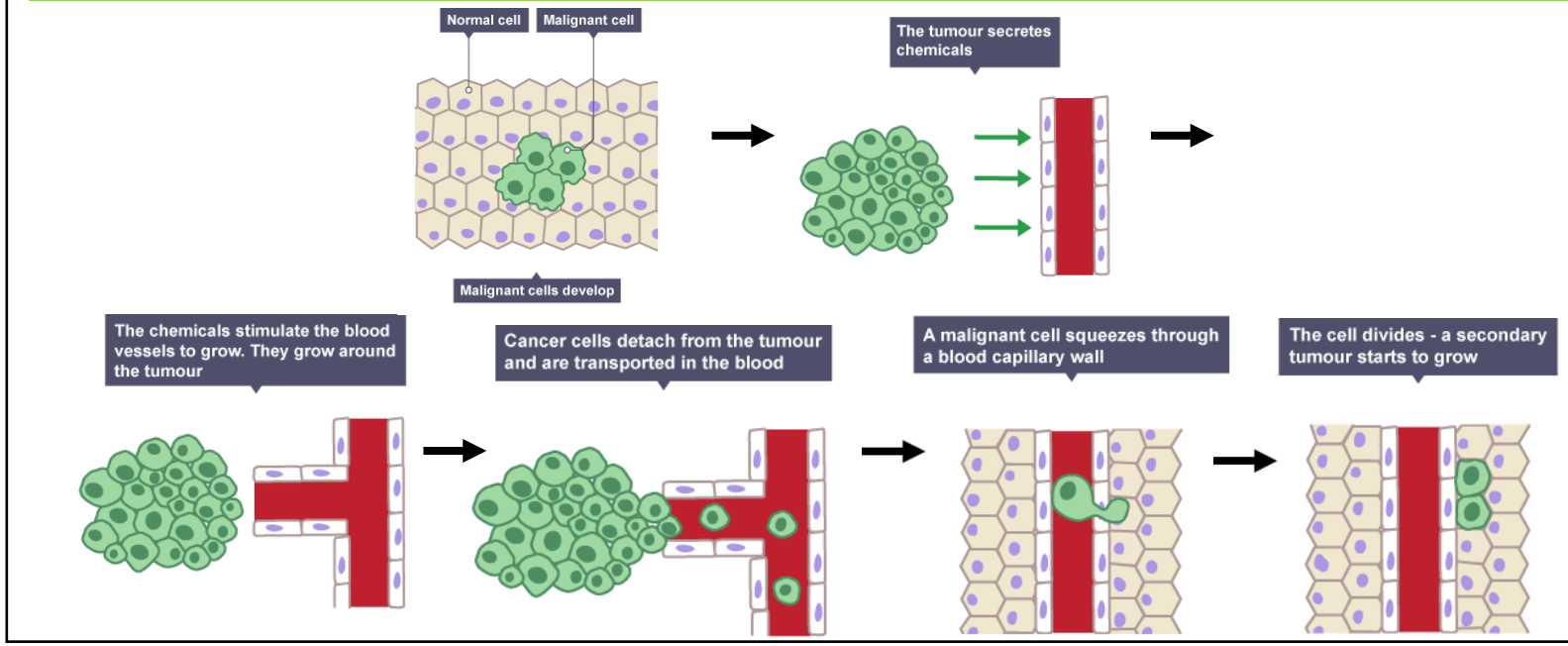
Paper 1 Subject: Science – Biology Topic: B7 Non communicable disease

Risk factors & causal mechanisms

Risk factor	Disease risk factor is linked to	Explanation of how risk factor may cause disease
Smoking	Lung disease, lung cancer and cardiovascular disease	Chemicals in cigarette smoke (such as tar and nicotine) damage the alveoli in the lungs and the endothelial lining of the arteries.
Obesity caused by a poor diet	Type 2 diabetes	Excess consumption of sugar as a result of a poor diet reduces the body's sensitivity to insulin
Consuming alcohol	Liver disease and impaired brain function	The breakdown of alcohol by cells of the liver produces substances which can be toxic to liver cells in high concentrations. The neurones of the brain are also damaged by alcohol, reducing brain function.
Exposure to carcinogens	Cancer	Exposure to ionising radiation (eg. X–rays) or certain chemicals can damage DNA in cells leading to uncontrolled cell division, causing cancer
Smoking and consuming alcohol when pregnant	Poor development of foetus (unborn baby)	Carbon monoxide in cigarette smoke reduces the amount of oxygen transported around the mother's body, reducing the oxygen delivered to the foetus. Substances in alcohol can impair the development of the brain in a foetus.

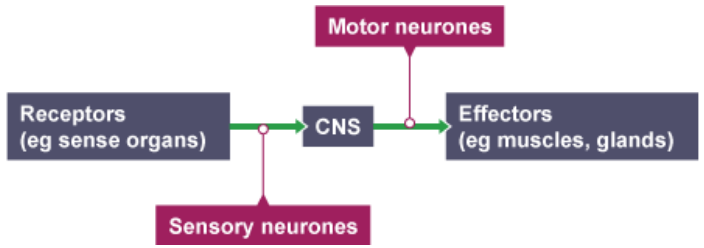
Subject Terminology	Definition
Non-communicable disease	A disease that is not spread by pathogens. For example cancer
Benign tumour	A tumour that cannot spread around the body.
Malignant tumour	A tumour that can spread around the body (cancer).
Carcinogen	A substance that causes cancer.
Stents	A small tube placed in a blood vessel used to keep the coronary arteries open
Statins	Drugs used to reduce blood cholesterol levels which slows down the rate of fatty material deposit.
Risk factor	Something that increases the likelihood of developing a disease
Casual mechanism	Where a direct link has been made between a risk factor and a disease
emphysema	Disease in which the walls of the alveoli break down, reducing the surface area for gas exchange in the lungs.

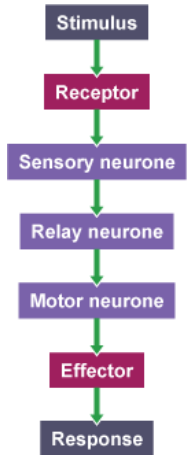
Malignant tumour cells are cancers. They invade neighbouring tissues and spread to different parts of the body in the blood where they form secondary tumours.



Paper 2 Subject: Science – Biology Topic: B10 The nervous system

Summary of how information flows from the receptors to the effectors in the nervous system





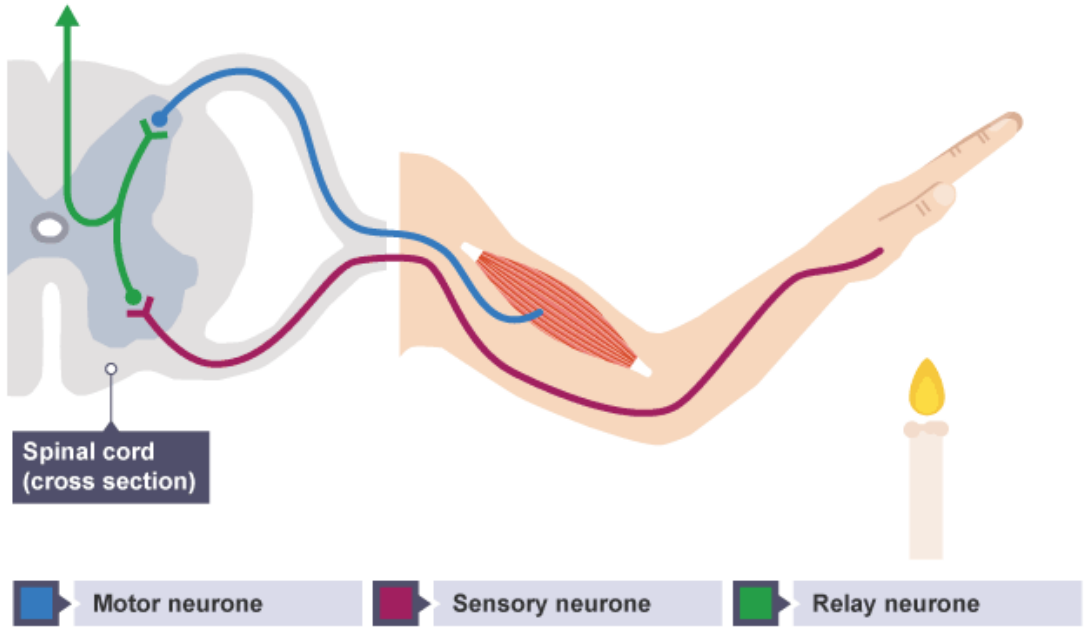
Sense organs and their stimulus

Receptors are groups of specialised cells. They can detect a change in the environment (**stimulus**) and produce electrical impulses in response. Sense organs contain groups of receptors that respond to specific **stimuli**.

Sense organ	Stimulus
Skin	Touch, temperature
Tongue	Chemicals (in food and drink, for example)
Nose	Chemicals (in the air, for example)
Eye	Light
Ear	Sound

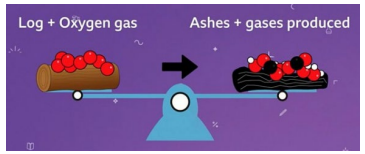
Subject Terminology	Definition
Homeostasis	The maintenance of a constant internal environment
Receptor	A cell that detects a stimuli
Stimuli	A change in the environment
Effector	A muscle or gland that causes a response
Central nervous system	The brain and spinal cord
Neuron	A nerve cell that carries electrical stimuli around the body.
Synapse	The gap between two neurones.
Hormone	A chemical messenger released by glands, that then travels through the blood stream.
Gland	An organ that releases hormones e.g. the pancreas.
Reflex action	Automatic and rapid response to a stimulus

Reflex action



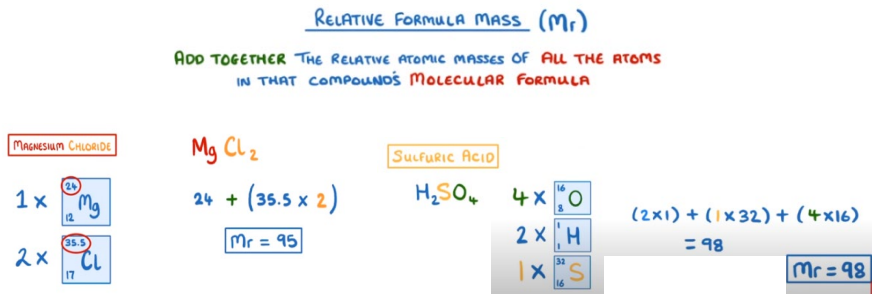
Conservation of mass

The law of conservation of mass
During chemical reactions or a change of state, no atoms are created or destroyed. The total mass of chemicals before and after a reaction remains the same.



Key Word	Definition
Relative formula mass (Mr)	The Mr of a compound is the sum of the relative atomic masses of the atoms in the numbers shown in the formula.
Relative atomic mass	A weighted average of the masses of the atoms of the isotopes compared to an atom of carbon 12
Concentration	A measure of the mass of a solute dissolved in a given volume of solvent
Limiting Reagent	The reagent which is used up first in a chemical reaction
Reagent in excess	The reactants that are not used up when the reaction is finished

Calculating relative formula mass



Calculating % Mass of an Element in a Compound

$$\%\ mass\ of\ element = \frac{A_r \times number\ of\ atoms\ of\ the\ element}{M_r\ of\ the\ compound} \times 100$$

Worked example: calculate the percentage by mass of calcium in calcium carbonate, $CaCO_3$

$A_rCa = 40$
$A_rC = 12$
$A_rO = 16$

STEP 1: WRITE DOWN THE RELATIVE ATOMIC MASSES OF EACH ELEMENT

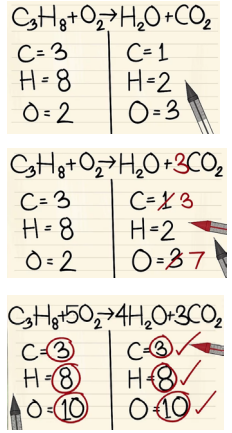
$$\%Ca = \frac{1 \times 40}{[40 + 12 + (3 \times 16)]} \times 100$$

STEP 2: INPUT THE VALUES INTO THE EQUATION AND SOLVE

%Ca BY MASS = 40%

Balancing equations

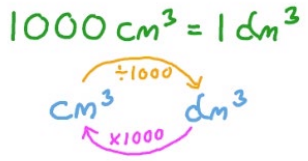
1. Write down your given equation
2. Write down the number of atoms per element.
3. Start with one element, use a coefficient to balance the element
4. Check the effect on all the elements in the equation
5. Keep changing coefficients until you have a balanced equation



Calculating concentration

Concentration = mass ÷ volume

Mass of the solute in grams **(g)**
Volume of the solvent in decimetres cubed (dm^3)
Concentration is grams per decimetres cubed (g/dm^3)



Volume is measured in decimetres cubed (dm^3) you will need to be able to convert between cm^3 and dm^3

Paper 1 Subject: Science - Chemistry Topic: C6 Electrolysis

Electrolysis cell

During electrolysis:

- Positively charged ions move to the negative **electrode** during electrolysis. They receive electrons and are **reduced**.
- Negatively charged ions move to the positive electrode during electrolysis. They lose electrons and are **oxidised**.

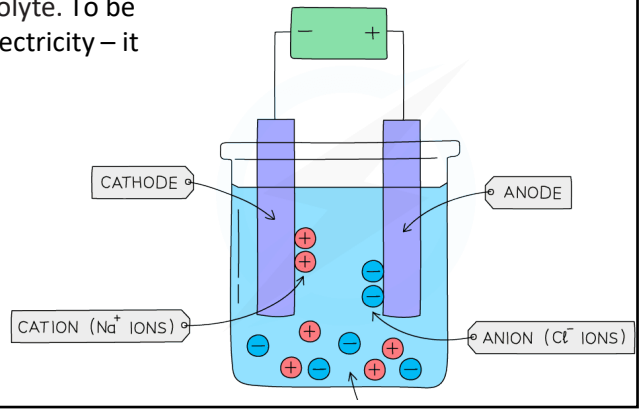
The substance that is broken down is called the electrolyte. To be an electrolyte, a substance must be able to conduct electricity – it needs to be molten or dissolved ionic substance

To remember the name of the electrodes:

- Positive is the
- Anode
- Negative
- Is the
- Cathode

Is it oxidation or reduction?

