Student Name:

MAGNUS
CHURCH OF ENGLAND
ACADEMY

Knowledge Organiser: November 2025

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

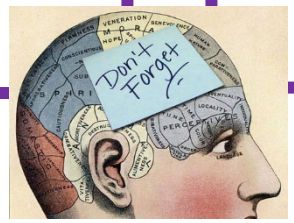
8. Write a set of test questions for yourself using the organiser.
    - Answer these without the organiser the next day.
    - Swap your questions with a friend to increase challenge.
    - Turn your questions in to a game by putting them on cards and playing with friends.

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!



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.

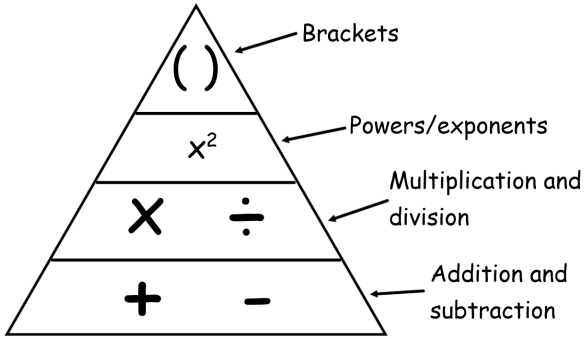
2. Macbeth — Key Terminology:

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

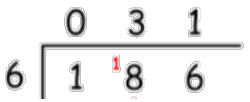
×	20	6
5	100	30

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.

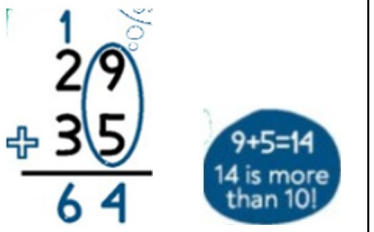
+ × + = + − × − = +

+ × − = − − × + = −

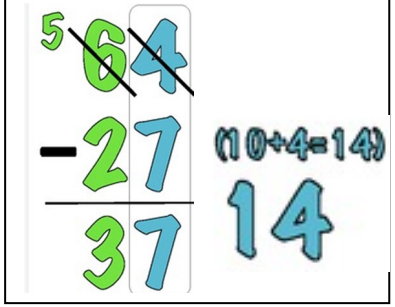
Adding Negative Numbers

+ 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

$a^2 - a - 6$

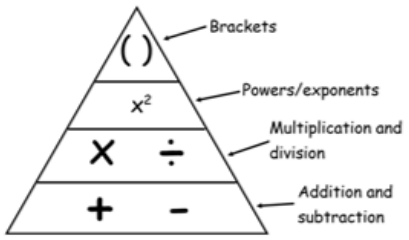
Expanding and Factorising

$3(x+2)$ ⇄ 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.

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

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

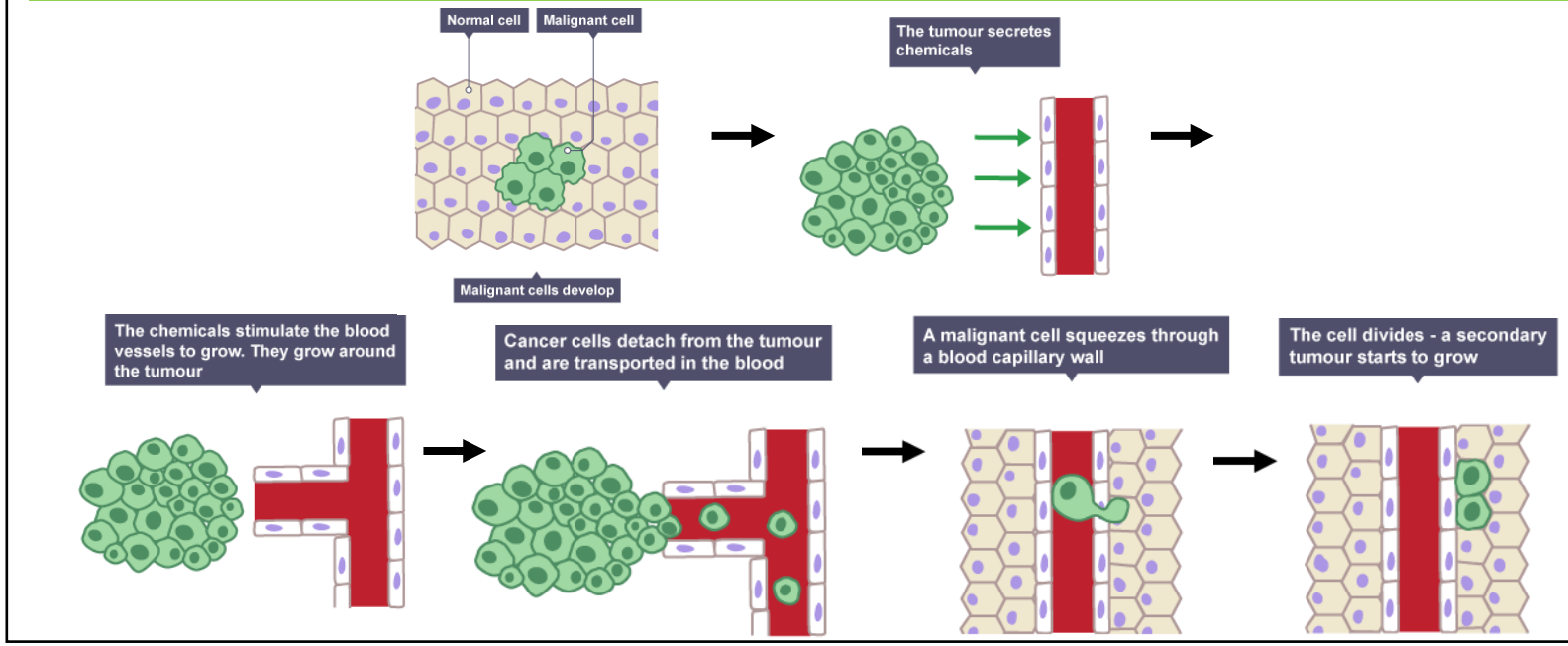
Paper 1 Subject: Science – Biology Topic: B7 Non communicable disease

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 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**.

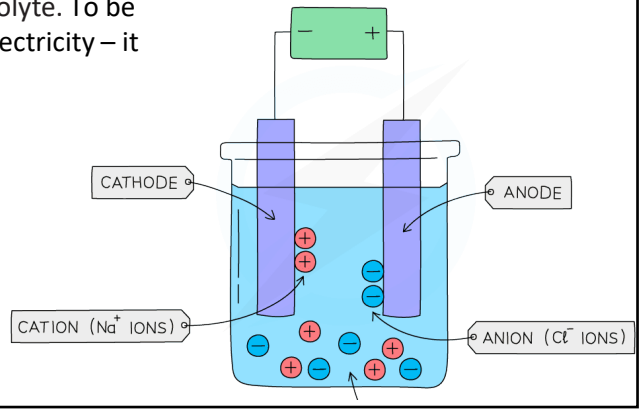
The substance that is broken down is called the electrolyte. To be an electrolyte, a substance must be able to conduct electricity – it needs to be molten or dissolved ionic substance

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)

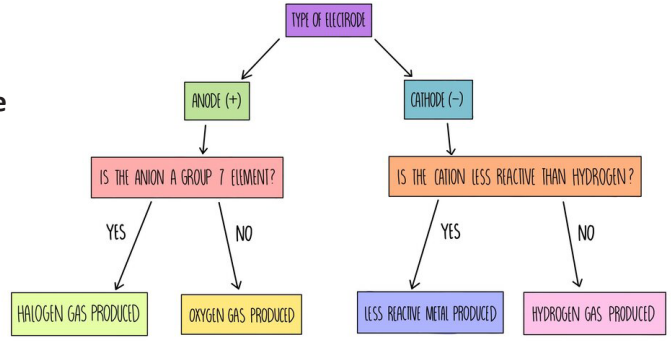


Subject Terminology	Definition
Electrolysis	The decomposition (breakdown) of a compound using an electric current
ionic compound	An ionic compound occurs when a negative ion (an atom that has gained an electron) joins with a positive ion (an atom that has lost an electron)
Electrolyte	A substance which, 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)

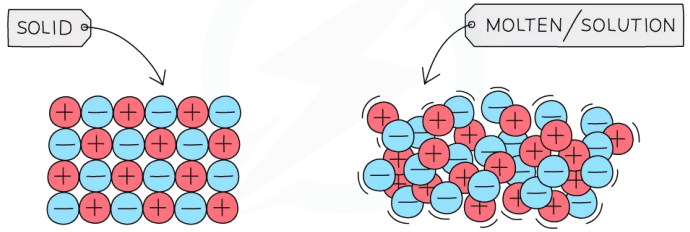
Predicting the products of electrolysis

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

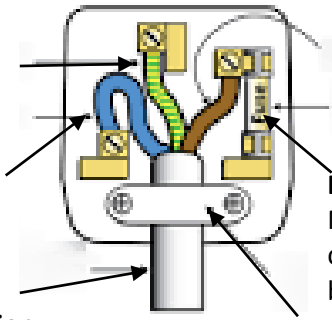


Particles in ionic compounds are in fixed position in the solid state but can move around when molten or in solution allowing them to conduct electricity.