- Oxidation
- Is the
- Loss (of electrons)
- Reduction
- Is the
- Gain (of electrons)

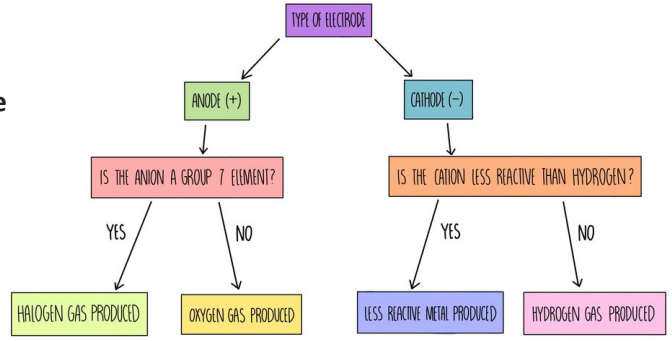


Subject Terminology	Definition
Electrolysis	The decomposition (breakdown) of a compound using an electric current
ionic compound	An ionic compound occurs when a negative ion (an atom that has gained an electron) joins with a positive ion (an atom that has lost an electron)
Electrolyte	A substance which, when molten or in solution, will conduct an electric current
oxidation	The gain of oxygen, or loss of electrons, by a substance during a chemical reaction.
reduction	The loss of oxygen, gain of electrons, or gain of hydrogen by a substance during a chemical reaction.
Charge	Property of matter that causes a force when near another charge. Charge comes in two forms, positive and negative.
anode	The positively charged electrode in electrolysis
cathode	The negatively charged electrode in electrolysis
molten	A term used to describe a liquid substance (eg rock, glass or metal) formed by heating a solid.
Aqueous solution	a solution in which the solvent is water
brine	a high-concentration solution of salt (NaCl) in water (H2O)

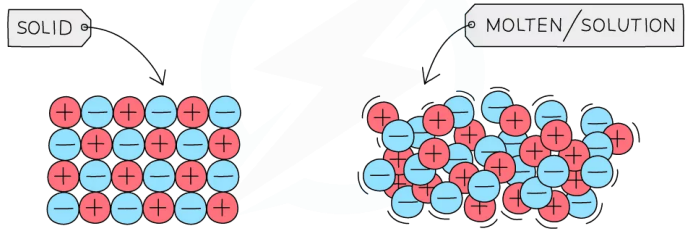
Predicting the products of electrolysis

Molten electrolytes are split into their **elements**:
•the **metal** is formed at the **negative electrode**
•the **non-metal** element is formed at the **positive electrode**

Electrolysing aqueous solutions of **ionic compounds** can be more complicated than electrolysing **molten** compounds, because the water molecules can provide hydrogen ions (H^+) and hydroxide ions (OH^-), in addition to the **ions** from the ionic compounds.



Only molten ionic substances or solutions can conduct electricity

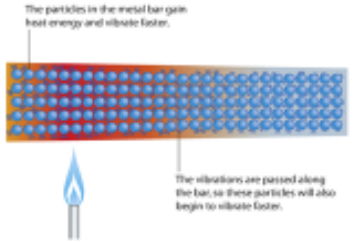


Particles in ionic compounds are in fixed position in the solid state but can move around when molten or in solution allowing them to conduct electricity.

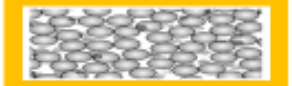
Paper 1 Subject: Science – Physics Topic: P2 energy transfer by heating

Energy transfer by conduction

When any substance is heated the particles in it gain energy and vibrate more. The particles bump (collide) into each other and pass their energy on



Conduction does not take place very well in **liquids**

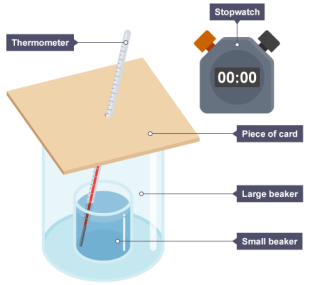


Conduction barely happens at all in **gases**

Conduction works best in **solids** because the particles are very close together. Most metals are solid.

Subject Terminology	Definition
Thermal conductivity	A measure of how well a material conducts energy when it is heated.
Emit	to release or radiate something
Specific heat capacity	the amount of energy needed to raise the temperature of 1kg of the material by 1°C.
Solar cell	a device converting solar radiation into electricity
Solar panel	A panel designed to absorb the sun's rays to heat water
dissipated energy	Energy that is transferred to a store which not 'not useful' therefore it is wasted or lost to the surroundings
Calculation for efficiency	Efficiency = useful energy output/ total energy input
Insulator	Material that does not allow charge or heat to pass through it easily.

Required practical - investigating methods of insulation



Method

1. Place a small beaker into a larger beaker.
2. Fill the small beaker with hot water from a kettle.
3. Put a piece of cardboard over the beakers as a lid. The lid should have a hole suitable for a thermometer.
4. Place a thermometer into the smaller beaker through the hole.
5. Record the temperature of the water in the small beaker and start the stopwatch.
6. Record the temperature of the water every 2 minutes for 20 minutes.
7. Repeat steps 1-6, each time packing the space between the large beaker and small beaker with the chosen insulating material.

Calculating efficiency

The energy efficiency for any energy transfer can be calculated using the equation:

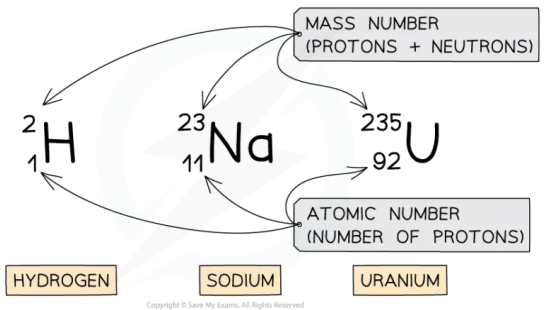
$$efficiency = \frac{useful\ output\ energy\ transfer}{total\ input\ energy\ transfer}$$

Efficiency may also be calculated using the equation:

$$efficiency = \frac{useful\ power\ output}{total\ power\ input}$$

Paper 1 Subject: Science – Physics Topic: P7 Radioactivity

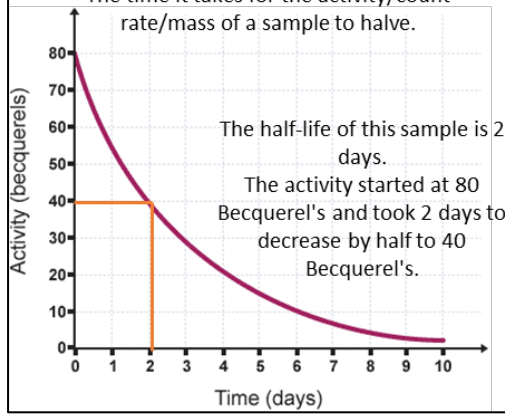
Nuclear Notation



Subject Terminology	Definition
Decay	The process of an unstable nucleus becoming more stable by emitting radiation.
Irradiated	an object that has been exposed to ionising radiation
Radioactive contamination	the unwanted presence of materials containing radioactive atoms on other materials
Ionising radiation	radiation emitted from unstable nuclei that can dislodge outer electrons from other atoms causing them to become ions.
Half-life	average time taken for the number of nuclei of the isotope (or mass of the isotope) in a sample to halve
Isotope	atoms with the same number of protons and different numbers of neutrons
Activity	the number of unstable atoms that decay per second in a radioactive source
Count rate	the number of counts per second detected by a Geiger counter

Half –life

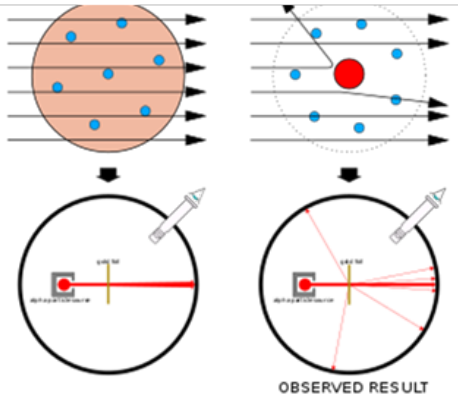
The time it takes for the activity/count rate/mass of a sample to halve.

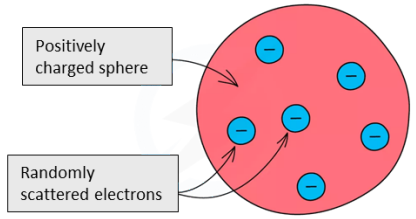


Rutherford Scattering Experiment

Rutherford's alpha scattering experiment
Disproved the plum pudding model

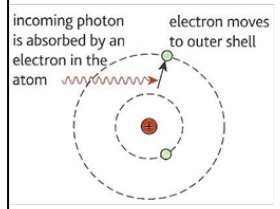
1. Alpha particles were fired at very thin gold foil
2. They expected the alpha particles to pass straight through because the positive charge was evenly distributed through the atom.
3. The actual result was that most went through the gold foil but some alpha particles were partially deflected, some particles bounced straight back.
4. They decided there must be something dense and charged in the centre of the atom (the nucleus) but the rest of the atom was empty space.





Plum Pudding Model

Ionisation vs Excitation



Excitation: an electron absorbs energy and moves to a higher energy level.

Ionisation: an electron is removed from the atom.

Properties of Ionising Radiation

Particle	What is it	Charge	Range in air	Penetration	Ionisation
Alpha (α)	2 protons + 2 neutrons	+2	Few cm	Stopped by paper or skin	High
Beta (β^-)	Electron	−1	1m	Stopped by few mm Aluminium	Medium
Gamma (γ)	Electromagnetic wave	0	Infinite	Stopped by thick lead or concrete	Low

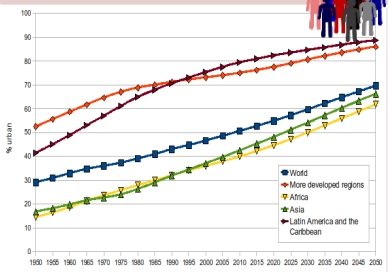
	Irradiation	Contamination
Description	Object is exposed to radiation but does not become radioactive	the unwanted presence of materials containing radioactive atoms on other materials
Source	Danger is from radiation emitted outside the object	Danger from radiation emitted within the object
Prevention	Prevented by using shielding, such as lead clothing	Prevented by safe handling of sources and airtight safety clothing
Causes	Caused by the presence of radioactive sources outside the body	Caused by inhalation or ingestion of radioactive sources

What is Urbanisation?

This is an increase in the amount of people living in urban areas such as towns or cities. In 2007, the UN announced that for the first time, more than 50 % of the world's population live in urban areas.

Where is Urbanisation happening?

Urbanisation is happening all over the word but in LICs and NEEs rates are much faster than HICs. This is mostly because of the rapid economic growth they are experiencing.



Causes of Urbanisation

Rural - urban migration (1) — The movement of people from rural to urban areas.

Push

- Natural disasters
- War and Conflict
- Mechanisation
- Drought
- Lack of employment

Pull

- More Jobs
- Better education & healthcare
- Increased quality of life.
- Following family members.

Natural Increase (2) — When the birth rate exceeds the death rate.

Increase in birth rate (BR)

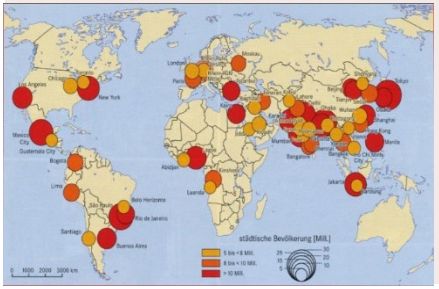
- High percentage of population are child-bearing age which leads to high fertility rate.
- Lack of contraception or education about family planning.

Lower death rate (DR)

- Higher life expectancy due to better living conditions and diet.
- Improved medical facilities helps lower infant mortality rate.

Types of Cities

Megacity — An urban area with over 10 million people living there.



More than two thirds of current megacities are located in either NEEs (Brazil) and LICs (Nigeria). The amount of megacities are predicted to increase from 28 to 41 by 2030.

Sustainable Urban Living

Sustainable urban living means being able to live in cities in ways that do not pollute the environment and using resources in ways that ensure future generations also can use then.

Water Conservation

This is about reducing the amount of water used.

- Collecting rainwater for gardens and flushing toilets.
- Installing water meters and toilets that flush less water.
- Educating people on using less water.

Energy Conservation

Using less fossil fuels can reduce the rate of climate change.

- Promoting renewable energy sources.
- Making homes more energy efficient.
- Encouraging people to use energy.

Creating Green Space

Creating green spaces in urban areas can improve places for people who want to live there.

- Provide natural cooler areas for people to relax in.
- Encourages people to exercise.
- Reduces the risk of flooding from surface runoff.

Waste Recycling

More recycling means fewer resources are used. Less waste reduces the amount that eventually goes to landfill.

- Collection of household waste.
- More local recycling facilities.
- Greater awareness of the benefits in recycling.

Unit 2a

AQA

Urban Issues & Challenges

Sustainable Urban Living Example: Freiburg

Background & Location

Freiburg is in west Germany. The city has a population of about 220,000. In 1970 it set the goal of focusing on social, economic and environmental sustainability.

Sustainable Strategies

- The city's waste water allows for rainwater to be retained.
- The use of sustainable energy such as solar and wind is becoming more important.
- 40% of the city is forested with many open spaces for recreation, clean air and reducing flood risk.

Integrated Transport System

This is the linking of different forms of public and private transport within a city and the surrounding area.

Brownfield Site

Brownfield sites is an area of land or premises that has been previously used, but has subsequently become vacant, derelict or contaminated.

Traffic Management

Urban areas are busy places with many people travelling by different mode of transport. This has caused urban areas to experience different traffic congestion that can lead to various problems.

Environmental problems

- Traffic increases air pollution which releases greenhouse gases that is leading to climate change.

Economic problems

- Congestion can make people late for work and business deliveries take longer. This can cause companies to loose money.

Social Problems

- There is a greater risk of accidents and congestion is a cause of frustration. Traffic can also lead to health issues for pedestrians.

Congestion Solutions

- Widen roads to allow more traffic to flow easily.
- Build ring roads and bypasses to keep through traffic out of city centres.
- Introduce park and ride schemes to reduce car use.
- Encourage car-sharing schemes in work places.
- Have public transport, cycle lanes & cycle hire schemes.
- Having congestion charges discourages drivers from entering the busy city centres.

Traffic Management Example: Bristol

In 2012 Bristol was the most congested city in the UK. Now the city aims to develop it's integrated transport system to encourage more people to use the public transport. The city has also invested in cycle routes and hiring schemes.

Greenbelt Area

This is a zone of land surrounding a city where new building is strictly controlled to try to prevent cities growing too much and too fast.

Urban Regeneration

The investment in the revival of old, urban areas by either improving what is there or clearing it away and rebuilding.

Urban Change in a Major UK City: London

Location and Background

London is a city in the south-east of the UK. It has a population of 10 million people. The city was founded by the Romans and grew dramatically during the industrial revolution. Docks and ports traded around the world.

Migration to London

During the industrial revolution, the population dramatically increased with people migrating from nearby rural communities.

With attraction of making money and getting a job people came from all over the world. Lots of people from India, Nigeria, Jamaica.

One of the most multicultural places on the planet.

Recent migration from Eastern Europe. Due to free movement from the EU.

City Challenges

Social: Urban deprivation, inequalities in housing, education, health, employment. House prices too high, unequal incomes, children do not get equal exam grades, people in wealthy areas live longer than those in poor areas. Different cultures do not always mix.

Economic: Employment rate is above national average 10% - major issue. Lack of integration between cultures.

Environmental: Urban sprawl has led to increased pressure and decline of greenfield sites around the city. Dereliction – lots of empty brownfield sites. Waste disposal and air pollution – lots of traffic. Waste – lots of waste, incineration and landfill, developing more recycling.

City's Importance

The city enjoys a large sporting heritage with famous athletes and football clubs.
• London is the centre of UK trade and a hub of financial trade
• London attracts graduates from all over the UK and the world to work in it s many expanding businesses. UK's wealthiest city
• Major UK transport hub – airports etc

City's Opportunities

Social: Cultural mix, lots of recreation facilities and tourist attractions. Lots of bars and restaurants and theatres.

Economic: Major world financial centre, highly skilled workforce. Likely to be employed in managerial/professional roles, which earn more money.

Environmental: Urban greening –increase the % of green spaces in a city. Rooftop gardens - better quality of life, reduce flooding, wildlife habitats. Lots of parks for walking and a better environment

London Olympic Regeneration Projects

Why was it needed: Socially deprived area of Newham Lea Valley was a former industrial area now in decline Lack of school spaces Idea to improve the area through regeneration – reuse the land, new homes, improve infrastructure and buildings

Success

Socially – Athletes village used for new housing estate/new school/unemployment fell
Economically: new tube station/improved infrastructure/9bn of investment
Environmentally- new parkland, improve water quality River Lea

Problems

Socially – new rents too high, people moved out of their homes to make the new housing
Economically – 5bn over budget – could be spent on deprivation Environmentally – much wildlife relocated, 3.3 mill tonnes of CO2

Urban Change in a Major NEE City: Lagos Case Study

Location and Background

Lagos is located in the southwest of Nigeria on the coast of the Gulf of Guinea. It was the capital of Nigeria until 1991.

Migration to Lagos

The city was initially a fishing village but developed into a thriving colonial sea port. Since 1970s and the oil boom thousands of people migrate daily.

Rural to urban migration has accounted for most of this growth in the last 50 years due to poor rural services, low wages, land shortages and climate change. People come from within Nigeria and from surrounding countries.

60% live in slums
• Most in Lagoon area e.g. Makoko
• Lack basic facilities, communal toilets, waste put into the lagoon causing disease. 3km to communal water point
• Crime in the slums an issue
• Eco Atlantic – New city of 250, 000

City Challenges

Shanty towns are established around the city, typically on unfavourable land, such as swamps and the lagoon
• There are a severe shortage of housing, schools and healthcare centres available.
• The city suffers from a high crime rate that includes gun/gang violence and drugs.
• The rapid urbanisation causes dangerous levels of pollution and traffic congestion.
• Large scale social inequality, is creating tensions between the rich and poor.

City's Importance

Has 80 of industry in Nigeria
• Accounts for 25% GDP
• 80% of imports and 70% of exports pass through the docks
• Media centre and huge film industry
• One of highest standards of living in Africa
• Hosted African cup of Nations tournament
• ICT centre of West Africa
• Home to most financial institutions

City's Opportunities

More schools and universities • Growing industry – fashion, finance and film (Nollywood)
• Healthcare available
• 68% have secondary education (40% of people in rural areas don't get a primary education)
• Above average healthcare, education and employment – 9 years education, 53 years life expectancy

2 power stations planned.
• Wealthy houses and businesses have generators
• Rich have pipes water
• Rest use public taps, boreholes or buy from vendors

More jobs in Lagos in both the formal and informal economy • Evo Atlantic – new financial hub – 150, 000 jobs • Nollywood film indu

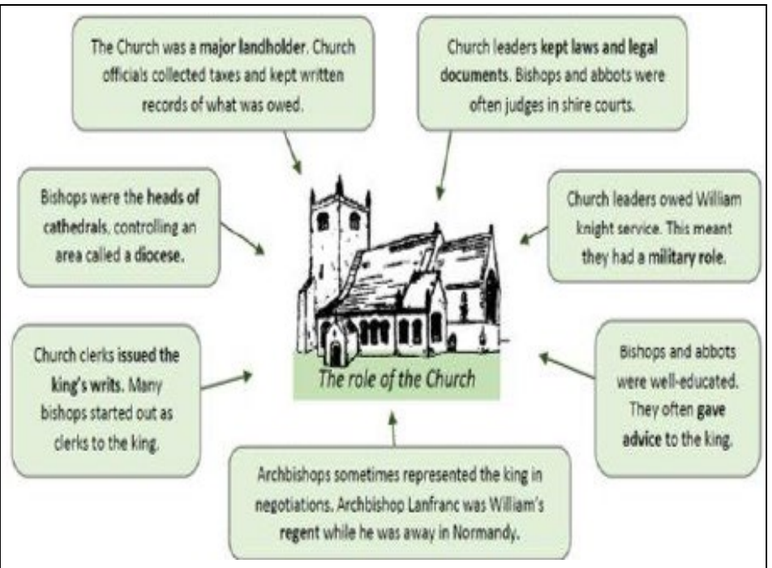
Sustainable Transport System

The authorities have introduced a Bus Rapid Transport System
• A separate bus lane is used
• 200,000 people are transported every day to the CBD on Lagos Island
• This will be incorporated into an integrated transport system linking buses, taxis (danfos), ferries and railways.
• In 2016 a new light railway opened and further rail routes are planned

The Church

All people in Europe at this time were Catholic and the Head of the Catholic Church is the **Pope.**
People in Norman times had strong religious beliefs. Most truly believed that they would go to **Heaven or Hell** when they died and the the Pope was God's representative on Earth.
The Church was also very wealthy and owned a lot of land.
This gave the church a lot of power and influence over people's lives.

William had a close relationship with Pope Alexander II who was concerened about CORRUPTION within the Church in England:
Pluralism: many clergy had more than one job (role)
Simony: Positions sold to the highest bidder.
Nepotism: Positions given to friends and family
Many clergy were married evn though they had taken a vow of **Celibacy**.



The Last Anglo-Saxon Archbishop of Canterbury was **Stigand**. He was replaced in 1070 by the Norman Lanfranc. **Stigand** was a **PLURALIST** – he was bishop of Canterbury and Winchester so got the land and money from both roles. He was also accused of **SIMONY**.

TECHNICAL VOCABULARY	
Monastery/Monk	A building occupied by Monks (male) - a man who devotes their life to God and normally lives in isolation from society.
Convent/ Nun	A building occupied by Nuns (female) – a woman who devotes their life to God and normally lives in isolation from society.
Diocese	An area overseen by a bishop and served by a cathedral or church
Parish	An area overseen by a priest and served by a local church
Romanesque	The style in which Normans built cathedrals
Penance	Making payment for sin either through money or actions
Excommunicate	To be officially removed from the Catholic Church by the Pope
Pious (piety)	Being respectful to God and being sincerely holy
Benedictine	Following the teachings of St Benedict, a 6th century monk.
Vernacular	A local language, spoke by ordinary people.
The Investiture Controversy	Arguments between Monarchs and the Pope over who could appoint senior members of the Church (during rule of Henry I)
Cluniac	An order of Monks who aimed to reform the Church

Lanfranc's Reforms

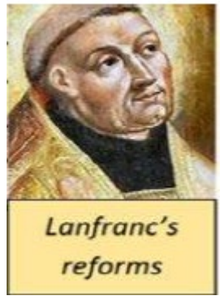
Lanfranc was an Italian monk who had run St. Stephen's monastery in Normandy.
He was heavily involved in changes to the Church.
Within about 50 years, every English church and cathedral had been rebuilt in Norman style.
Although most priests were still Anglo-Saxons, after 1070 there was only one Anglo-Saxon bishop left (Wulfstan of Worcester).

Williams change to the Church

Bishops were replaced with Normans
Normans stole wealth from places such as Durham.
New cathedrals were built in new towns.
Changes helped William Control – people were scared to go against the Church in case they went to hell!

Lanfranc's Reforms

- He wanted priests to live spiritual lives.
- He banned marriage and made celibacy (no sex) compulsory for priests.
- From 1076, priets were tried in special church-only bishops' courts.
- There were more monasteries – places dedicated to a spiritual life.
- Lanfranc introudced Norman guidelines for following and creating new laws.
- Anglo-Saxon catherals in rural locations were knocked down and rebuilt in market towns (e.g Thetford to Norwich)
- There were more archdeacons (below bishops but above priests). They looked after church courts.



The Church was "Normanised":

Norman bishops and archdeacons influenced the messages people heard about the King and God. A quarter of all land was held by the Church. Putting Normans as Bishops and archdeacons reduced the risk of Anglo-Saxon rebellions.

Pope Alexander II	William and William II	Archbishop Lanfranc	Archbishop Anselm	Pope Gregory	English Cluniac
Granted William of Normandy the Papal Banner to fight in Hastings. After the battle he ordered William to pay penance for the killing. William built Battle Abbey which was finshed in 1095.	William and William II used the church for their gain (stealing from churches). Example: one monk melted down a chandelier for £40 (£35,000 in today's money). However these were often written by Anglo-Saxons.	A Monk and then an abbot, who advides William I on religious affairs. William made him the Archbishop of Canterbury in 1070.	A Monk and then an abbot, who became Archbishop of Canterubry in 1093. He had many arguments with William II and Henry I about their abuses of the Church. Put Church before his King.	From 1073 – 1085 he made a number of reforms to the Church, including removing corruption and ensuring the Church was independent from the Monarchy.In 1078 he banned Kings from appointing ishops and abbots in order to keep independence.	Brought to England in 1077 by William de Warenne. By 1135 there were 24 Cluniac monasteries in England. These were the spiritual arm of the military conquest. New religious houses built next to castles to demonstrate the Norman domination had the blessing of God.

Norman England

Historical Substantive Concepts

Monarchy

William the Conqueror was supported by the Pope for his conquest of England. William the Conqueror was successful in his quest to become King of England and held the position until 1087. Upon his death his son, William II succeeded him, however he had a complex relationship with the Pope and his Archbishop Anselm over abuses of the Church. This continued with Henry I who succeeded William II.

Religion

All people in Europe during the Norman period was Catholic and the head of the Catholic church is the Pope. He wanted to reform Religion in England as he believed it war corrupt. He supported William's invasion by giving him the Papal Banner. Archbishop Lanfranc set about Reforming the church in England.

-

Invasion

The Norman conquest of England can be viewed as a Religious invasion as the Pope granted William of Normandy the Papal Banner. This meant many soldiers were drawn to William to fight for God in a "holy war".

Political Reform

Norman bishops and Archdeacons influenced the messages people heard about the King and God. A quarter of all land was held by the Church, which gave these people lots of power and control.

Ideology

The Normans wanted to remove corruption from within the Church in England. This meant the church underwent many reforms to bring them more into line with European religion.

Conflict

The Battle of Stamford Bridge and the Battle of Hastings both occurred in 1066.
These two battles determined who would be King of England.

Revolution

Once he became King of England, William faced many revolutions from the Anglo-Saxons. Some of the most notably are as follows:
The Revolt of Edwin and Morcar 1068
Edgar Aethling Rebellions in the North 1069
The Harrying of the North1069-70
Hereward the Wake and rebellion at Ely 1070 - 1071
The Revolt of the Earls 1075

Tax & Economy

The Norman Church would charge penance for people to remove their sins. This was payment throughout either money or actions, which meant the Church would be very wealthy. Many individuals left the Church money and land after they died so they could be prayed for in the afterlife.

Half-Term 2 Year 10 French Topic : À l'école

Opinions – Week 1						
Opinion	**Infinitive**		**Because**	**In my opinion**	**I think that it is**	**Infinitive**
Ça me dérange de = I get annoyed Je suis fasciné par = It fascinates me Je suis amusé par – I have fun Je suis déçu par – It disappoints me Je m'en fiche de – I'm not bothered about J'apprécie = I appreciate Je préfère – I prefer Il vaut mieux – it's worth J'en ai marre de – I'm fed up of Je suis d'accord avec – I am in favour of	étudier = to study faire = to do aller = to go assister à = to attend	l'anglais = English le dessin = art l'espagnol = Spanish l'allemand = German le français = French les études commerciales = business studies le théâtre = drama la cuisine = food technology la biologie = biology la chimie = chemistry la physique = physics l'éducation religieuse = RE l'informatique= ICT l'histoire = history la musique = music la géographie = geography l'éducation physique = PE la technologie = technology les sciences= science les maths = maths à l'école = to school aux cours = to lesson	parce que car	à mon avis selon moi pour moi en ce qui me concerne	je pense que c'est je crois que c'est je considère que c'est il me semble que c'est	ennuyeux(se) = boring bon(ne) = good amusant(e) = fun obligatoire = compulsory divertissant(e) = entertaining éducatif(ve) = educational génial(e) = great intéressant(e) = interesting passionnant(e) = exciting important(e) = important facile = easy utile = useful inutile = useless difficile = difficult phénoménal(e) = great fantastique = fantastic

Week 2 – Present tense			
Days of the Week	**Verb**	**Time expression**	**NOUN**
Lundi Mardi Mercredi Jeudi Vendredi Samedi Dimanche	J'étudie = I study Nous étudions = We study	toujours = always presque toujours = almost always normalement = normally souvent = often quelquefois = sometimes parfois = sometimes rarement = rarely ne… jamais = never	à la bibliothèque = in the library beaucoup de matières = lots of subjects
	J'écoute = I listen Nous écoutons = We listen		au professeur = to the teacher de la musique = music
	Je parle = I speak Nous parlons = We speak		avec mes amis = with my friends avec mes copains = with my friends
	Je regarde = I watch Nous regardons = We watch		un vidéo = a video
	Je lis = I read Nous lisons = We read		un livre = a book à la bibliothèque = in the library
	Je mange = I eat Nous mangeons = We eat		à la cantine = in the canteen un sandwich = a sandwich
	Je bois = I drink Nous buvons = We drink		en classe = in class à la laboratoire = in the laboratory l'eau minérale = water
	J'écris = I write Nous écrivons = We write		dans mon cahier = in my exercise book dans mon agenda = in my planner