Paper 1 Subject: Science - Physics Topic: P5 Electricity in the Home

Equations to learn	
Symbol equation	**Word equation**
P = I V	Power = current x potential difference
$P = I^2 R$	Power = current^2 x resistance
Q = I t	Charge flow = current x time
E = P t	Energy = power x time
V = I R	Potential difference = current x resistance
E = Q V	Energy = charge flow x potential difference

Units to learn	
Power	Watts, W
Current	Amps, A
Potential Difference	Volts, V
Charge	Coulombs, C
Time	Seconds, s
Resistance	Ohms, Ω
Energy	Joules, J



Earth Wire
Green and Yellow
Prevents the appliance becoming live.

Neutral Wire
BLue to the **L**eft
Completes the circuity.

Outer insulation

Live Wire
BRown to the **R**ight
Provides the AC potential difference.

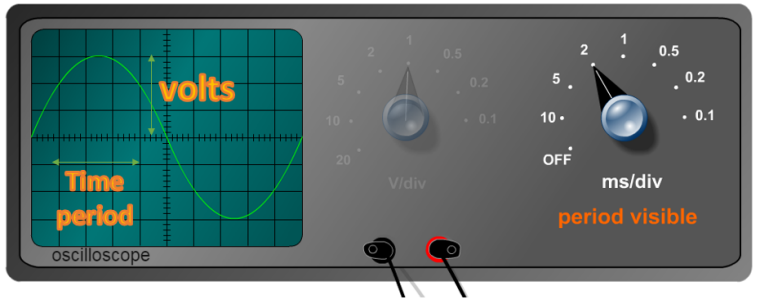
Fuse
Melts when the current is too high, breaking the circuit.

Cable grip

How to read an oscilloscope

To find potential difference:
1. Look at the V/div dial to see what each square represents.
2. Count how many squares the height of the wave is.
3. Multiply nº squares x nº on the dial.
4. This is your potential difference (volts)

To find the time period:
5. Look at the s/div dial to see what each square represents
6. Count how many squares the wavelength is.
7. Multiply nº squares x nº on the dial.
8. This is your time period



To find frequency:
9. Use the equation frequency = 1÷ time period

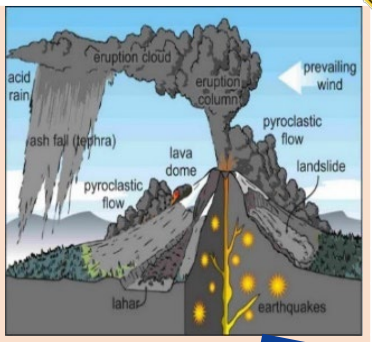
Subject Terminology	
Alternating current	The potential difference changes direction.
Direct current	The potential difference is always in the same direction.
Mains electricity	The frequency is 50Hz the potential difference is 230V alternating current.
Step-up transformer	Increases the potential difference, decreases current, increases efficiency in cables.
Step-down transformer	Decreases the potential difference to make it safe for the consumer.
National Grid	A system of cables and transformers linking power stations to consumers.
Double-insulated	Appliances that are double-insulated do not have an Earth wire as the case is made from plastic and cannot become live.

The structure of the Earth

The Crust	Varies in thickness (5-10km) beneath the ocean. Made up of several large plates.
The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.

Volcanic Hazards

Ash cloud	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
Gas	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
Lahar	A volcanic mudflow which usually runs down a valley side on the volcano.
Pyroclastic flow	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
Volcanic bomb	A thick (viscous) lava fragment that is ejected from the volcano.



Managing Volcanic Eruptions

Warning signs	Monitoring techniques
Small earthquakes are caused as magma rises up.	Seismometers are used to detect earthquakes.
Temperatures around the volcano rise as activity increases.	Thermal imaging and satellite cameras can be used to detect heat around a volcano.
When a volcano is close to erupting it starts to release gases.	Gas samples may be taken and chemical sensors used to measure sulphur levels.
Preparation	
Creating an exclusion zone around the volcano.	Being ready and able to evacuate residents.
Having an emergency supply of basic provisions, such as food	Trained emergency services and a good communication system.

Convection Currents

The crust is divided into tectonic plates which are moving due to convection currents in the mantle.

1	Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
2	When lower parts of the mantle molten rock (Magma) heat up they become less dense and slowly rise.
3	As they move towards the top they cool down, become more dense and slowly sink.
4	These circular movements of semi-molten rock are convection currents
5	Convection currents create drag on the base of the tectonic plates and this causes them to move.

LIC -CS: Haiti Earthquake 2010

Causes
On a conservative plate margin, involving the Caribbean & North American plates.
The magnitude 7.0 earthquake was only 15 miles from the capital Port au Prince. With a very shallow focus of 13km deep.

Effects
230,000 people died and 3 million affected. Many emotionally affected.
250,000 homes collapsed or were damaged. Millions homeless.
Rubble blocked roads and shut down ports.

Management
Individuals tried to recover people.
Many countries responded with appeals or rescue teams.
Heavily relied on international aid, e.g. $330 million from the EU.
98% of rubble remained after 6 months.

Earthquake Management

PREDICTING

Methods include:
- Satellite surveying (tracks changes in the earth's surface)
- Laser reflector (surveys movement across fault lines)
- Radon gas sensor (radon gas is released when plates move so this finds that)
- Seismometer
- Water table level (water levels fluctuate before an earthquake).
- Scientists also use seismic records to predict when the next event will occur.

PROTECTION

You can't stop earthquakes, so earthquake-prone regions follow these three methods to reduce potential damage:
- Building earthquake-resistant buildings
- Raising public awareness
- Improving earthquake prediction

Unit 1a

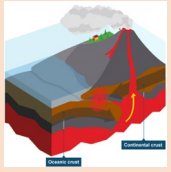
AQA

The Challenges of Natural Hazards

Types of Plate Margins

Destructive Plate Margin

When the denser plate subducts beneath the other, friction causes it to melt and become molten magma. The magma forces its ways up to the surface to form a volcano. This margin is also responsible for devastating earthquakes.



Constructive Plate Margin

Here two plates are moving apart causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the Mid Atlantic Ridge.

Conservative Plate Margin

A conservative plate boundary occurs where plates slide past each other in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.

What is a Natural Hazard

A natural hazard is a natural process which could cause death, injury or disruption to humans, property and possessions.

Geological Hazard	Meteorological Hazard
These are hazards caused by land and tectonic processes.	These are hazards caused by weather and climate.

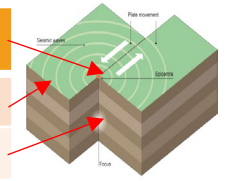
Causes of Earthquakes

Earthquakes are caused when two plates become locked causing friction to build up. From this stress, the pressure will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of seismic waves, to travel from the focus towards the epicentre. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the EPICENTRE.

SEISMIC WAVES (energy waves) travel out from the focus.

The point at which pressure is released is called the FOCUS.



HIC - CS: L'Aquila, Italy 2009

On 6th April 2009 an earthquake measuring 6.3 on the Richter scale struck L'Aquila in the Abruzzo region of Italy.
The earthquake's epicentre was seven kilometres northwest of L'Aquila.