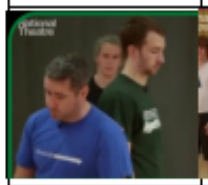
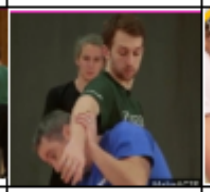
Past tense – Imperfect and Perfect Week 3						
Time Expression	**Verb**	**Noun**	**Connective**	**Verb**	**Qualifier**	**Adjective**
Hier = Yesterday Avant-hier = The day before yesterday Hier matin = Yesterday morning Hier soir = Yesterday evening La semaine dernière = Last week Le week-end dernier = Last weekend L'année dernière = Last year Il y a deux mois = Two months ago	j'ai étudié = I studied	le français = French l'anglais = English les maths = Maths	et = and mais = but cependant = however pourtant = however en revanche = on the other hand toutefois = however néanmoins = nevertheless	c'était = it was j'ai trouvé que c'était = I found that it was j'ai pensé que c'était = I thought that it was j'ai cru que c'était = I believed that it was j'ai consideré que c'était = I considered that it was ce n'était pas = it was not	trop = too très = very un peu = a bit assez = quite vraiment = really extrêmement = extremely	drôle = funny amusant(e) = fun (dés)agréable = (un)pleasant ennuyeux(se) = boring ambitieux(se) = ambitious embêtant(e) = annoying rapide = fast lent = slow cool = cool génial = great fantastique = fantastic reposant = relaxing merveilleux = great animé = lively difficile = difficult facile = easy divertissant = entertaining
	je voudrai être = I will want to be	médecin = a doctor avocat = a lawyer pompier = a firefighter agent de police = a police officer professeur = a teacher				
	j'ai parlé = I spoke	avec mes amis = with my friends avec le professeur = with the teacher				
	je suis allé = I went	à l'école = to school à la récré = to break				
Lundi = On Monday Mardi = On Tuesday Mercredi = On Wednesday Jeudi = On Thursday Vendredi = On Friday Samedi = On Saturday Dimanche = On Sunday	j'ai bu = I drank	de l'eau minérale = water de la limonade = lemonade				
	j'ai écrit = I wrote	dans mon agenda = in my planner dans mon cahier = in my exercise book				
	j'ai mangé = I ate	un sandwich = a sandwich un pain au chocolat = chocolate croissant				
	j'ai porté = I wore	mon uniforme scolaire = my school uniform				

Future Tense – If Clauses Week 4						
If clause starter	**Verb**	**Noun**	**Connective**	**In my opinion**	**I think that it would be**	**Adjective**
Si j'ai beaucoup d'argent = If I have a lot of money Si j'ai assez d'argent = If I have enough money Si j'ai de la chance = If I am lucky Si j'ai l'occasion = If I have the opportunity Si je peux = If I can Si j'ai le choix = If I have the choice Quand je serai plus âgé(e) = When I am older	j'irai = I will go	à l'université = to university au lycée = to college	parce que car puisque	à mon avis selon moi pour moi en ce qui me concerne	je pense que ce sera je considère que ce sera je crois que ce serait il me semble que ce serait	génial = great fantastique = fantastic reposant = relaxing merveilleux = great animé = lively difficile = difficult facile = easy divertissant = entertaining amusant(e) = fun (dés)agréable = (un)pleasant ennuyeux(se) = boring ambitieux(se) = ambitious embêtant(e) = annoying important = important
	je voudrai être = I will want to be	médecin = a doctor avocat = a lawyer pompier = a firefighter agent de police = a police officer professeur = a teacher				
	je travaillerai = I will work	à l'étranger = abroad				
	je ferai = I will do	un stage = a work experience placement un emploi d'été = a summer job				
Si j'avais beaucoup d'argent = If I had a lot of money Si j'avais assez d'argent = If I had enough money Si j'avais de la chance = If I was lucky Si j'avais l'occasion = If I had the opportunity Si je pouvais = If I could Si j'avais le choix = If I had the choice Quand je serai plus âgé(e) = When I am older	j'irais = I will go	à l'université = to university au lycée = to college				
	je voudrais être = I will want to be	mécanicien = a mechanic maçon = a builder infirmier = a nurse facteur = a delivery driver plombier = a plumber				
	je travaillerais = I will work	à l'étranger = abroad				
	je ferais = I will do	un stage = a work experience placement un emploi d'été = a summer job				

Year Subject: Drama Topic: Practitioners- Frantic Assembly

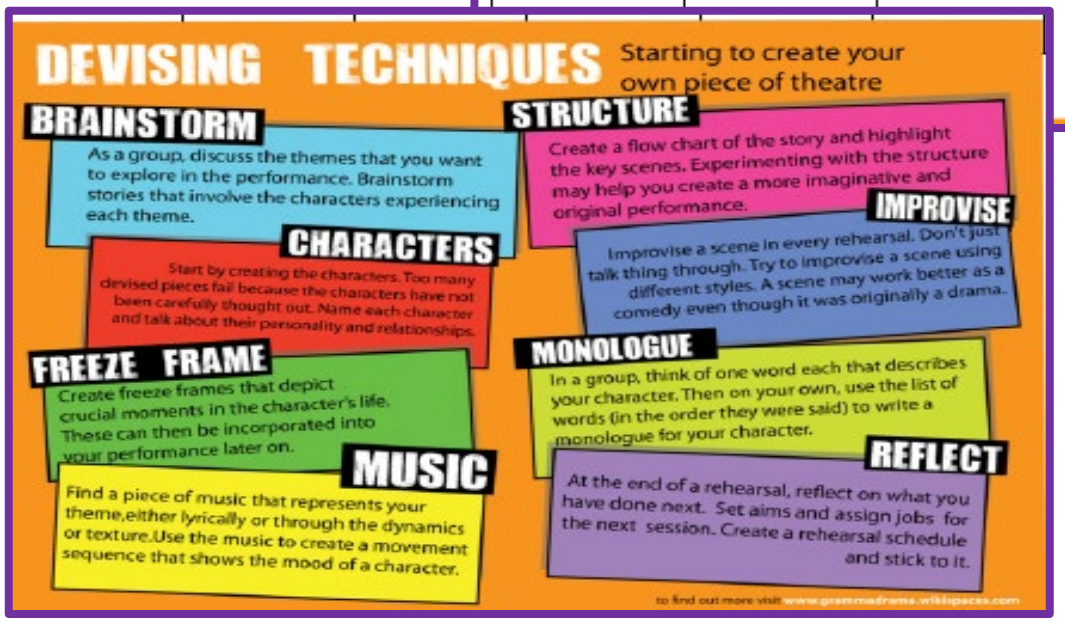
About Frantic Assembly

- Formed in 1994, Frantic Assembly's beliefs are built on the notion of collaboration. There is a great sense of ensemble work evident in all that they do.
- They aim to make their work accessible.
- Frantic Assembly is one of UK's leading contemporary theatre companies producing thrilling, energetic and uncompromising theatre constantly attracting new theatre.

Round	By	Through	Push Hands	Fluff	Chair Duets
					
The term ROUND is chosen to represent any move that involves passing closely ROUND the body of the partner	BY comes after the first two moves. The space between A & B is 'squeezed out'. A or B 'slots in' to stand closer BY their partner	THROUGH is the idea of passing through the upper body / arms of the partner	The person with their hand on top is in control, gently leading their partner around the space, trying to keep their hands flat and the pressure constant. You should take your partner on a journey exploring all levels.	Partners sit opposite knee to knee. A choose three ways to adjust B's appearance. B choose three ways to adjust A's appearance. Continue to add more moves, and avoid a predictable rhythm	Partners sit in chairs, both facing forward. Partners take turns placing their hand on to their partner or moving their partner's hand, swapping and adding to the sequence. Repeat until the moves are clear and memorised.

Subject Terminology

Devising	Creating an original piece of theatre
Physical theatre	Using the body and movement to express ideas onstage (ie—through movement, mime, gesture, dance, etc.)
Theatre Practitioner	A person or theatre company that creates practical work or theories to do with performance and theatre.
Structure	The order in which action and scenes are placed in a play.
Exploratory Strategy or Technique	Used to explore and deepen understanding of the drama you create; ie through understanding of characters, exploration of scenes, and experimenting with characterisation.



In their own words…
Frantic Assembly creates thrilling, energetic and unforgettable theatre. The company attracts new and young audiences with work that reflects contemporary culture. Vivid and dynamic, Frantic Assembly's unique physical style combines movement, design, music and text.

Quick Fire Facts!

1. Physical Theatre company
2. They create work which reflects modern-day culture
3. Contemporary
4. Vivid and dynamic
5. Performances include movement, design, music & text
6. Led by Artistic Director, & co-founder, Scott Graham
7. Most famous production: 'Curious Incident of the Dog in the Night-time'

Year 10 Subject: Drama Topic: Practitioners- Brecht

1. **Bertolt Brecht** was a German theatre practitioner. He made and shaped theatre in a way that had a huge impact upon its development.

Many of his ideas were so revolutionary that they changed the theatrical landscape forever.

Epic theatre was designed to appeal more to the audiences' reason than its emotions, therefore excluding sympathy and identification with the drama being presented on stage. He wanted to alienate the audience.

Subject Terminology	
Gestus	Gestus can be gesture, movement, stance or vocal. It is used to represent how a character is feeling or to represent their attitude.
Spass	Brecht wanted his plays to be fun. He believed that even though his plays were serious they could still be fun. Hence Spass was introduced. Spass is a German word which translated means joke/jest.
Style	Is the distinctive way in which writers, actors and directors do things.
Direct address	An actor speaks directly to the audience.
Multi role	Actors perform more than one character in a play and will change costumes in front of the audience to show this is taking place.
Ensemble	An approach to **acting** that aims for a unified effect achieved by all members of a cast working together on behalf of the play, rather than emphasizing individual performances.

2. Brecht developed a style of theatre called **Epic Theatre**
This style of theatre focuses upon socio-political issues. Epic Theatre aims to present an argument and make the audience think rather than just simply be entertained. Brecht once said that audiences "hang up their brains with their hats" when they enter the theatre. He also said "Change the world it needs it".

Epic theatre is a theatrical movement arising in the early to mid-20th century from the theories and practice of a number of theatre practitioners who responded to the political climate of the time through the creation of a new political theatre.

3. Epic Theatre was also known as **Dramatic Theatre** as it has a linear narrative which means its events happen in chronological order. Epic theatre often has a fractured narrative that is non-linear and jumps about in time.

4. Alienation Technique: Montage

A montage is a series of freeze frames, images or scenes put together in no particular order.
Often music is played over the top.

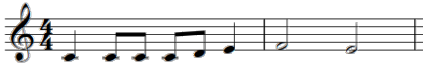
He used placards (holding up signs) and stepping out of character to stop the audience connecting (narrative speech or speaking in the third person).

5. The Alienation Effect – was Brecht's technique that was designed to distance the audience from emotional involvement in the play through jolting reminders of the artificiality of the **theatrical** performance. Displace Realism and to show up the hidden agenda of the **theatre** of the time. Alienation Effect was originally known as: Verfremdungseffkt.

6. The Fourth Wall: Brecht definitely wanted his audience to remain interested and engaged by the drama otherwise his message would be lost. Epic theatre **breaks the fourth wall**, the imaginary **wall** between the actors and audience which keeps them as observers.

TEXTURE

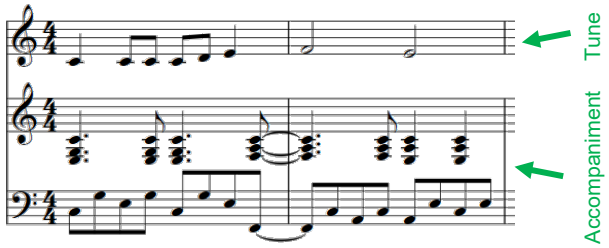
Monophonic
Music with only one part (one note at a time).



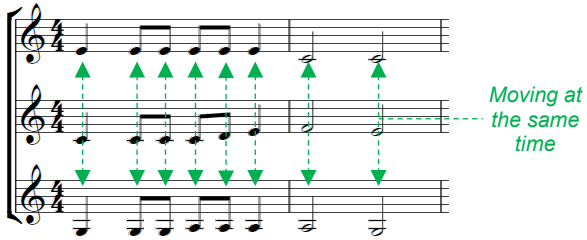
*You can have as many players or singers as you want on the same part so long as it is the only part. No chords!

Antiphonal
Two groups of musicians play/respond to each other from two different performing positions.

Melody & Accompaniment
A melody (tune) plus some accompanying chords or ideas.

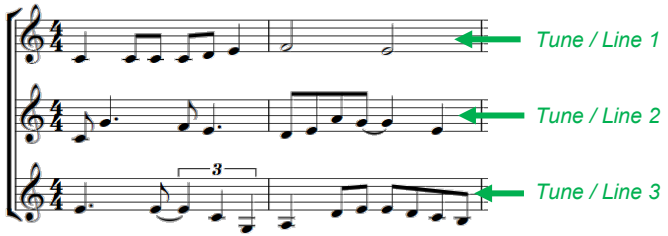


Homophonic
All parts move in chords at the same time.



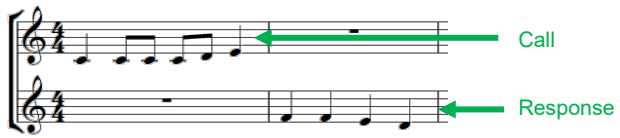
*Homo-phonic = same-sound… they have the same rhythm

Polyphonic
Several (2 or more) independent lines of music.

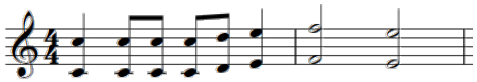


*Poly-phonic = many-sounds… several (two or more) different tunes.

Call And Response
One idea played/sung and then another performer(s) responding.

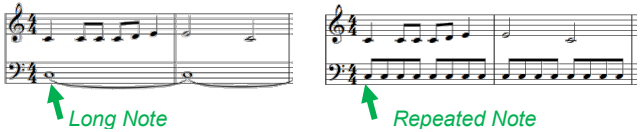


Octaves
When parts move together, an octave apart.

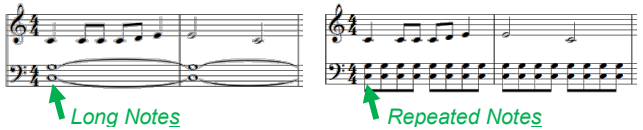


*Same note name but different pitch.

Pedal
A long or repeated note – *usually in the bass.*



Drone
Long or repeated notes – *usually a 5th apart.*



What Is The Instrument's Role

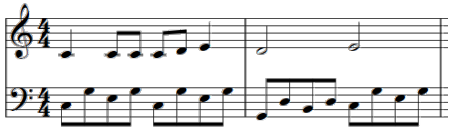
Melody – The tune.

Accompaniment – The parts supporting the tune.

Countermelody – A second melody that fits with the main tune.

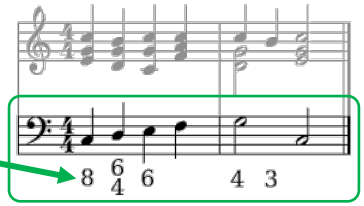
Bass Line – The lowest sounding part.

Alberti Bass
Accompaniment found mainly in the left hand part of piano music.
Don't play all three notes of the triad together; break them up into four equal notes. Usually lowest, highest, middle, highest.



Why doesn't Mr Edwards like playing an Alberti Bass? It gives him the EBGBs.

Basso Continuo
The part given to instruments in The Baroque Period that played the bass line and chords, accompanying the melody, using figured bass.



*Harpsichord, bass viol, organ, lute…

JS Bach: Badinerie

Form and structure:

The piece is in **Binary** form (**AB**).