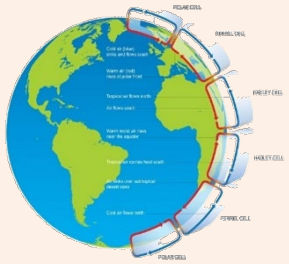
Effects
As a direct result of the earthquake, an estimated 308 people were killed, 1,500 were injured and 67,500 were made homeless.
many churches, medieval buildings and monuments with considerable cultural value were destroyed

Responses
For those made homeless, hotels provided shelter for 10,000 people and 40,000 tents were given out. Some train carriages were used as shelters.
Homes took several years to rebuild and historic centres are expected to take approximately 15 years to rebuild.

Global pattern of air circulation

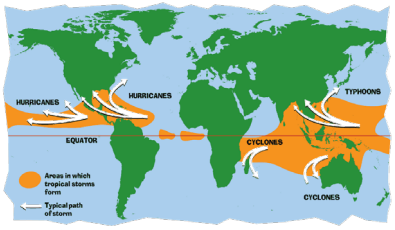
Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.

Hadley cell	Largest cell which extends from the Equator to between 30° to 40° north & south.
Ferrel cell	Middle cell where air flows poleward between 60° & 70° latitude.
Polar cell	Smallest & weakness cell that occurs from the poles to the Ferrel cell.



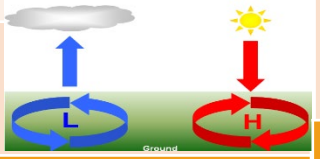
Distribution of Tropical Storms.

They are known by many names, including hurricanes (North America), cyclones (India) and typhoons (Japan and East Asia). They all occur in a band that lies roughly 5-15° either side of the Equator.



High and Low Pressure

Low Pressure	High Pressure
Caused by hot air rising. Causes stormy, cloudy weather.	Caused by cold air sinking. Causes clear and calm weather.



Formation of Tropical Storms

1	The sun's rays heats large areas of ocean in the summer and autumn. This causes warm, moist air to rise over the particular spots
2	Once the temperature is 27°, the rising warm moist air leads to a low pressure. This eventually turns into a thunderstorm. This causes air to be sucked in from the trade winds.
3	With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to spin.
4	When the storm begins to spin faster than 74mph, a tropical storm (such as a hurricane) is officially born.
5	With the tropical storm growing in power, more cool air sinks in the centre of the storm, creating calm, clear condition called the eye of the storm.
6	When the tropical storm hits land, it loses its energy source (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Changing pattern of Tropical Storms

Scientist believe that global warming is having an impact on the frequency and strength of tropical storms. This may be due to an increase in ocean temperatures.

Management of Tropical Storms

Protection Preparing for a tropical storm may involve construction projects that will improve protection.	Aid Aid involves assisting after the storm, commonly in LIDs.
Development The scale of the impacts depends on the whether the country has the resources cope with the storm.	Planning Involves getting people and the emergency services ready to deal with the impacts.
Prediction Constant monitoring can help to give advanced warning of a tropical storm	Education Teaching people about what to do in a tropical storm.

Primary Effects of Tropical Storms

- The intense winds of tropical storms can destroy whole communities, buildings and communication networks.
- As well as their own destructive energy, the winds can generate abnormally high waves called storm surges.
- Sometimes the most destructive elements of a storm are these subsequent high seas and flooding they cause to coastal areas.

Secondary Effects of Tropical Storms

- People are left homeless, which can cause distress, poverty and ill health due to lack of shelter.
- Shortage of clean water and lack of proper sanitation makes it easier for diseases to spread.
- Businesses are damaged or destroyed causing employment.
- Shortage of food as crops are damaged.

Case Study: Typhoon Haiyan 2013

Causes

Started as a tropical depression on 2rd November 2013 and gained strength. Became a Category 5 "super typhoon" and made landfall on the Pacific islands of the Philippines.

Effects

- Almost 6,500 deaths.
- 130,000 homes destroyed.
- Water and sewage systems destroyed had caused diseases.
- Emotional grief for dead.

Management

- The UN raised £190m in aid.
- USA & UK sent helicopter carrier ships deliver aid remote areas.
- Education on typhoon preparedness.

Case Study: UK Heat Wave 2003

Causes

The heat wave was caused by an anticyclone (areas of high pressure) that stayed in the area for most of August. This blocked any low pressure systems that normally brings cooler and rainier conditions.

Effect

- People suffered from heat strokes and dehydration.
- 2000 people died from causes linked to heatwave.
- Rail network disrupted and crop yields were low.

Management

- The NHS and media gave guidance to the public.
- Limitations placed on water use (hose pipe ban).
- Speed limits imposed on trains and government created 'heatwave plan'.

What is Climate Change?

Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion years.

Recent Evidence for climate change.

Global temperature	Average global temperatures have increased by more than 0.6°C since 1950.
Ice sheets & glaciers	Many of the world's glaciers and ice sheets are melting. E.g. the Arctic sea ice has declined by 10% in 30 years.
Sea Level Change	Average global sea level has risen by 10-20cms in the past 100 years. This is due to the additional water from ice and thermal expansion.

Enhanced Greenhouse Effect

Recently there has been an increase in humans burning fossil fuels for energy. These fuels (gas, coal and oil) emit greenhouse gases. This is making the Earth's atmosphere thicker, therefore trapping more solar radiation and causing less to be reflected. As a result, the Earth is becoming warmer.

Evidence of natural change

Orbital Changes	Some argue that climate change is linked to how the Earth orbits the Sun, and the way it wobbles and tilts as it does it.
Sun Spots	Dark spots on the Sun are called Sun spots. They increase the amount of energy Earth receives from the Sun.
Volcanic Eruptions	Volcanoes release large amounts of dust containing gases. These can block sunlight and results in cooler temperatures.

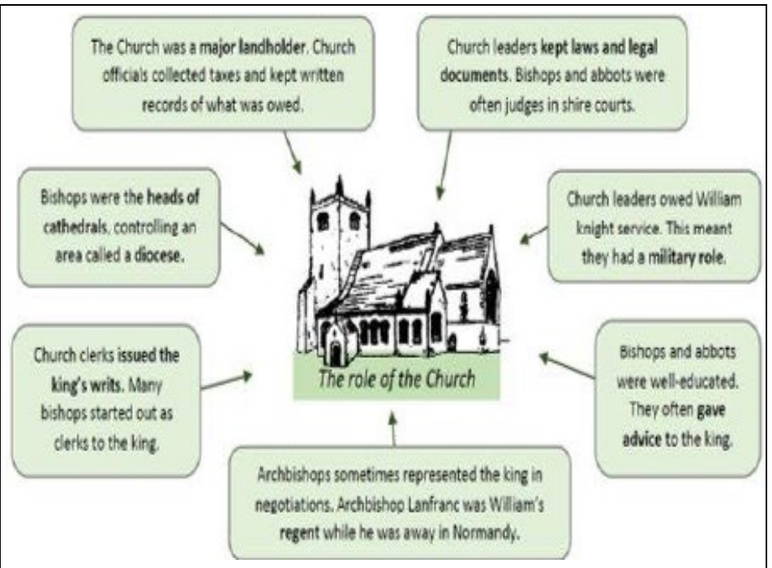
Managing Climate Change

Carbon Capture This involves new technology designed to reduce climate change.	Planting Trees Planting trees increase the amount of carbon is absorbed from atmosphere.
International Agreements Countries aim to cut emissions by signing international deals and by setting targets.	Renewable Energy Replacing fossil fuels based energy with clean/natural sources of energy.

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

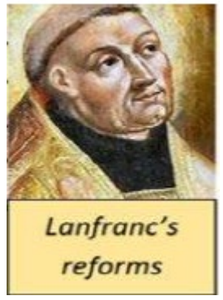
Lanfranc was an Italian monk who had run St. Stephen's monastery in Normandy.
He was heavily involved in changes to the Church.
Within about 50 years, every English church and cathedral had been rebuilt in Norman style.
Although most priests were still Anglo-Saxons, after 1070 there was only one Anglo-Saxon 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 Y10 Spanish Education and Work

¿Qué te gusta estudiar? ¿Qué te gustaría ser / hacer en el futuro? ¿Qué planes tienes?

OPINION	NOUN
Me encanta(n) = I love	el inglés = English
Me chifla(n) = I love	el dibujo = art
Me mola(n) = I love	el español = Spanish
Me flipa (n) = I love	el alemán = German
Me gusta(n) mucho = I really like	el francés = French
	el comercio = business studies
Me gusta(n) = I like	el teatro = drama
Me interesa(n) = I'm interested in	la cocina = food technology
	la biología = biology
Me da(n) igual = I don't care about	la química = chemistry
No me importa(n) = I don't care about	la física = physics
No me interesa(n) = I'm not interested in	la religión = RE
No me gusta = I don't like	la informática = ICT
No me gusta(n) nada = I really don't like	la historia = history
	la música = music
Detesto = I hate	la geografía = geography
Odio = I hate	la educación física = PE
	la tecnología = technology
	las ciencias = science
	las matemáticas = maths
No aguanto = I can't stand	las asignaturas = subjects

CONNECTIVE because	In my opinion	I think that it is / they are	QUALIFIER	ADJECTIVE
porque	a mi modo de ver		demasiado = too	aburrido/a/os/as = boring
		creo que es / son	muy = very	bueno/a/os/as = good
	en mi opinión		super = very	divertido/a/os/as = fun
dado que		pienso que es / son	tan = so	obligatorio/a/os/as = compulsory
	para mí		bastante = quite	entretenido/a/os/as = entertaining
puesto que		considero que es / son	un poco = a bit	educativo/a/os/as = educational
	desde mi punto de vista			estupendo/a/os/as = great
ya que		me parece que es / son		interesante(s) = interesting
	a mi juicio			emocionante(s) = exciting
aunque = although				importante(s) = important
				fácil /faciles = easy
				útil /utiles = useful
				inútil / inutiles= useless
				difícil / dificiles = difficult
				fenomenal(es)= great
				genial(es) = great

CONNECTIVE	VERB	NOUN
Siempre = always	estudio = I study estudiamos = we study	en la biblioteca = in the library muchas asignaturas = lots of subjects
Casi siempre = almost always	escucho = I listen escuchamos = we listen	al profesor = to the teacher a la directora = to the head teacher música = music
Normalmente = normally	hablo = I speak hablamos = we speak	con mis amigos = with my friends con mis compañeros = with my friends
Por lo general = Generally	llevo = I wear llevamos = we wear	el uniforme = uniforme una chaqueta = a blazer una corbata = a tie
A menudo = often	veo = I watch vemos = we watch	un vídeo = a video
A veces = sometimes	leo = I read leemos = we read	un libro = a book en la biblioteca = in the library
De vez en cuando = sometimes	como = I eat comemos = we eat	en la cantina = in the canteen un bocadillo = a sandwich una pizza = a pizza
Rara vez = rarely	bebo = I drink bebemos = we drink	en clase = in class en el laboratorio = in the laboratory agua mineral = water una limonada = a lemonade un zumo de naranja = an orange juice
Casi nunca = Almos never	uso = I use usamos = we use	los campos de deporte = the sports field las instalaciones = the facilities el patio = the playground los ordenadores = the computers
Nunca = never	escribo = I write escribimos = we write	en mi cuaderno = in my exercise book en mi agenda = in my planner

Verb	Infinitive
Se debe = you must	usar el móvil en clase = use your phone in class
No se debe – you mustn't	llevar piercings en el insti = wear piercings in school
No se permite = You are not allowed	correr en los pasillos = run in the corridors
Está prohibido = It is forbidden	ser agresivo o grosero = be aggressive or rude
Se puede = you can	llevar uniforme = wear uniform
No se puede = you can't	ser puntual = be on time
Se debería = you should No se debería = you shouldn't	comer chicle = chew gum
Se podría = you could No se podría = you couldn't	salir del instituto durante el día escolar = leave school during the school day

el acoso escolar = bullying

las normas / las reglas = rules

la presión del grupo = peer pressure

sufrir el estrés de los exámenes = suffer exam stress

llevar el uniforme = to wear uniform

el próximo trimester = next term

el recreo = break

la hora de comer = lunch hour

los deberes = homework

suspender una prueba = to fail a test

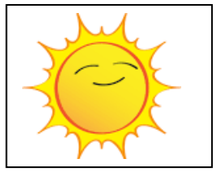
aprobar mis exámenes = to pass exams

hacer novillos = to skip lessons

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

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

Half-Term 1 Subject French Year 11 Holidays Threshold Concept Link(s): Expressing opinions; past, present and future tense.



Qu'est-ce que tu aimes faire pendant les vacances ?

Opinions – Week 1					
Opinion	**Infinitive**	**Because**	**In my opinion**	**Verb**	**Infinitive**
Ça me dérange de = I get annoyed	aller – to go	parce que	à mon avis		se reposer – relax
Je suis fasciné par = It fascinates me	voyager – to travel				lire – read
Je suis amusé par – I have fun	séjourner – to stay				prendre des photos – take photos
Je suis déçu par – It disappoints me	nager – to swim				acheter des souvenirs – buy souvenirs
Je m'en fiche de – I'm not bothered about	faire du ski– to ski	car	selon moi	je peux =	parler la langue– speak the language
J'apprécie = I appreciate	voler – to fly			I can	faire du tourisme – go sightseeing
Je préfère – I prefer	acheter – to buy				essayer des repas locaux– try local dishes
Il vaut mieux – it's worth	se reposer – to rest				découvrir la culture – discover the culture
J'en ai marre de – I'm fed up of	se bronzer – to sunbathe				envoyer les cartes postales – send postcards
Je suis d'accord avec – I am in favour of	danser – to dance				manger la nourriture typique = eat typical food

Present Tense – Week 2							
Verb	**Time expression**	**Nouns**	**Connective**	**Noun**	**Verb**	**Infinitive**	**Nouns**
Je vais = I go	toujours = always	en Espagne = to Spain en France = to France	mais = but	je = I	préfère = prefer	aller = to go	en italie = to Italy au Portugal = to Portugal
Je voyage = I travel	presque toujours = nearly always	en avion = by plane en voiture = by car		mon frère ma sœur ma mère ma famille mon père mon cousin ma grand-mère		voyager = to travel	en bateau = by boat en train = by train
Je séjourne = I stay	normalement = normally	dans une caravane = in a caravan dans une tente = in a tent	cependant = however		préfère = prefers	séjourner = to stay	dans un hôtel = in a hotel dans un auberge = in an inn
Je nage = I swim	souvent = often	dans la mer = in the sea dans une piscine = in an indoor pool				nager = to swim	dans un lac = in a lake dans une piscine = in a swimming pool
J'achète = I buy	généralement = generally	les souvenirs = souvenirs un postal = a postcard		mes parents et moi ma mère et moi ma grand-père et moi mon frère et moi mon père et moi mon oncle et moi	préférons = prefer	acheter = to buy	un porte-clés = a keyring un béret = béret du fromage = some cheese
Je me bronze = I sunbathe	quelquefois = sometimes	à la plage = on the beach à côté de la piscine = next to the pool	pourtant = however			se bronzer = to sunbathe	à la plage = on the beach à côté de la piscine = next to the pool
Je visite = I visit	parfois = sometimes	les monuments = the monuments le château = the castle l'aquarium = the aquarium				visiter = to visit	le stade = the stadium le musée = the museum le parc d'attractions = the theme park
Je mange = I eat	rarement = rarely	les escargots = snails la tartiflette = cheesy potatoes	alors que = while	mes parents mes grands-parents mes amis mes cousins	préfèrent = prefer	manger = to eat	la nourriture typique = typical food les repas locaux = local dishes
Je bois = I drink	de temps en temps = from time to time	de la limonade = lemonade de l'eau minérale = water				boire = to drink	le vin rouge = red wine la bière = beer
Je lis = I read	en général = generally	un roman = a novel un livre = a book	tandis que = whilst			lire = to read	un magazine = a magazine un journal = a newspaper