Section A is 16 bars long.

Section B is 24 bars long.

Each section is repeated (**AABB**).

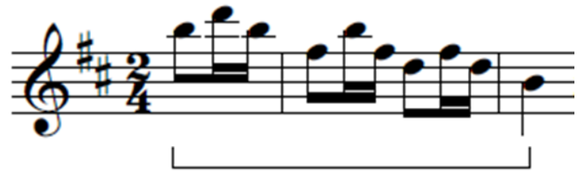
Harmony:

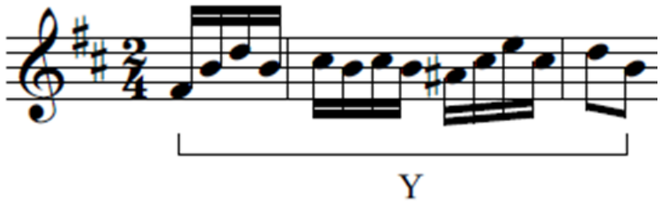
Diatonic; mixture of root position and inverted chords; uses V7 chords and a Neapolitan sixth chord.

Imperfect and perfect cadences are clearly presented throughout. Both sections end with a **perfect cadence**.

Melody:

The movement is based on **two musical motifs**.





Both motifs begin with an **anacrusis**. Motif X is entirely **disjunct** whilst motif Y **combines disjunct and conjunct** movement.

Typical **ornaments and compositional devices** of the period are used including **trills, appoggiaturas** and **sequences**.

Dynamics:

Mostly ***forte*** throughout, although no markings appear on the score.

On some recordings, **terraced dynamics** (sudden changes) are included.

Metre and rhythm:

Simple duple time – 2/4 – with two crotchet beats in every bar.

Uses **ostinato rhythms** which form the basis of two short musical ideas (X and Y), consisting almost totally of **quavers and semi-quavers**.

Background details:

Composed by **Johann Sebastian Bach** (1685 – 1750), one of the main composers of the **Baroque** era in music.

Badinerie is the last of seven movements from a larger piece called **Orchestral Suite No.2**.

The piece was composed between **1738-1739**.

Instrumentation:

Flute, string orchestra and harpsichord.

The score has five parts (flute, violin 1, violin 2, viola and cello). The harpsichord player reads from the cello line and plays the notes with their left hand whilst filling in the chords with their right hand.

Texture:

Homophonic: melody and accompaniment.

The flute and cello provide the main musical material; however, the 1st violin participates occasionally.

The 2nd violin and viola provide harmony with less busy musical lines.

Tonality:

Section A begins in **B minor** (tonic) and ends in **F♯ minor** (dominant minor).

Section B begins in **F♯ minor** (dominant minor) and ends in **B minor** (tonic).

Section A modulates from B minor through **A major** before arriving at F♯ minor.

Section B modulates from F♯ minor through **E minor, D major, G major** and **D major** before arriving at B minor.

Tempo:

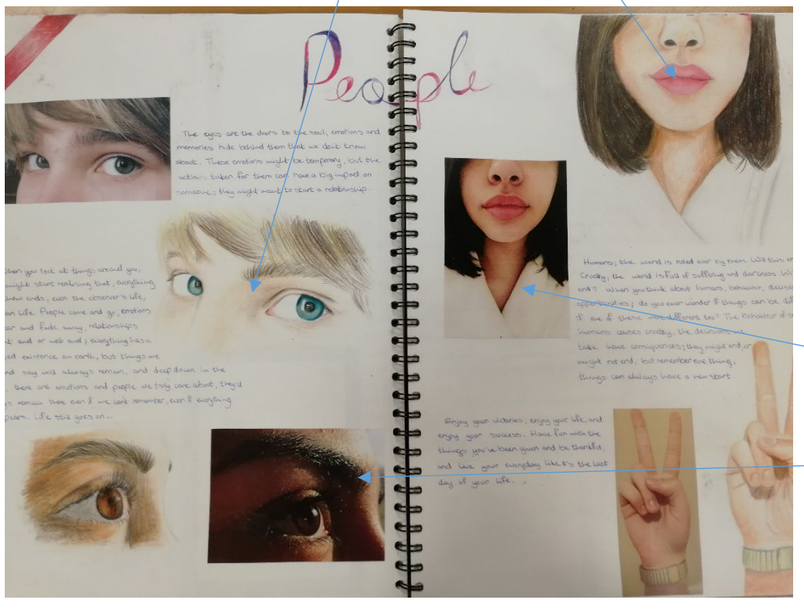
The tempo is **Allegro** (quick, lively, bright), although not marked on the score.

Half-Term: HT1 +2 Y10 Coursework Project Subject: KS4 Art Threshold Concept Link(s): Draw from observation and use a range of tone and media

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	16-24 marks	28-36 marks	40-48 marks	52-60 marks	64-72 marks

TECHNICAL VOCABULARY	
Response	A reaction (to the work of an artist)
Primary source	Observed first hand
Experiment	To test (with different art media)
Annotate	Explanatory notes
Review	Evaluate
Reflect	Reconsider and modify
Independent	On your own
Formal Elements	The Formal Elements are the parts used to make a piece of artwork. They should be commented on when discussing your own work
Analyse	To examine in detail
Media	Different art equipment like paint

Observational drawing in different media.



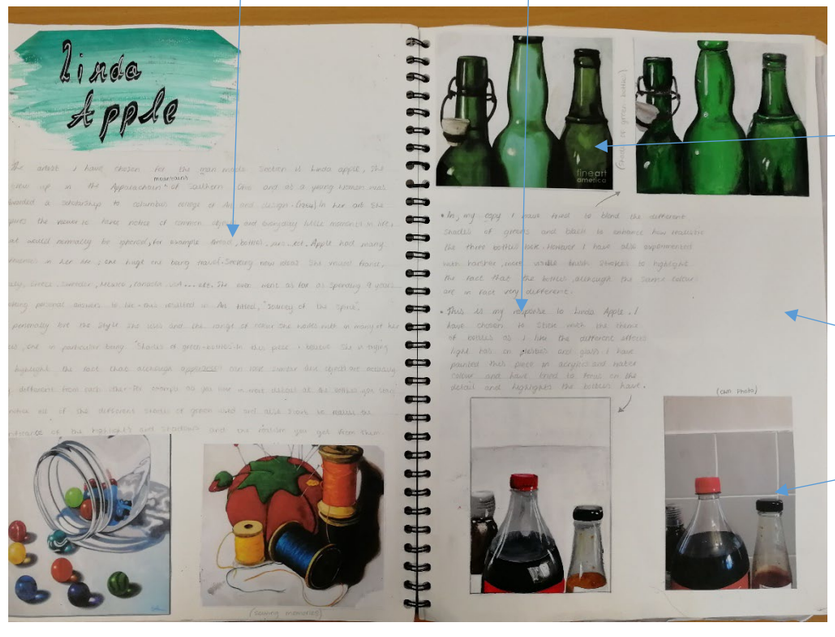
Use your own photos not pictures from the internet.

Initial research

Research will cover the 4 different themes of; man-made, people, environment and natural world. For each theme you will produce a double page of primary resources and research an artist, produce a copy of their work and then a response to their work. This will cover another double page.

Research on chosen artist

Annotation explains links to artist and reflects on use of media



Copy of chosen artist.

Response to chosen artist using own photo to draw from.

Energy, materials, systems and devices– Knowledge organiser

What	***Definition***	***What***	***Definition***
Turbines and generators	Electricity we use mainly involves a rotating turbine which turns a generator. 1. Fossil fuels are burned to create heat which intern superheats water. 2. The steam is used to rotate the turbines which are linked to a generator. 3. Provide us with a supply of electricity.	**Solar energy**	
Fossil fuels	Most of the heat that we generate electricity in the uk comes from burring fossil fuels such as coal, gas and oil. These are **FINITE resources** as they formed over many millions of years and cannot be replaced as they will eventually be run out!	**Nuclear**	The process harnesses a nuclear reaction that takes place in a vessel. Control rods are moved in or out of the core to regulate the power. The reaction generates heat which superheats water and then generates power by driving turbines and generators.
Shale Gas	Shale gas is a natural gas that is trapped within areas of shale in the earth crust. Shale is a sedimentary rock that can be a rich source of petroleum and natural gas. Fracking is the controversial process of extracting this shale gas.	Energy storage	There are a number of ways to store mechanical power. In most mechanical products, it uses tension or compression.
Renewable energy sources	This is energy that comes from the planets non-finite resources is considered to be renewable. This includes wind, wave and tidal, hydroelectricity, geothermal and biomass and Solar energy.	**Pneumatics**	Form of compression is used to store gas or air under pressure – controlled via valves and pistons.
Wind turbines	1. Produce more power in the winter. 2. Do not produce power when it is not windy. 3. Can harm wildlife especially birds. 4. Some consider it to be an eye sore. 5. Has a term 'Nimbyism' – not in my back yard.	**Hydraulics**	The gas or air in a pneumatic system can be swapped for a liquid, the most common is oil. Used in breaking systems and lifting mechanisms.
Solar energy	The solar cell technology captures the sun's rays and converts them into electric energy. The cells only produce energy during the daytime and production is less in the winter months owing to the shorter daytime length.	**Kinetic energy**	Kinetic is energy involve in motion. Any object in motion in kinetic energy. Throwing a ball or a person walking in kinetic energy.
Tidal energy	Tidal is more reliable than solar and wind and more predictable. The difficulty is the environment/ where it can be located. This means distance from land, repair work and is it in a conservation area. It is also very expensive to build.	**Batteries**	Electronic power can be stored in batteries. Batteries contain electro chemicals that react with each other to produce electricity. They come in many different sizes and provide different voltages and power levels. Batteries contain cells. Each cell providing 1.5 volts.
Hydro electric Power	Hydro electric power (HEP) generation is a very reliable source of renewable energy. It has high initial set up due to the machinery and the land needs to be flooded to create a reservoir.	**Alkaline cells**	Alkaline batteries have a higher capacity for their size than traditional acid based batteries Alkaline batteries tend to hold their charge well.
Biofuel	Production of Biofuel is becoming a way of producing energy for transporting and heating needs. Oil- and starch – producing crops are grown, harvested and refined into a number of products. This is biomass energy production. Biomass can also include wood chips and farm waste	**Rechargeable batteries**	These are available in different forms and is used in cordless products, phones, power tools portable speakers, laptops and tablets. These can be charged hundreds of times. These are more expensive than traditional batteries but they can be used, better on the environment and save you money down the long run.

Energy, materials, systems and devices– Knowledge organiser

What	***Definition***	***What***	***Definition***
Disposable Batteries	These are the acid based and alkaline batteries. They need to be disposed of properly and not put in normal waste as they can poison the ground when berried – the acid will get into the water stream.	**Smart materials**	A smart material is material that can change depending upon the environment its in! Different situations/ causes
Modern Materials	Technology is constantly changing in ideas, size and material as well as manufacturing processes.	**Thermographic pigments**	Inks and dies react to heat by changing colour at different temperatures – for example a product will turn red when becomes to hot. These are used in thermometers, spray paints and children's toys.
Corn starch	Corn starch is biodegradable whilst the plastic we use aren't. The soil can break down the starch polymers and they are non toxic to the environment.	**Photochromic pigments**	Inks and dies react to levels of light by changing colour. UV light effect the changes in the pigment, the longer its exposed to UV the darker it becomes.
Flexible MDF	Made from wood pulp fibres – same way as MDF. It has grooves across the width of the board leaving 2mm in tact. This allows the board to flex. Very popular in architects models and organic/ curved furniture.	**Photochromic particles**	Mainly used in sun glasses. The particles enable the lens to darken when in sunlight. Classes will appear normal when indoors.
Titanium	Titanium is a versatile metal and alloyed with other materials to enhance properties. Pure titanium does not react with the body so it is used extensively for the medical industry for artificial joints, implants and surgical tools. Titanium has a high strength to weight ratio.	**Shape memory alloy**	They can remember their pre-set shape, they can deform and then return back to their normal shape. To do this they need heat or electricity.
Fibre optics	Allows digital information to travel at high speeds – pulses of light. Much more than copper wires. Inner glass core is slightly thicker than a hair. Used in telephone, internet and TV signals.	**Nitinol**	Nitinol is an alloy of nickel and titanium. To programme its shape it has to be heated to 540 degrees then allowed to cool. When it is heated to 70 degrees it will spring back to its normal shape
Graphene	This is a two – dimensional material is the thinnest discovered. A million times thinner than a human hair. It is transparent, flexible and stretchable and very conductive.	**Polymorph**	Polymorph is a non toxic and biodegradable polymer. Comes in granules. When heated to above 62 degrees it can be remoulded. Used for prototyping.
LCD	Used in electrical appliances. Low cost and low powered. There is monochrome and coloured variety. Monochrome use a single backlit which is just black. Coloured LCDs uses a variety of colours and each colour require different voltages.	**Quantum tunnelling Composite**	Designed to be a conductor or insulator. Designed to work when pressure is applied. The more pressure = less resistance. Less pressure = more resistance.
Nanomaterials	They are between 1 and 100 nanometres but could be up to 1000. These materials exist on an atomic molecular scale and is great for electronics and science.	**Piezoelectric material**	Material that produces an electric voltage when squeezed or put under pressure. Used in gas lighters.
Metal Foams	These are porous metals structure made from aluminium. Made from 25% mass of their comparative size. Light weight but still have the same strength properties and can be recycled. Created by injecting gas into the liquid metal.	**Litmus paper**	Paper that changes colour depending on PH levels.

Energy, materials, systems and devices– Knowledge organiser

What	***Definition***	***What***	***Definition***
Carbon Fibre	Glass and carbon fibre reinforced plastic are woven together. This is designed to make it light and very strong.	**Push pull linkage**	Maintains the same direction of the input.
Technical textiles	This is a textile which has been developed to improve function and aesthetic qualities. Often the way its been manufactured ie spun or woven can also improve its properties.	**Bel crank Linkage**	Changes the direct through 90 degrees
Gortex fabric	A membrane is sewn between layers of fabric which creates a waterproof but breathable garment. Used in outdoor clothing. Stops water coming in but moisture to escape. Make user feel comfortable.	**Crank and slider**	Changes rotary motion in reciprocating motion.
Kevlar	Has high tensile strength and light Hard wearing and very strong Fibres known as ARAMIDS used for body armour in hazardous situations	**Rotary systems**	Used to drive machinery. They are mainly used to transfer one motion to another.
Conductive fabrics	Known as e-textiles Use highly conductive threads that allow electricity through it. LEDs and earphones can be used here.	**CAMS and followers**	A cam is a shape attached to a shaft. These can be many different shapes to produce different movements.
Fire resistant clothing	Called **normex**. Designed to with stand high temperatures and set a light to the naked flame. These can be used with curtains, sofas and T towels. When flames are exposed to it, it releases a chemical to slow the process of down to prevent it catching fire.	**Gear trains**	A simple gear train consists of a drive cog wheel which turns a driven wheel. The gears are calculated by how many time the drive gear turns to the driven gear.
Purpose of a mechanism	To gain mechanical advantage – To make a job easier.	**Idler gear**	Gears to change direction
Movement	Linear – straight line in one direction Reciprocating – back and forward in a straight line Rotary – round in one direction Oscillating – Round in both directions	**Pulleys and belts**	Needs grooves in a rimmed wheel that is used in conjunction with a belt to transmit movement. The pulley is attached to an axle and rotates. The pulleys are mainly used to lift loads.
Lever	Rigid beam that rotates across a pivot		
1st class lever	Effort one end, pivot in the middle and load on the end		
2nd class lever	Pivot at one end, load in the middle and effort		
3rd class lever	Pivot at one end, effort in the middle and load at one end		
Reverse Motion linkage	Changes one direction of input so the other foes in the opposite direction.		