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	je suis allé = I went	au Portugal = to Portugal aux Etats-Unis = to the USA	et = and	c'était = it was	trop = too	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
	j'ai voyagé = I travelled	en car = by coach en avion = by plane	mais = but	j'ai trouvé que c'était = I found that it was	très = very	
	j'ai bu = I drank	du coca = some coke du jus de pomme = apple juice	cependant = however	j'ai pensé que c'était = I thought that it was	un peu = a bit	
	j'ai lu = I read	un roman = energy un journal = petrol	pourtant = however		assez = quite	
	j'ai visité = I did	le stade = the stadium le musée = the museum le parc d'attractions = the theme park	en revanche = on the other hand	j'ai cru que c'était = I believed that it was	vraiment = really	
	je me suis bronzé = I sunbathed	à la plage = on the beach à côté de la piscine = next to the pool	toutefois = however	j'ai consideré que c'était = I considered that it was	extrêmement = extremely	
	j'ai mangé = I ate	une tarte tatin = caramelised upside-down apple tart un pain au chocolat = chocolate croissant	néanmoins = nevertheless	ce n'était pas = it was not		
	j'ai séjourné = I stayed	dans un hôtel = in a hotel dans un auberge de jeunesse = in a youth hostel				

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	j'irai = I will go	au Portugal = to Portugal aux Etats-Unis = to the USA	parce que	à mon avis		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 visiterai = I will visit	les magasins locaux = the local shops le parc d'attractions = the theme park			je pense que ce sera	
	je voyagerai = I will travel	en car = by coach en avion = by plane	car	selon moi	je considère que ce sera	
	je voudrai = I will want	découvrir la culture – discover the culture parler la langue– speak the language			je crois que ce serait	
	je mangerai = I will eat	une tarte tatin = caramelised upside-down apple tart un pain au chocolat = chocolate croissant	puisque	pour moi		
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	j'irais = I will go	au Portugal = to Portugal aux Etats-Unis = to the USA		en ce qui me concerne	il me semble que ce serait	
	je visiterais = I will visit	les magasins locaux = the local shops le parc d'attractions = the theme park				
	je voyagerais = I will travel	en car = by coach en avion = by plane				
	je voudrais = I will want	découvrir la culture – discover the culture parler la langue– speak the language				
	je mangerais = I will eat	une tarte tatin = caramelised upside-down apple tart un pain au chocolat = chocolate croissant				

Half-Term 2 Year 11 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
	j'ai travaillé = I worked	à l'école = at school aux cours = in lessons				
	j'ai parlé = I spoke	avec mes amis avec le professeur				
	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	j'irais = I would go	au Portugal = to Portugal aux Etats-Unis = to the USA				
	je voudrais être = I would like to be	mécanicien = a mechanic maçon = a builder infirmier = a nurse facteur = a delivery driver plombier = a plumber				
	je travaillerais = I would work	à l'étranger = abroad				

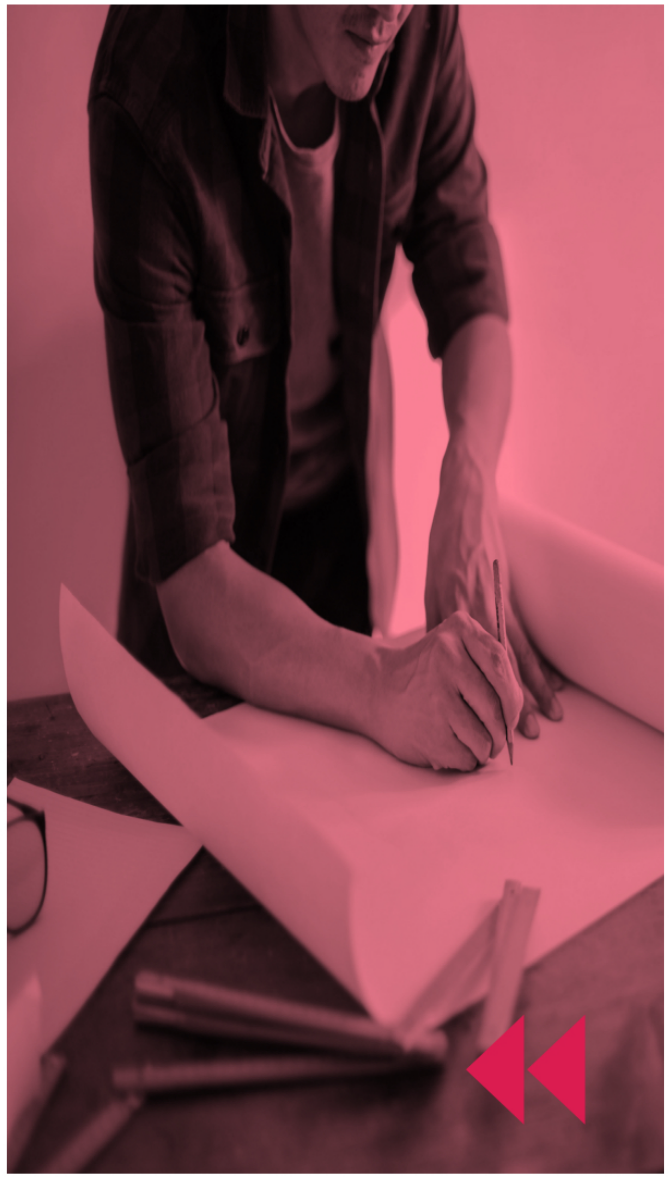
Quand je serai plus âgé(e) = When I am older	**je ferais = I would do**	**un stage = a work experience placement** **un emploi d'été = a summer job**				

Musical Theatre / Choreography (Musical Theatre – see also Music and Acting)

Accent: a movement or shape performed to give emphasis
Accumulation: one dancer performs a phrase, other dancers join in one after another until performing in unison
Actions: travelling, turning, elevation, leaps
Adagio: slow, flowing and graceful movements
Alignment: correct placement of body parts in relation to each other, important for health and safety
Allegro: fast, lively movements
Arabesque: standing on one leg, working leg is fully straight, extending long behind the dancer
Attitude: standing on one leg with the other lifted (front or back). The leg in the air is bent, usually to a 145 degree
Beat: rhythmic unit of time
Binary: structure of a dance, consisting of two parts **AB**
Book: the dialogue and storyline of the musical
Canon: choreographic device where dancers perform the same movement at different times, overlapping the previous one
Chorus: type of refrain, repeated between versus / group of performers
Contact Improvisation: creation of movement without planning, where working with another dancer, parts of the body must always be touching
Contraction: curving the spine forward, starting from hips
Contrast: movements or shapes with nothing in common
Duet: performance with two dancers
Dynamics: qualities of the movement based on speed, strength, flow
Episodic – choreography with several sections, linked by a theme
Improvisation: creation of movements without planning
Inversion: performing phrases or sections upside down
Isolations: movement which only involves one part of the body
Jukebox Musical: a musical with a plotline based around existing songs
Mirroring: two or more dancers perform the same movement while facing each other
Motif: a movement / phrase repeated in different ways
Narrative: the story of the dance
Phrase: a short sequence of linked movements
Posture: the way the body is held
Relationships: the way dancers interact
Repetition: repeating movements or motifs
Retrograde: reversing the actions of a phrase or sequence
Revue: a musical show without a narrative storyline
Ronde de Jambe: movement where the leg is moved in a circular motion
Rondo: structure, three of more sections, alternating between the main theme and additional ones – **ABACAD**
Solo: one dancer
Syncopation: movements which do not occur on the main beat
Tempo: the speed of the dance
Ternary: structure of a dance, in three parts – **ABA**
Transitions: movements linking phrases or sections
Unison: two or more dancers performing the same move at the same time

Set Design

Amphitheatre: a circular or oval open-air venue
Apron: part of a proscenium arch stage which extends past the curtain
Auditorium: the part of the theatre where the audience sit, often referred to as the 'house'
Backdrop: large canvas or cloth on the back wall, usually painted and hung
Brace: support used to strengthen scenery, for example a flat
C.A.D: computer aided design
Carpentry: building set pieces using structures of wood
Composite Set: a set which remain the same throughout a play, often reflects a mood or theme
Counterweight System: a series of pulleys and weights used to balance and move scenery
Cue: a signal for a scene change
Cyclorama: a white wall or cloth at the back of the stage where light of images can be projected
Downstage: the area of stage closest to the audience
Flat: a frame covered with wood or canvas, used to create walls or scenery onstage
Fly System: a system of ropes, weights and pulleys used to move scenery vertically
Gauze: material which can be lit from both sides, it is transparent when lit from the side and opaque when lit from the front
Ground Plan: a scale drawing which shows the layout of the stage and set pieces
Model Box: a 3D scale model representation of the set
Muslin: cotton fabric used to create backdrops
Naturalistic: style of performance, a set would need to be realistic and believable
Promenade Theatre: the audience move around different spaces and follow the action rather than sitting in one place
Properties: items used in performance, either on stage or personal props for a character, for example drinking glasses, telephone
Proscenium Arch: type of staging where the audience face the main stage
Rake: a sloped stage
Revolve: staging which can rotate
Rostrum: raised platform
Sight Lines: what the audience can see from their seats
Spattering: a painting technique that involves flicking small droplets of paint onto a surface to create texture or a speckled effect
Strike: the process of taking down a set
Tab: a curtain which splits in the middle and opens to the side
Technical Rehearsal: in theatre, a rehearsal where the play is run from cue to cue
Thrust Stage: staging extends out into the audience on three sides
Trap: an opening in the stage floor
Truck: a moveable platform on wheels
Upholstery: the materials used to cover furniture
Upstage: area of the stage furthest from the audience
Vomitory: (Vom) an entrance or exit leading directly to the seating area
Wings: the area to the side of the performance space



Make Up and Hair Design

Acetone: solvent used to remove skin adhesive from wigs
Alginate: a powder made from seaweed, used to make casts of body parts
Applicator: a tool used to apply make-up, for example, brush, sponge or wand
Backcomb: combing hair from the end of the strand towards the scalp, creating a thicker look
Bake: technique involving applying a thick layer of translucent powder over foundation, then leaving it to sit before dusting off
Balayage: hair colouring technique
Bald Cap: usually made of silicone or latex
Base: initial layer of make-up applied to create an even skin tone
Blend: merging different make up colours or products to create a smooth finish
Braid: hairstyle created by weaving strands of hair together
Collodion: liquid make up for creating scars
Contour: technique used to define areas of the face
Derma Wax: putty used to create skin wounds
Dewy: a make-up finish giving a healthy, radiant glow
Exfoliate: process of removing dead skin cells from the surface of the skin
Flashback: when the camera bounces off make up, for example, some powders, creating a white appearance
Greasepaint: make up supplied in stick form
Guide Comb: comb with graduated teeth
Hairpiece: a small section of hair attached to the scalp or performer's own hair to create volume or a specific style
Halo Eye: technique used where a lighter colour is applied to the centre of the eyelid, this is surrounded by a darker colour
Henna: a natural dye, often used to create temporary tattoos or hair colour
Highlighting: using a lighter shade of colour to bring attention to certain features
Illuminator: product used to add a subtle glow or shimmer
Infill: adding new hairs or filling gaps in eyebrow or eyelash extensions
Intensity: level of pigmentation in a product
Iridescence: gives off a shimmering effect in the light
Kabuki Brush: a dense, short handled brush
Kohl: eyeliner ingredient made from soot or charcoal
Liquid Latex: used for special effects, can be applied on skin to create wrinkles
Matte: a finish which has no shine
Neutralising: using make up to balance out certain colours, for example redness
Pancake: water based make up powder, applied with a wet sponge
Pigment: the colour or tint of make up or dye
Prosthetics: the use of sculpting and moulding to create a different look, for example different facial features. Usually glued to the performer, rather than painted or moulded onto the skin like in SFX
SFX: special effects
Waterline: area below the eye but above the lower lashes
Wig Block: head shaped block
Xanthan Gum: natural ingredient often used as a thickener

TIME SIGNATURE / METRE

(How the pulse is grouped into bars)

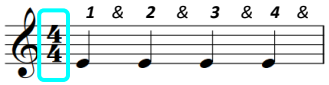
Common Time
4/4 is also known as common time. Instead of 4/4 you can write: 𝐜

Cut Common Time
2/4 is also known as cut-common time. Instead of 2/4 You can write: 𝐜

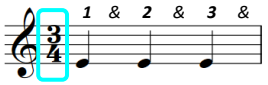
Time Signatures

Written at the start of the music (and anywhere it changes) to show how many beats there are per bar, plus what type of beat

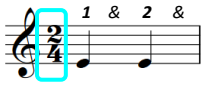
Simple Time Signatures **Each beat can be divided into two equal halves*



4 crotchet beats per bar

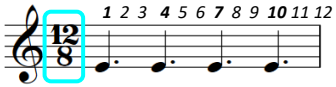


3 crotchet beats per bar

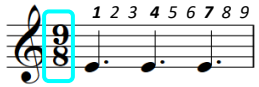


2 crotchet beats per bar

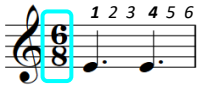
Compound Time Signatures **Each beat is dotted and can't be divided into two equal halves*



4 dotted crotchet beats per bar (12 quavers)



3 dotted crotchet beats per bar (9 quavers)



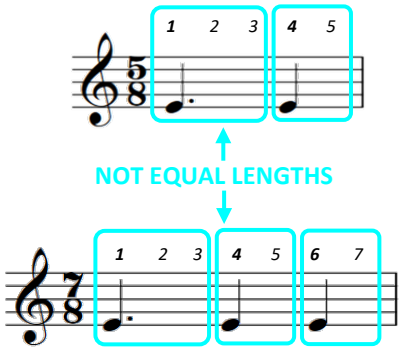
2 dotted crotchet beats per bar (6 quavers)

Listening Examples Go to Youtube to hear some examples of different metres:

2/4	Slaidburn March	**A march is usually in 2/4 (Left, Right, Left, Right… = 1, 2, 1, 2…)*
3/4	Shostakovich's Waltz No.2	**A waltz is a dance, usually in 3/4*
4/4	All That Jazz (from Chicago)	**Chicago is a Musical*
5/4	Take Five (By Dave Brubeck)	**Listen out for the jazz style*
7/4	The start of Money (By Pink Floyd)	*Listen out for the opening bass riff
6/8	We Are The Champions (By Queen)	**Queen are a famous British Rock Band*
12/8	The Way You Make Me Feel (By Michael Jackson)	**Count 1&a 2&a 3&a 4&a*

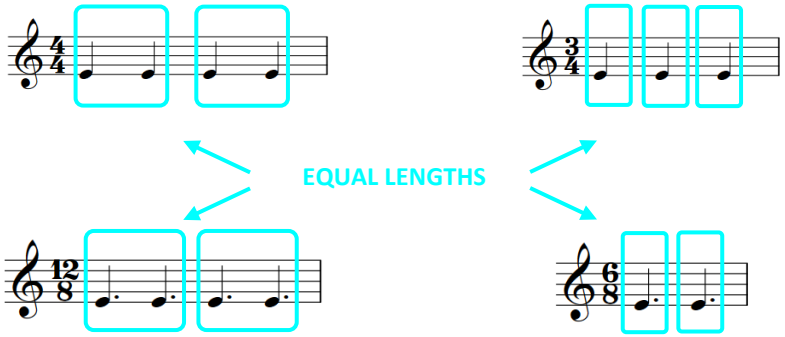
Irregular Time Signatures

Time signatures that <u>can't</u> be divided into equal groups of 2 or 3.



Regular Time Signatures

Time signatures that <u>can</u> be divided into equal groups of 2 or 3.



Writing Your Own Music

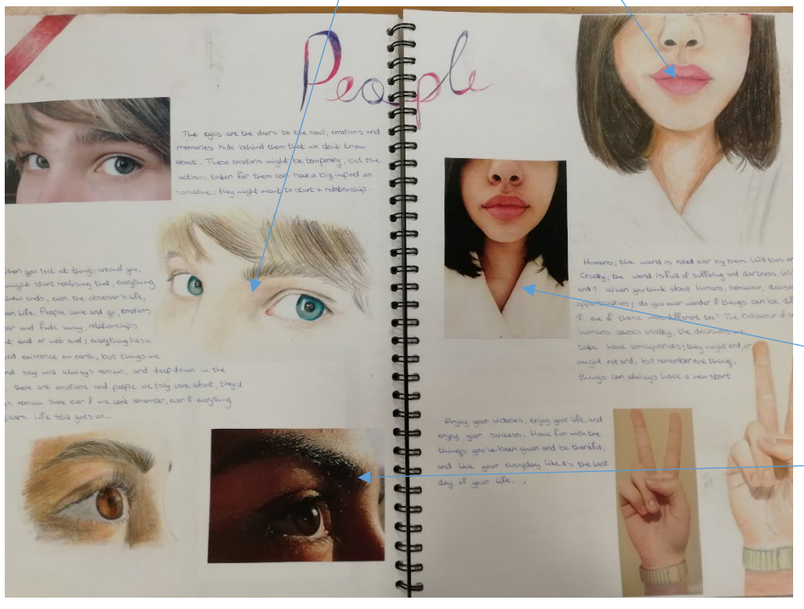
You must make sure every bar adds up to the correct number of beats.
Changing metre is a good way to create contrast in your work.