Half-Term 2 - Sustainability

Choice	Advantages	Disadvantages
Type of structure	Straw bale or timber-framed construction is good for the environment.	These types of construction may not suit the building that Lisa is designing.
Improving air quality	Passive stack ventilation could improve the air quality indoors; green roof technology could improve the air quality outdoors.	Passive stack ventilation may not be suitable for this size of building; green roofs often add unwanted extra weight to the structure.
Saving water resources	Rainwater harvesting and grey water recycling reduces the amount of fresh water used by a building.	The system may take up a lot of space.
Maximising the use of natural sunlight	A southerly orientation could reduce the amount of artificial lighting that the building requires.	The building may become too hot in summer or require the extra expense of louvre screens

	Greenfield	Brownfield
Economic advantages		
Economic disadvantages		

Subject - Construction

Give one sustainable example of each of the materials listed below and then suggest a use for this material.

For example:

Timber-based products
Example: Structural insulated panels
Use: Party walls

1 Timber-based products

Example: ___Cedar boarding_____

Use: _____Exterior cladding_____

2 Roofing materials

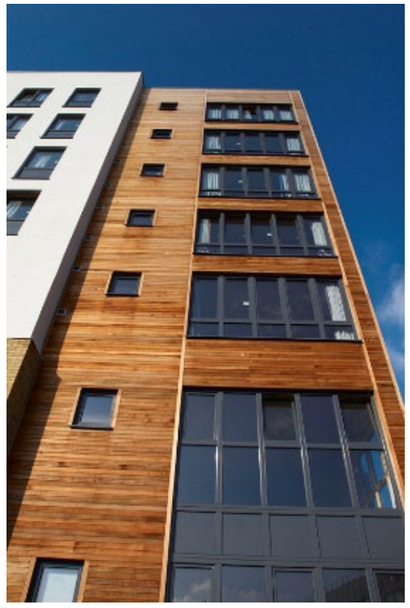
Example: _____Thatch_____

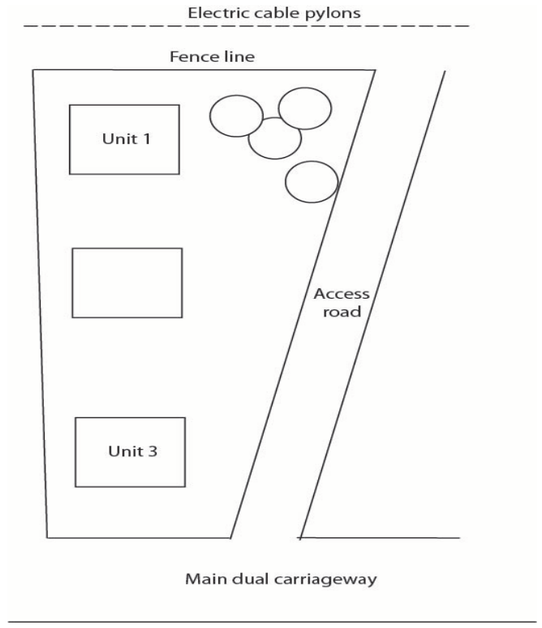
Use: ____Sustainable roof construction_____

3 Insulation materials

Example: ___Sheep's wool insulation_____

Use: _____Loft insulation_____





Year 10 HT2 (I.2)(1.3) Hospitality and catering Threshold Concept Link(s) **Job Roles and Requirements**

Kitchen Brigade	**Job Roles**	Front of house (Restaurant)
Head chef/ executive chef- • In charge of kitchen • Training Staff • Managing stock and menu planning • Planning staff rotas • Finding suppliers		**Restaurant Manager** • Responsible for the smooth running of restaurant • Communication with the kitchen, number of guests, dietary requirements • Hiring and firing staff
Sous Chef • In charge of day to day running of the kitchen • Cover when head chef is off		**Waitress** • Takes orders for food and drink • Serves food and drink • Clears and re- lays tables
Commis chef- Trainee sous chef • Assist the head chef		**Sommelier** • Advices customer on wine choice
Chef de partie- Section chef • Responsible for a certain area like sauces and soups		**Receptionist** • Meets and greets Customers • Manage visitor lists and bookings
Kitchen Porter • Washes up and can do veg preparation		**Concierge** • Makes reservations, books taxis, books tickets

Types of contracts

Fulltime	Works specific hours Set hours/ days No more than 48hrs per week	Entitled to holiday pay Sick pay Paternity/ maternity cover
Part time	Start and end time specified Specified hours	Reduced sick pay Reduced holiday pay, pro rata
Casual worker/ Seasonal	Seasonal or agency work, cover for contracted member of staff Often needed at short notice	No holiday or sick pay entitlement
Zero hours contract	Signed an agreement to work when they are required. No specified hours/ days are given	No holiday or sick pay entitlement
Holiday entitlement	Full time 28days holiday Bank holidays- time off in lieu	Part time based on number of days or hours worked
Remuneration	Tips Service charges Subsidised meals whilst on shift Accommodation- staff live on site	Dependent on establishment Tips may be divided up

LO1 – (1.2)(1.3)

Personal attributes in Hospitality– This is not a job description

- Good listener, good communicator
- Calm and confident
- Able to take instructions and work as a team
- Physical stamina
- Able to take initiative
- Flexible and adaptable to different situations
- Punctual and reliable
- Willing to learn and develop skills
- A sense of humour
- Helpful and approachable
- Hard working
- Good commitment to completing the task
- Well organised and attention to detail
- Remain calm under pressure
- Good communication face to face and by phone

Training	Rates of pay
Training in school or FE college • KS4 – Level ½ vocational completed at school • Post 16-19 Diploma in H&C Level 2 • Diploma in professional cookery 1,2 • Certificate in H&C Level 2	**Dependent on age and experience** • Under 18's cannot work more than 40hrs PW. • School leavers- minimum wage, £4.55 per hour • 25yrs + national living wage • Average salary in hospitality £25,000
University- HND/ HNC in • Catering • Hospitality • Hotel Management • Food and beverage	**Rates are also dependent on where you live and your experience, age and training** **These are an example** • Hotel management £37,300 • Head chef £36,600 • Pastry chef £30,000 • Receptionist £21,000 • Waiter/ bar staff £16,000 • Kitchen staff £16,000
Apprenticeships Learn on the job at an establishment returning to college to complete theory.	
Training in house • Work from the bottom to the top • Opportunity to try all areas of hospitality • Get paid as full time staff member	

HT2 Subject **Child Development: Growth and Development Y10a.**

Growth	
What is growth a major feature of?	Childhood.
Why does growth take place?	Certain cells in the body keep dividing.
What does a division in cells in children mean?	Increases in height and weight, bones become longer and skeleton changes, development of muscles as well.
Who measures children?	Health visitors.
What measurements are plotted on a centile chart?	Height, weight and head circumference.
If children are not growing as expected what can this be a sign of?	Possible medical problems or a sign that the child is not eating the right quantity or type of food.
How can heredity affect growth?	Some medical conditions affecting growth can be inherited.
Why do bodies need nutrients?	Bodies need these in order for muscles, bones and organs to keep healthy and grow.
How much sleep do children need?	Babies need between 12-14 hours a day, young children need 10-12 hours.
How can emotional influences affect child's	If children have long periods of unhappiness, they are less likely to sleep or eat well- more likely to be ill.

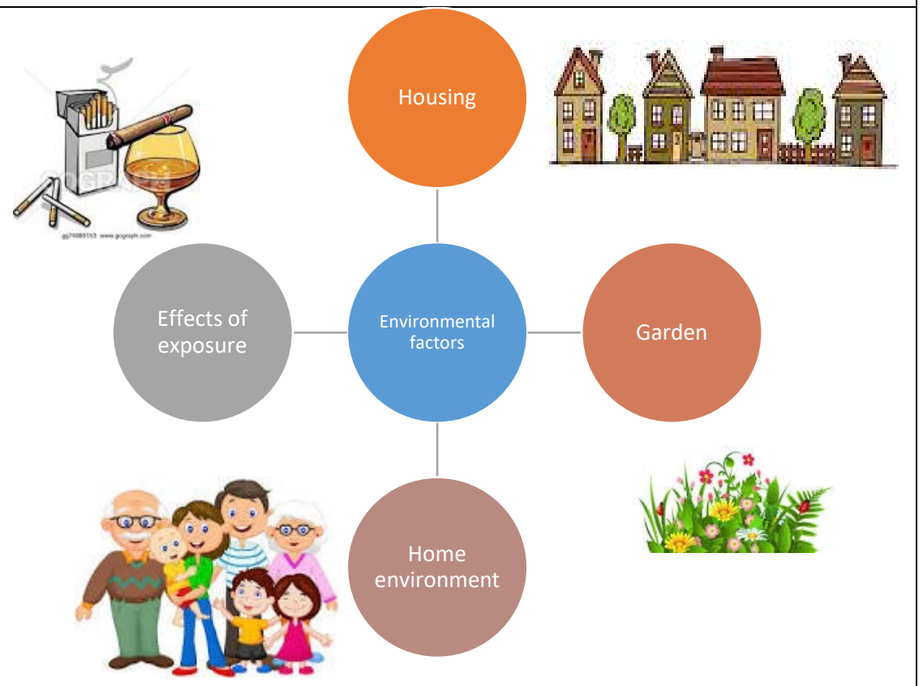
Development	
What is development?	The skills and knowledge we gain over time.
Do children develop at an even pace across all areas?	No some may have good language skills but not be able to kick a ball.
Why is it important to know the milestones for the different ages?	Can help you plan activities and spot any child that may need more support.
What are the 5 key development areas?	Physical, Cognitive, Communication and Language, Emotional and Behavioural and Social.
What's the difference between gross and fine motor movements?	Gross are large movements of the arms and legs, fine are small movements usually of the hands.
What are fine manipulative movements?	Complex or intricate movements of the hands- turning the lid of a bottle, tripod grasp.
What is perception?	The ability to become aware of something using the senses.
Which development area and skills are used in reading a	Communication and language- reading it. Physical- turning the page.
Which development area and skills are used in playing	Physical- drawing the noughts or crosses. Cognitive- deciding where to play.
Why are role models important?	Children copy skills and attitudes from them.

TECHNICAL VOCABULARY	
Growth	The division of cells.
Cell	A tiny part of the body.
Health visitors	Health professionals who advise families with children.
Head circumference	Measurement of the head from above the eyebrows to around the back of the head.
Centile chart	A chart on which measurements are marked and compared with those of other children of the same age.
Hormones	Chemicals that can trigger cell division, creating subsequent growth.
Nutrients	Substances found in food that are essential for health and growth.
Holistic development	The development of a child, taking into account all aspects of what they can do, not just one single area of development.
Milestones	Skills or pieces of knowledge that a child has acquired.
Developmental norms	The milestones that are associated with a particular age group.

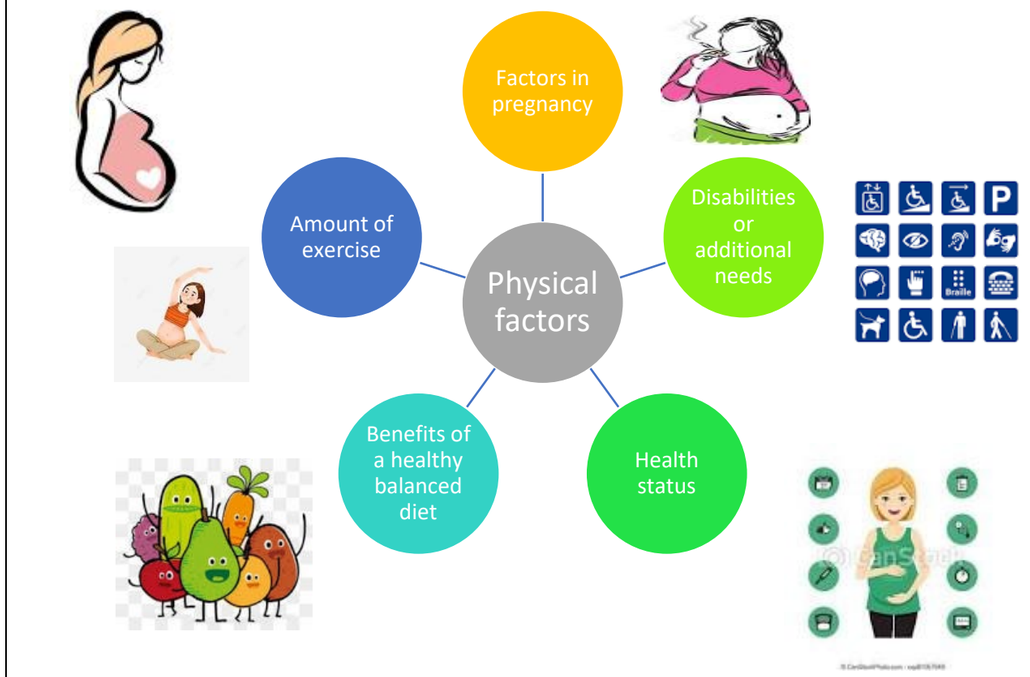
Development of different ages across the development areas			
	0- 18 months	18 months – 3 years	3 years -5 years
Physical	**3m** reflexes disappear; lift head + shoulders; watches fingers. **6m** rolls + turns; sits with support; holds a toy. **9m** sits; crawls; stands; passes toys; drinks cup. **12m** walks with handheld; pincer grasp; finger feeds. **15m** walks alone, grasps crayons and scribbles.	**18m** walks steadily; stops safely; climbs stairs; rides a balance bike and sit + ride toys. **2y** runs; throws a ball; walks up and down stairs; holds chunky pencils; draws circles and lines. **2y 6m** jumps from a small step; kicks a large ball and copies lines.	**3y** walks on tip toe; balances; rides a trike; catches and kicks a large ball; tripod grasp; cuts paper with scissors. **4y** runs and avoids obstacles; good balance; copies letters; draws a person. **5y** runs, climbs, skips, hops; likes ball games; good pencil control.
Cognitive	**3m**– attention span increase; recognises routines. **6m** recognise familiar objects/people. Respond to carers voice; explores objects; weaning. **9m** smiles at own face (mirror); looks for dropped toys; likes peekaboo, songs+ rhymes. **12m** knows own name; imitates actions.	**18m** knows name; can point to body parts; curious; knows where things belong. **2y** recognises pictures in a book; enjoys simple make-believe play. **2y 6m** knows full name; asks the names of people and objects.	**3y** matches + names colours; sorts objects; understands time passing; can 'write' (mark make on paper). **4y** counts to 10; repeats songs + rhyme; simple problem solving. **5y** concentrates longer; writes own name; recognises own name; simple sums; interested in reading + writing.
Communication and Language	**6 weeks** smiles **3m** stops crying when picked up **6m** babbles; laughs; vocalises. **9m** tuneful; joins in pat a cake; dada, mama. **12m** first words; pointing; copies; understands.	**18m** says words; gestures; understands more; repeats. **2y** says over 50 words; 2 words joined; enjoys books. **2y 6m** says 200 words; learns new words quickly; simple sentences.	**3y** clear speech; asks why? Uses personal pronouns and plurals; listens to stories; understands most instructions. **4y** talks about past and future; tells stories; likes jokes; asks questions; listens. **5y** fluent speech; grammatically correct; wide vocabulary; understand complex instructions.
Social	**3m** likes attention + cuddles. **6m** familiar people + strangers **9m** cries without their carers **12m** likes games peekaboo **15m** watches others playing.	**18m** understands 'you' 'me' 'mine'. Imitates household tasks. **2y** undress and dress with help; toilet training; more independent. **2y 6m** eats with a spoon; plays with others; does not share.	**3y** plays with others; starting to share and take turns. **4y** shows sensitivity; independent; good sense of humour. **5y** choses friends; understands rules; enjoys team games.
Emotional	**3m** like care routines **6m** recognises emotions **9m** specific attachment **12m** curious; explores **15m** some independence; jealousy.	**18m** mood swings dependent-independent **2y** cannot wait, wants demands met asap; can be distracted from tantrums. **2y 6m** self-identity; coping with emotions; tests boundaries from adults.	**3y** can wait; more co-operative; uses language to express feelings; makes requests. **4y** confident; self-assured; personal care; turns to adult for comfort when hurt or ill. **5y** close friendships; copes with emotions; resilient; adults need to sort conflicts.