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.



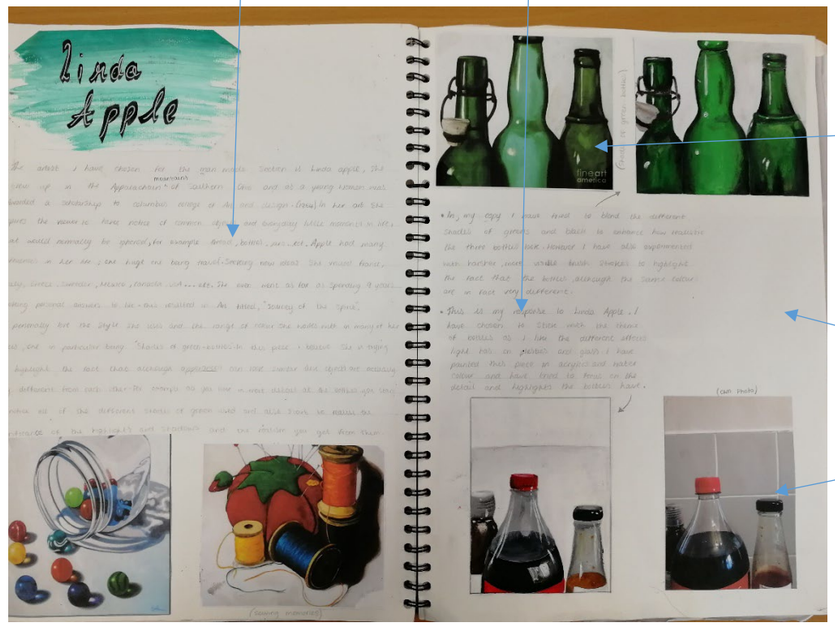
Use your own photos not pictures from the internet.

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.		

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	

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

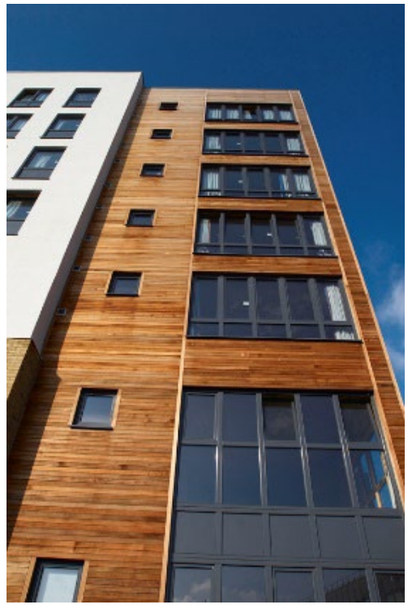
Example: _____Thatch_____

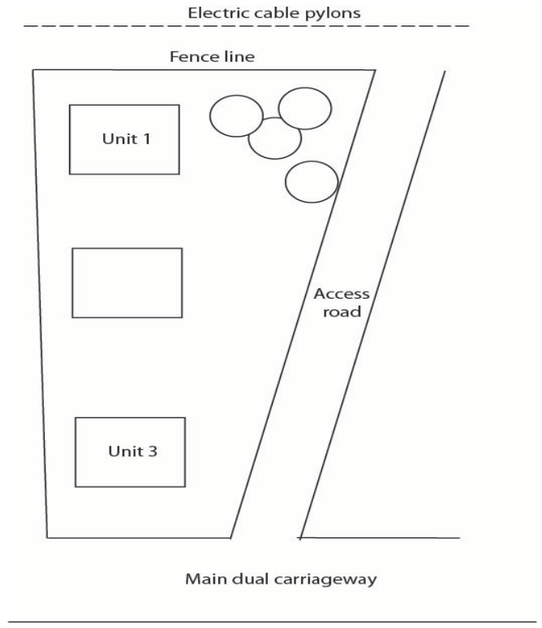
Use: ____Sustainable roof construction_____

3 Insulation materials

Example: ___Sheep's wool insulation_____

Use: _____Loft insulation_____





HT2 Y11 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.

Y10 Subject **Christian Practices 1**

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

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

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

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

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.

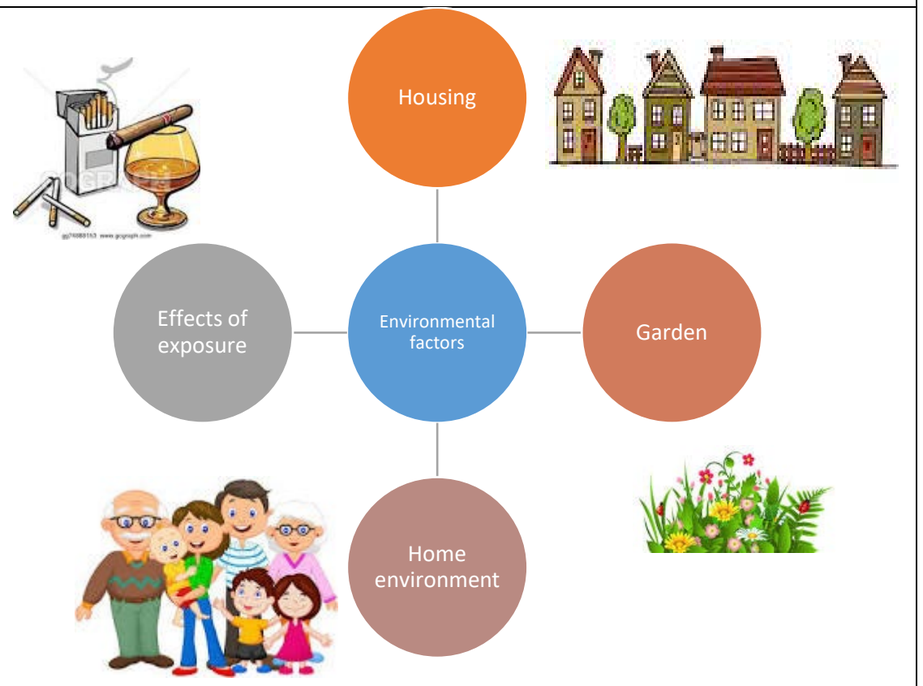
Development	
What is development?	The skills and knowledge we gain over time.
Do children develop at an even pace across all areas?	No some may have good language skills but not be able to kick a ball.
Why is it important to know the milestones for the different ages?	Can help you plan activities and 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.

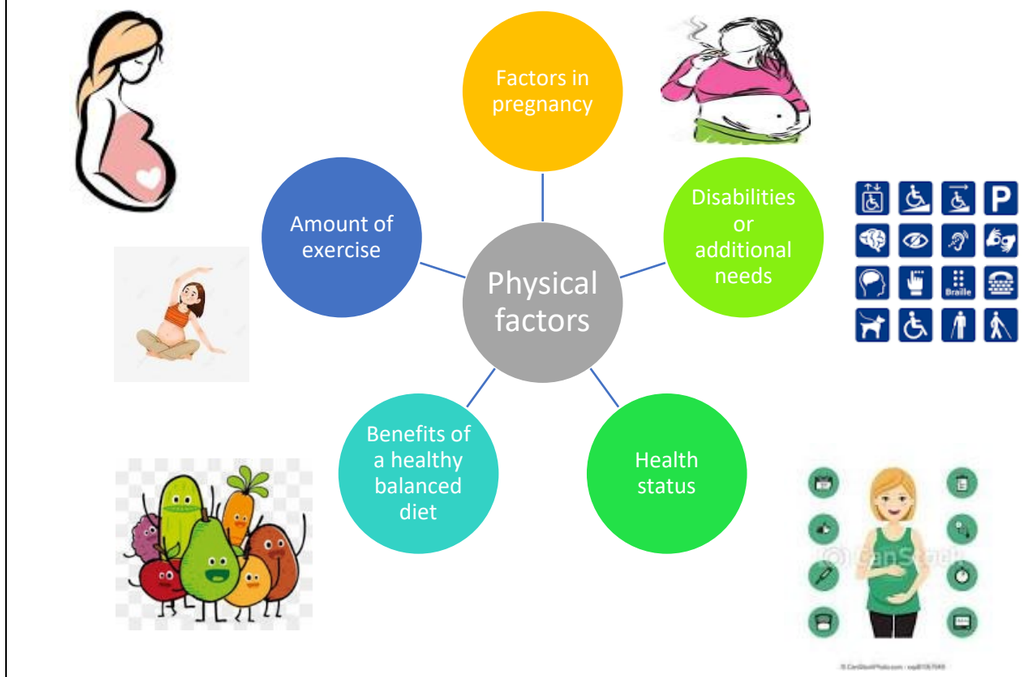
Development of different ages across the development areas			
	0- 18 months	18 months – 3 years	3 years -5 years
Physical	**3m** reflexes disappear; lift head + shoulders; watches fingers. **6m** rolls + turns; sits with support; holds a toy. **9m** sits; crawls; stands; passes toys; drinks cup. **12m** 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.**