HT2 Subject **Child Development: Factors that can impact development Y10b.**

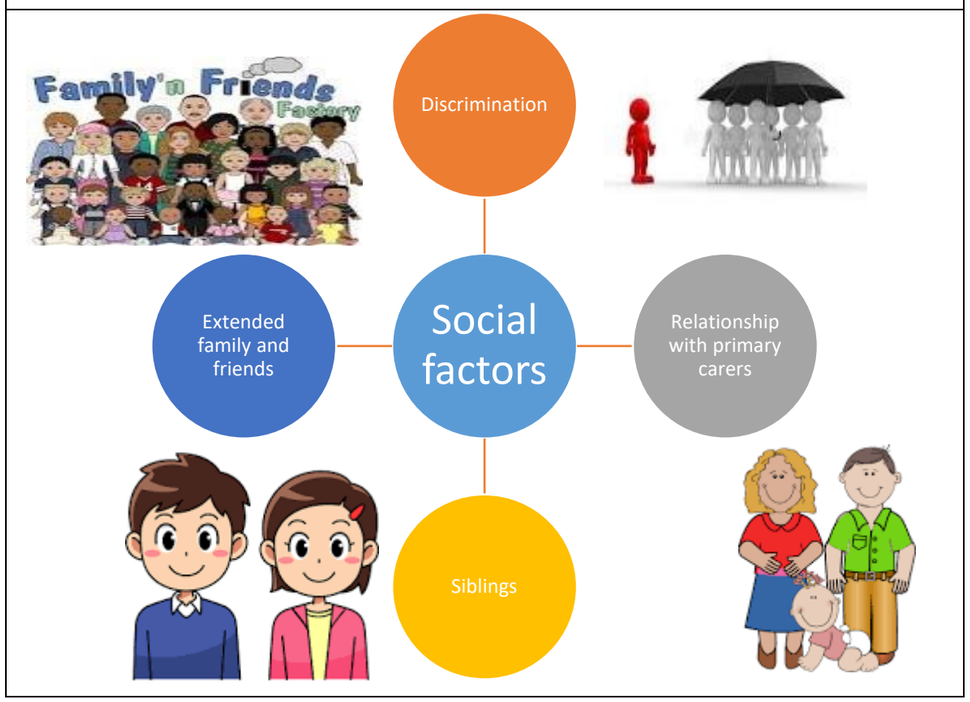
Environmental Factors that can impact a child's development



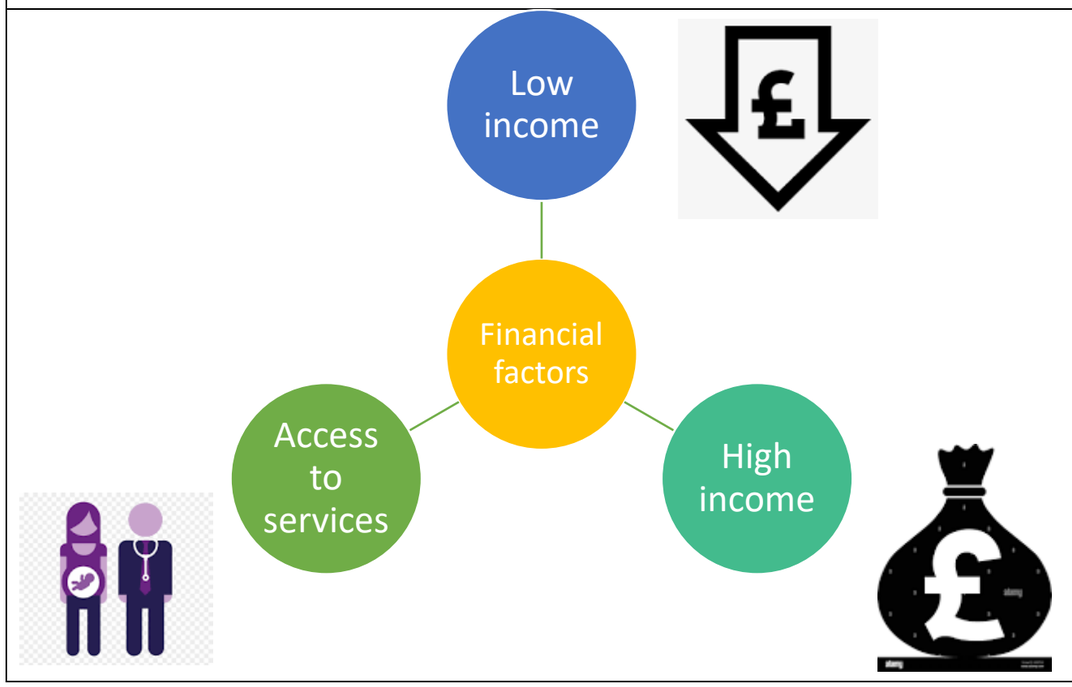
Physical Factors that can impact a child's development



Social Factors that can impact a child's development



Financial Factors that can impact a child's development



Half-Term 2 Subject **Sociology** Threshold Concept Link(s) **Education**

The Marxist perspective of education

Marxists believe that at school students learn how to fulfil their future roles in the capitalist world of work. They do not see this as benefiting the whole of society, or individuals themselves, but only the capitalist class (bourgeoisie).

We learn to do this through The Hidden Curriculum:

1. Hierarchy: The hierarchy in school can be seen to reflect the structure of society and in the workplace.
2. Competition: School encourages competition between students e.g. sports, exam results.
3. Social Control: Rules, regulations, obedience and respect for authority.
4. Gender role allocation: teacher expectations and subject choice
5. Lack of satisfaction: Preparing students for boring, meaningless and repetitive jobs is a similar experience to employees at work

The functionalist perspective of education

- Schools prepare children for the same universalistic standards, the opposite of the particularistic standards from homelife.
- Schools promote a value consensus: encouraging students to achieve highly and providing rewards to encourage them to maximize their potential. Students are also competing on equal terms in the classroom.
- Meritocracy: student's achievements are based on their abilities and efforts, not on social class, gender or ethnicity.
- Role allocation: students are matched to the correct job based on their skills and knowledge.

The feminist perspective of education

- There are inequalities in the education system between boys and girls.
- Education reinforces patriarchal views. For example, girls may be encouraged to study subjects like Health and Social Care and Home Economics; reinforcing the idea that a woman's role is in the family or in a caring capacity.
- Teachers may expect certain behaviours from boys but not tolerate them from girls, such as 'rowdy' or 'boisterous' behaviour; again encouraging girls to behave in certain ways because of traditional gendered expectations.
- The structure of the school also highlights patriarchal inequalities in society. Many of the top positions in schools are taken by men, whilst most of the serving and cleaning staff are women. This sends out a message that men should be in more powerful positions than women.

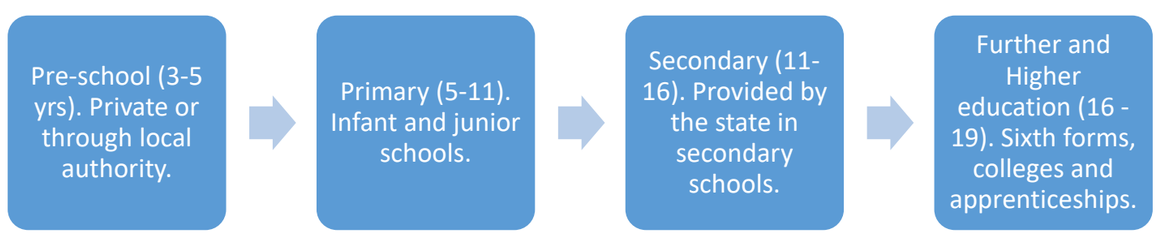
SUBJECT TERMINOLOGY: types of education	
Home education	teaching children at home using parents or tutors.
Vocational education	work-related qualifications and training.
Specialist schools	Raise standards of achievement based on their strengths e.g.
Faith Schools	Schools that are run with a religious ethos
Academies	Taken out of local authority control. Private sponsors can help to raise achievement.
Free Schools	Schools that can be set up and run by groups of parents, teachers, businesses etc.
Independent schools	Public and private schools (fee paying)
State schools	Free schools for all students regardless of ability
Grammar school	Selective schools with an entry test (usually the 11+)
Comprehensive school	Mixed ability schools, non-selective

SUBJECT TERMINOLOGY: key terms	
Material deprivation	The lack of material resources due to lack of money. For example lack of equipment, uniform, money for trips, etc
Cultural deprivation	The incorrect values and attitude to succeed in education.
Cultural capital	The correct values and attitude to succeed in education.
Labelling	When a teacher applies a definition to a student based on their class, gender or ethnicity, not on factual information.
The self-fulfilling prophecy	When a student internalises the label applied to them by a teacher and 'lives up' to it.
Banding/setting	the way schools categorise students by ability for their learning
Subcultures	Groups of students who share the same values. These are often anti-school or pro-school.
Hidden curriculum	Lessons taught in school which aren't directly on the curriculum, such as punctuality.
Secondary socialisation	The process of learning which runs throughout our lives. Schools are an agent of secondary socialisation.
Meritocracy	The functionalist view that education provides opportunities for all students to succeed, regardless of their background.

Influences on educational attainment	Major points	Sociologists
Cultural factors	Working-class groups may not have the appropriate values, language codes and parental encouragement needed to succeed at school. They may be used to blame working-class groups and the way they are socialised. Some, such as Marxists, argue that the working class do not possess the **cultural capital** to succeed at school. This refers to economic and cultural factors such as language skills and interests, and knowledge of art, theatre and literature. Others argue that some working-class groups may not possess **social capital**. This refers to the ability to navigate the education system and to achieve success.	**Hyman (1960s-70s)** **Bourdieu** **Becky Francis**
Material factors	Some theories refer to money and the things that can be bought, which might help children to succeed, such as equipment, tuition and internet access. They also refer to the living conditions of the children such as housing, space to complete homework, heating, and adequate food and clothing. They affect where children can afford to live and the school they can attend; children who are without these necessities are said to be in material deprivation.	**Noble** **Ball**
School	The school children attend, the way it is organised, and resources they have access to may also affect achievement. Schools may have a middle-class ethos or irrelevant curriculum which may cause children to disengage from school. Teachers may attach labels to children which are often associated with social class, gender and ethnicity. Middle-class pupils are more likely to be labelled as ideal. Children may see themselves in the context of their labels and live up to them. Children may disengage from school and form anti-school subcultures. Some schools may have a patriarchal or racist culture.	**Diane Reay** **Hargreaves** **Willis**

1944 Education Act	**1965: The Comprehensive System**	**1988 Education Act**	**1997 New Labour Educational Policy**	**Since 2010 policies**
• Equal chance to develop talents, free state run education • Introduction of a meritocratic system in which children received an education based on their academic ability rather than the ability of their parents to pay. • Introduction of the 11+ exam and the Tripartite System: ➢ Secondary Modern ➢ Secondary Technical ➢ Grammar	• One school for everyone- all abilities and social classes. • No labelling as a failure, seen as fairer. • Each school has a specific 'catchment'	• Introduction of the marketisation of education- consumer choice and competition. Focus on parental choice, funding based on student numbers and more freedom for schools. • The introduction of the National Curriculum- core subjects for ages 5-16. • Introduction of testing- GCSE examination.	• Raising Standards: providing nursery places for 3-4 year olds, reducing class sizes, national literacy & numeracy schemes, 'special measures', 'value-added' feature on league tables. • Reducing inequality: introduction of Educational Maintenance Allowance (EMA), Aim Higher Programme, The Sure Start programme and Connexions. • Promoting Diversity & Choice- Introduction of specialist and faith schools.	• New style academies • Free Schools • Pupil Premium

Arguments **for** vocational education	Arguments **against** vocational education
• It will lead to a more skilled, better-qualified workforce that will make Britain more competitive • Functionalists believe it shows the importance the education system has to provide skills and expertise needed by industry & the economy.	• The emphasis on skills training disguises the fact that the problem is not that young people lack necessary skills for work it's that there is no work for skilled young people. • Marxists argue it is viewed as lower status compared to purely academic qualifications. • Seen as replicating the Tripartite system



HT2 Y10 Subject **RS core** Theme E **Crime and Punishment** Christianity

Religion, crime and punishment and reasons for crime	
In the UK who do the police arrest?	Police arrest people who are suspected of having broken the law by committing crimes.
If the police question someone and believe they committed a crime what happens?	If the police are confident that they have the right person, then the person will be charged with that offence.
What happens to a person charged with a serious crime in the UK?	Suspected offenders face a hearing in front of a local magistrate before going to Crown Court before a judge and a jury of 12 people.
What do most serious offences carry?	A life sentence in prison although this doesn't mean people stay in prison until they die. A life sentence is usually 25 years.
Can a UK court impose a sentence of physical harm or death?	No UK court can impose physical harm or death in some countries the death penalty is allowed.
What is Civil Law?	Civil law concerns disputes between individuals or groups – landlords/tenants etc…
What do the teachings in the Bible warn against?	They warn against having any evil or wrong thoughts or intentions.
In a religious sense who can evil be linked to?	Evil can be linked to the devil (Satan) who is the source of all that is considered evil.
Do Christians believe that people are evil?	Many would say there is no such thing as an evil person. Human beings are imperfect and suffer from an original sin.
What are some reasons for committing crime?	Poverty; opposition to unjust laws; hate; greed; addiction; mental illness and upbringing.

Christian attitudes	
What are the general Christian attitudes to lawbreakers?	Christians are against people breaking the laws of their country as laws are there to protect the rights and security of all citizens.
What do Christians believe about lawbreakers?	Some believe that a punishment should be as severe as the crime committed; others believe that the lawbreaker should be helped so that they do not re-offend. They hate the crime but not the person.
What are Christian attitudes to how lawbreakers should be treated?	Lawbreakers have rights and these should be protected, even whilst they are being punished. Christians believe that inhumane treatment of offenders is wrong. Jesus said prisoners should be treated well.
What are Christian attitudes to different types of crime?	Christians condemn hate crimes and murder as all people are created with equal value and none should get inferior treatment.
What are Christian attitudes to suffering?	Christians should try and help those who are suffering; they should follow the example of Jesus who helped people in need.
Can we blame God for suffering?	Christians believe that God gave humanity the free will to behave as they choose. Teachings of Jesus give guidance to help.
If they cause suffering what should Christians do?	Christians should be honest to themselves; to other people and to God and work hard at repairing any damage they have caused so that relationships can be restored.
When should prison be used?	Most Christians agree that prison should be used as a punishment for serious crimes.
Would a Christian agree with corporal punishment?	Christians do not agree with this, they focus on positive sanctions that help rehabilitate offenders, they believe in following Jesus' example of treating all people with respect.

TECHNICAL VOCABULARY	
Crime	An offence which is punishable by law – stealing; murder etc.
Punishment	Something legally done to somebody as a result of being found guilty of breaking the law.
Evil	The opposite of good; a force or the personification of a negative power that is seen as destructive and against God.
Poverty	Being without money, food or other basic needs of life (being poor)
Mental illness	A medical condition that affects a person's feelings, emotions or mood and perhaps their ability to relate to others.
Addiction	Physical or mental dependency on a substance or activity which is very difficult to overcome.
Greed	Wanting to possess wealth, goods or items of value which are not needed.
Retribution	An aim of punishment -to get your own back 'an eye for an eye.'
Deterrence	An aim of punishment- to put people off committing crime.
Reformation	An aim of punishment to change someone's behaviour.
Free will	The ability of people to make decisions for themselves.
Corporal punishment	Punishment of an offender by causing them physical pain – illegal in the UK.
Forgiveness	Showing mercy and pardoning someone for what they have done wrong.

Aims of punishment and the Death Penalty	
What is retribution?	This means to get your own back; in the Old Testament this is called lex talionis and means criminals should receive the same injuries and damage they caused their victim.
What is deterrence?	If offenders are seen to be punished for their actions it is hoped that the threat of this will put others off committing crimes.
In the past what punishments were used as deterrents?	Being punished in public – public floggings and executions.
What is reformation?	This is the punishment that most Christians prefer as it seeks to help offenders by working with them to help them understand why their behaviour is harmful.
Should Christians seek revenge?	No Christians should seek and show compassion.
Is there a limit to forgiveness?	No there is no maximum amount of times a person should be forgiven. God's love is infinite so there can be no limit to forgiveness.
What do Christians think about the death penalty?	Some agree with it and use teachings from the Old Testament to support their views: 'Whoever sheds human blood, by humans shall their blood be shed.' Genesis 9:6 and 'Life for life; eye for eye; tooth for tooth.' Exodus 21:23-24.
Why do some Christians oppose the death penalty?	They do not believe that taking another life is right – only God has the right to take life.

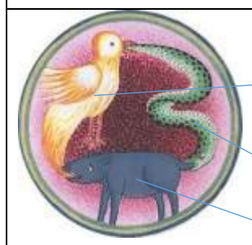
Subject **RS** Buddhism: beliefs and teachings.

Before enlightenment	
How long ago was Buddhism founded?	Buddhism was founded around 2500 years ago.
Who is the founder of Buddhism?	The founder of Buddhism was Siddhartha Gautama, he was born around 500BCE.
Who were Siddhartha's parents and what did this mean for his lifestyle?	Siddhartha's parents were King Suddhodana and Queen Maya and he had a life of 'material' luxury.
Queen Maya had a dream before Siddhartha was born what was it? What did it mean?	Queen Maya dreamt about a little white elephant who told her that her child would be holy.
After his mother died the King tried to protect his son from all hardships – what were the four sights that changed Siddhartha's life?	The four sights were old age; illness; death and a holy man. 
When he was an ascetic how was Siddhartha trying to understand the problem of suffering?	Siddhartha practiced living in extreme temperatures and places of danger; he slept on thorns and survived on very small amounts of food.
How did the demon Mara try to distract Siddhartha from gaining enlightenment?	Mara tried to distract Siddhartha by sending his daughters; his armies; offering control of his kingdom and questioning Siddhartha.
How long did Siddhartha's enlightenment take?	Siddhartha's enlightenment took place during 3 parts (watches) of the night.

TECHNICAL VOCABULARY	
Buddha	This is a title meaning 'awakened one' or 'enlightened one.'
Jakata	Popular stories about the life of Buddha.
Ascetics	People who live a simple and strict lifestyle with few pleasures or possessions. They are searching for spiritual wisdom.
Meditation	The practice of calming and focussing the mind.
Enlightenment	Spiritual wisdom that comes from understanding the true reality of nature.
Mara	A demon that represents spiritual obstacles and temptation.
Dhamma	The truth Buddha realised when he became enlightened.
The three marks of existence	Dukkha (suffering); Anicca (impermanence) and Anatta (nothing is permananet).
The four noble truths	These are dukkha (suffering); samudaya (cause of suffering); nirodha (suffering can end) and magga (there is a means to end suffering).
Arhat	A perfected person

After Enlightenment: Teachings	
What is the Dhamma?	Dhamma refers to the Buddha's teachings but is also about truth; training and universal 'law'.
What are the three refuges (or jewels) in Buddhism?	The three refuges (jewels) in Buddhism are the Buddha; the Dhamma and the Sangha (the Buddhist community).
What is the idea of dependent arising?	Dependent arising is the idea that everything arises in dependence upon conditions. It is shown as the Wheel of Life.
What does the Tibetan Wheel of Life show?	The Wheel of Life shows dependent arising as applied to birth, death and rebirth (samsara).
What are the three marks of existence?	The three marks of existence are suffering (Dukkha); impermanence (anicca) and having no permanent, fixed self or soul (anatta).
What are the 3 recognised types of suffering?	The three types of suffering are ordinary suffering (dukkha-dukkhata); suffering because of change (viparinama-dukkha) and suffering because of attachment (samkhara-dukkha).
How does anicca (impermanence) affect the	Anicca affects the world in the three following groups – living things; non-living things and people's minds.
What does the story of Nagasena and the chariot	The story of Nagasena and the chariot illustrates that there is no fixed part to a person.
What are the Four Noble Truths?	The Four Noble Truths are- 1/ dukkha (suffering); 2/ samudaya (causes of suffering); 3/ nirodha (suffering can end) and 4/ magga (there is a way to end suffering).
What are the 5 aggregates/skandhas?	The 5 aggregates/skandhas are Form: Sensation; Perception; Mental Formations and Consciousness.

Suffering, causes and routes to happiness



The 3 poisons

Greed/desire shown by a cockerel.

Hatred/anger shown by a snake.

Ignorance shown by a pig.

The **threefold way** makes up the sections of the eightfold path. They are ethics; meditation and wisdom.

The Eightfold Path has 8 aspects that Buddhists practice and live by in order to achieve enlightenment. It is split into the threefold way and can be understood as a range of practices that should all be developed. They are: -

Ethics – right speech; right action; right livelihood.

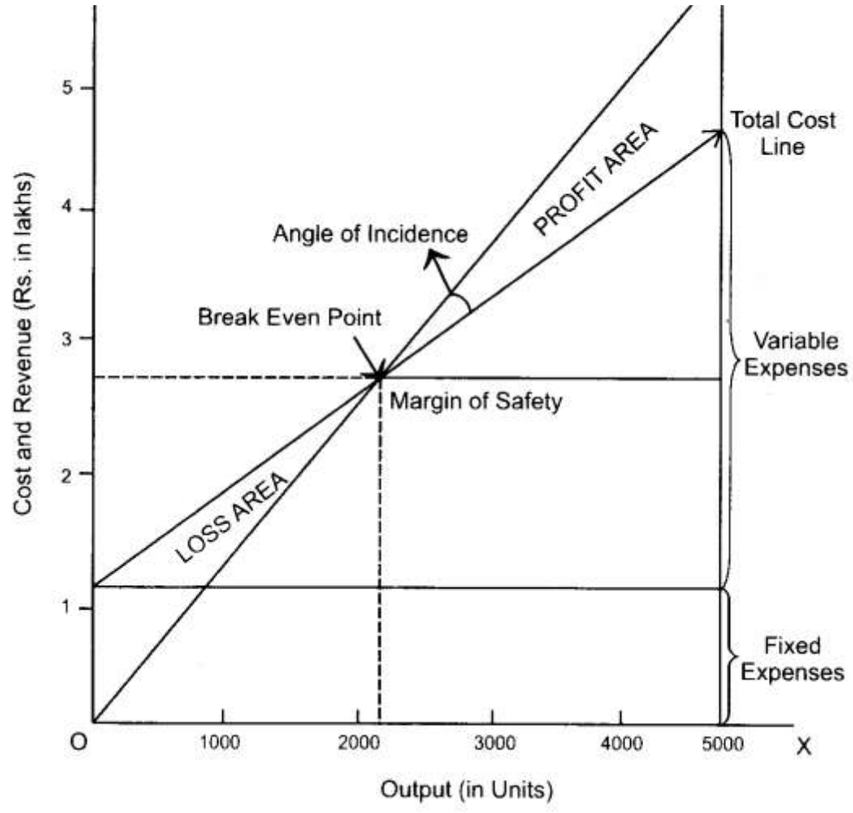
Meditation – right effort; right mindfulness; right concentration.

Wisdom – right understanding; right intention.

How does a person become an **Arhat**?
An arhat has overcome the main sources of suffering and has become enlightened so the cycle of rebirth ends and reach nibbana, this means that have followed and fulfilled the Eightfold Path.

Half-Term **November – December 2024** Subject **Business Studies** Threshold Concept Link(s) **Putting a Business Idea into practice (Topic 1.3)**

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	$\frac{\text{Total repayment – borrowed amount}}{\text{Borrowed amount}}$ x100
Break-even Point in units	$\frac{\text{Fixed Costs}}{\text{(Sales price – variable cost)}}$



TECHNICAL VOCABULARY	
Profit	The amount of revenue left over once costs have been deducted
Income Stream	The source of regular income that a business receives. This could be through the money it receives from customers, or other areas such as investment income
Break-even Point	The point where revenue received meets all of the costs of a business.
Credit	The amount of money that a financial institution or supplier will allow a business to use, which must pay back in the future at an agreed time.
Overheads	Fixed costs that come from running an office, shop or factory, which are not affected by the number of specific products or services that are sold.
Consumables	Items that get 'used up', such as pens, paper, staples and other items that a business has to replace regularly.
Overdraft	A facility offered by a bank that allows an account holder to borrow money at short notice.
Asset	Any item of value that a business owns, such as its machinery or premises
Retain profit	Money that a business keeps, rather than paying out to its shareholders.
Venture Capital	Money to invest in a business is sourced from individuals, or groups of people, who wish to invest their own money into new businesses.
Return on investment	The amount of money that an investor gets back in return for investing in a business.
Guarantor	A names person who guarantees to pay the repayments on a loan should the person who has taken out the loan not able to meet the payments.

Cash Flow Forecast	
Cash inflows	Al a list of all sales and income individually written.
Total inflows	All sales added together
Cash outflows	A list of business out floes including wages, cost of sales, maintenance, rent and advertising.
Total outflows	All cash outflows added together
Net Cash Flow	= Total Inflows – Total Outflows
Opening Balance	= Closing balance of the previous period
Closing Balance	= Opening balance + Net cash flow

B1 Sports Clothing and Equipment	
Performance clothing	Clothing that is adapted to improve performance (football tops)
Training clothing	Clothing used in training drills and practice sessions (bibs)
Waterproof clothing	Clothing that resists water and keeps you dry

B1 Sports Clothing and Equipment – Protective Equipment	
Head	Helmet (cycling), scrum cap (rugby), face mask (baseball)
Mouth	Gumshield/mouthguard (rugby, hockey, boxing)
Eyes	Goggles (horse racing, cycling, squash)
Body	Chest protector (ice hockey), shoulder pads (American football)
Arms	Elbow pads (rollerblading)
Legs/Groin	Leg pads (cricket), shin pads (football)

B1 Sports Clothing and Equipment – Safety Equipment	
Flotation Devices	Life jackets to keep bodies afloat in water
Floats	Pool noodles/woggles to help people learning to swim
Crash Mats	To cushion landings or falls

B2: Benefits of Technology in Sport	
Clothing	Clothing can be aerodynamic or regulate temperature.
Footwear	Footwear helps with grip and stability.
Materials	Equipment can be made lighter or stronger by using composite material.
Assistive Technology	Assistive technology includes prosthetics and sports wheelchairs, supporting those with disabilities.
Officials	Technology can help officials to make correct decisions.
Performance analysis	Performance analysis is useful for coaching, identifying strengths and weaknesses for an athlete's performance.
Modern facilities	New technology can improve the facilities that participants train in.

B3: Limitations of Technology	
Access	Not all sports performers have technology available to them, so some performers have an unfair advantage.
Cost	Some technology has a high cost and high maintenance costs which means some clubs and performers cannot afford it.
Accuracy	There are limitations to technology and some technology can produce inaccurate data.
Usability	Technology is unreliable if people do not know how to, or cannot use it, correctly.
Action cameras	Can be used to record performers and assist with feedback.
Performance analysis	A way of watching back a sporting performance with the use of technology and assessing what has gone right or wrong and how to improve it.
Difference in usage	Professional sports teams are likely to have the most up-to-date and effective technology as they generate more income whereas volunteer clubs and schools are less likely to be able to afford these things.
Benefits	Positive reasons for using technology.
Limitations	Things that mean using technology might not be the best option for a club or performer.
Examples of technology	VAR, Hawkeye, DRS, TMO, Heart rate monitors, Video analysis.