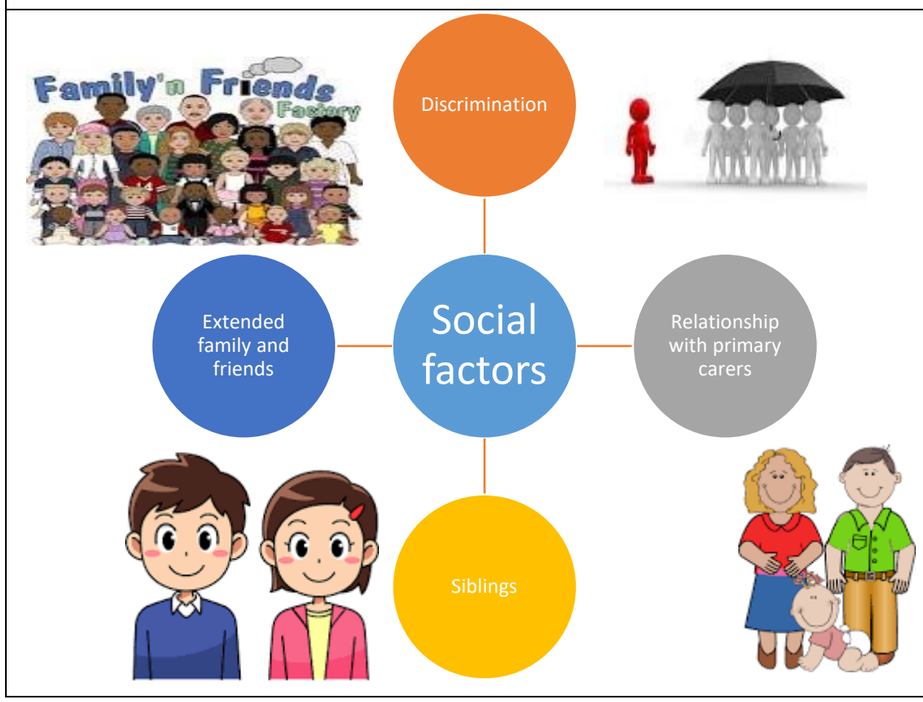
Environmental Factors that can impact a child's development



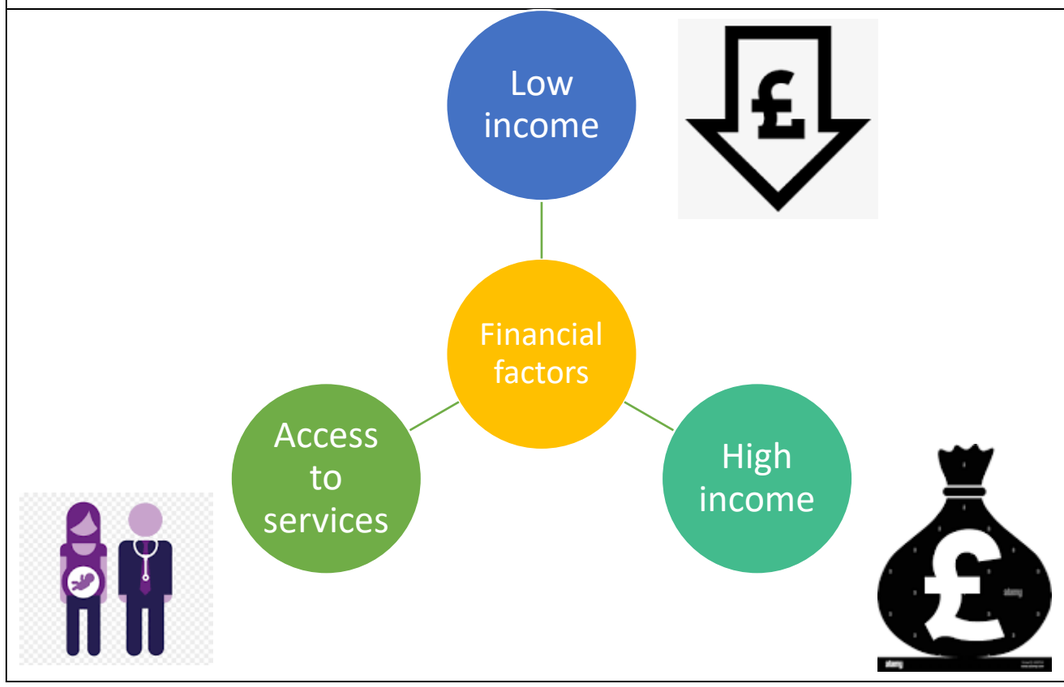
Physical Factors that can impact a child's development



Social Factors that can impact a child's development

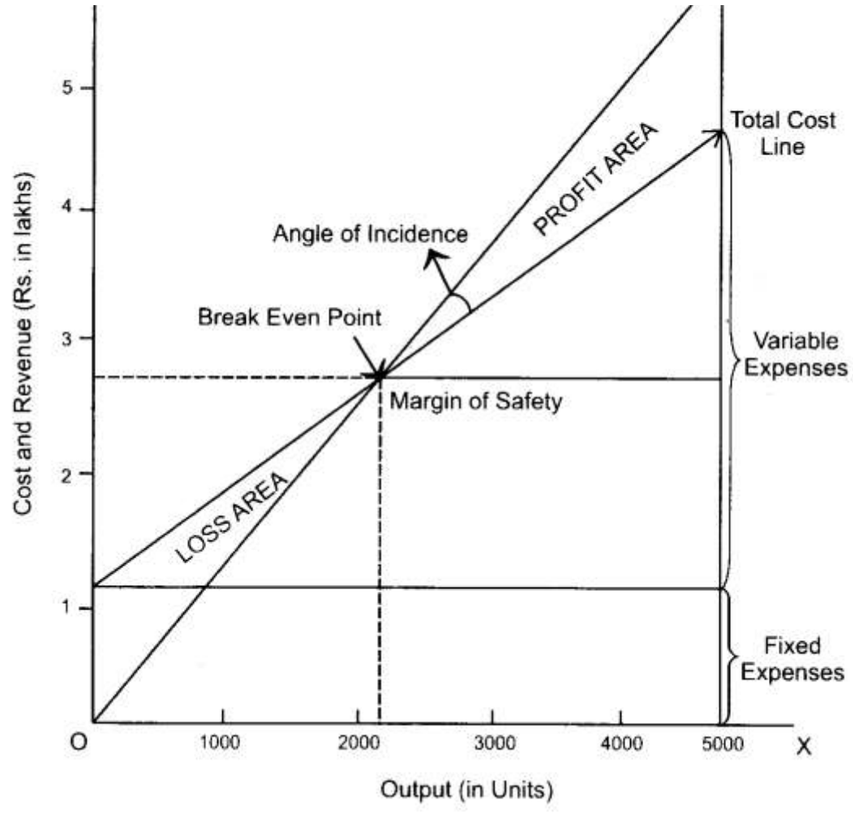


Financial Factors that can impact a child's development



Half-Term **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

BTEC Sport

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.