Student Name:

MAGNUS
CHURCH OF ENGLAND
ACADEMY

Knowledge Organiser: September 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

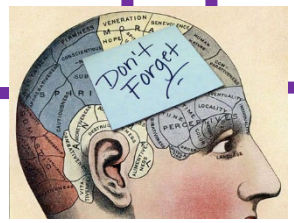
8. Write a set of test questions for yourself using the organiser.
    - Answer these without the organiser the next day.
    - Swap your questions with a friend to increase challenge.
    - Turn your questions in to a game by putting them on cards and playing with friends.

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!



Year 10 Half Term 1 Key Vocabulary

English Language	**English Literature**	**Maths - F**	**Maths - H**	**Science – Biology**	**Science – Chemistry**
Immense Condemn Unanimous Defiance Exception Dramatic Exciting Tone Structure impression	Apparition Kinsman Prophecy Remorse Valiant Hamartia Jacobean Regicide Equivocation Subvert			Pathogen Communicable disease Non-communicable disease Vaccination Antibiotic Painkiller Double-blind trial Antibodies Macrophage	Atom Ion Allotrope Intermolecular force Electrostatic attraction Delocalised electron
Science – Physics	**History**	**Geography**	**French**	**Core RS**	**GCSE RS**
Alternating current Direct current Mains electricity Step-up transformer Step-down transformer National Grid Double-insulated	Unanimous Veto Civil Service Mitigation Refugee Geneva Collective security Covenant Economic Sanctions Moral Condemnation	Hazard Risk Tectonic Climate Climate Chane Cause Effect Response Short term Long term	Noun Adjective Verb Connective Opinion verb Infinitive Frequency expression Conjugate Adjectival agreement Wow phrase Exclamation	Retribution Deterrence Reformation Revenge Forgiveness Death penalty Oppose Support Suffering Corporal punishment	Worship Liturgical worship Non-liturgical worship Informal worship Private worship Nonconformist Sacraments Holy Communion Agape Mission
Business	**Child Development**	**Performing Arts – Acting**	**Performing Arts – Musical Theatre**	**Art**	**Spanish**
Obsolete Enterprise Branding Unique selling point (USP) Competitor Market segmentation Primary research Secondary research Market mapping	Growth Head Circumference Centile chart Nutrients Holistic development Developmental norms Factors Development Hormones Health visitors	Forum Theatre Improvisation Action Relationship Form Cross-cutting Marking the Moment Thought Tracking Hot seating Narration	Character Rhythm Style Musicality Fluidity Spatial Awareness Vocal Technique Interpretation Intonation Projection		Noun Adjective Connective Opinion Verb Infinitive Frequency Expression Conjugate Adjectival Agreement Wow Phrase Exclamation
Technology	**iMedia**	**Hospitality and Catering**	**Music**	**Construction**	**Sport**
			Repetition Imitation Sequence Ostinato Drone Arpeggio/broken chord Alberti bass Anacrusis Dotted rhythms Syncopation		Leadership Teamwork Intensity Moderate Vigorous Access Governing bodies Aerobic Flexibility Grass roots

Year 10 — Component 2 English Language

1. Tier 2 Vocabulary : Toughest Prison' and 'Notes for General

immense	A large amount; great; massive.
prolonged	Continuing for a long time or longer than usual; lengthy.
inflicts	Causes (something unpleasant or painful) to be suffered by someone or something.
immeasurably	To an extreme or extensive degree; immensely.
ghastly	Causing great horror or fear.
condemn	Express complete disapproval of; censure.
radiate	Diverge or spread from or as if from a central point.
dreary	Depressingly dull; repetitive.
prevails	Prove more powerful or superior.
melancholy	A feeling of pensive sadness, typically with no obvious cause.
exception	A person or thing that is excluded from a general statement or does not follow a rule.
slate	A flat plate of slate formerly used for writing on in schools.
substitute	A person or thing acting or serving in place of another.
interior	Situated on or relating to the inside of something; inner.
humanity	The quality of being humane; benevolence.

3a. Subject Terminology:

Term	Definition
Dramatic	**(Of an event or circumstance) sudden and striking.**
Exciting	**Causing great enthusiasm and eagerness.**
View	**Regard in a particular light or with a particular attitude.**
Effects	**A change which is a result or consequence of an action or other cause.**

2. Tier 2 Vocabulary: 'Whales Under Threat' and 'Aboard a Whaling Ship, 1850'

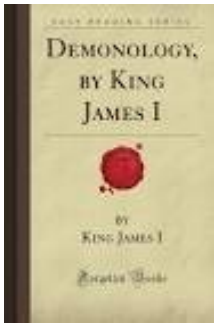
Term	Definition
commercial	making or intended to make a profit.
defiance	open resistance; bold disobedience.
laboratories	a room or building equipped for scientific experiments, research, or teaching, or for the manufacture of drugs or chemicals.
unanimous	(of two or more people) fully in agreement.
exploit	make full use of and derive benefit from (a resource).
confrontation	a hostile or argumentative situation or meeting between opposing parties.
massacred	deliberately and brutally kill (many).
ruthlessly	without pity or compassion for others.
weary	reluctant to see or experience any more of; tired of.
harpoon	a barbed missile resembling a spear that is attached to a long rope and thrown by hand or fired from a gun, used for catching whales and other large sea creatures.
hardiest	capable of enduring difficult conditions; robust.

3b. Subject Terminology:

Term	Definition
Tone	**The writer's use of words and writing style to convey his or her attitude towards a topic.**
Structure	**The arrangement of and relations between the parts or elements of something complex.**
Impression	**An idea, feeling, or opinion about something or someone, especially one formed without conscious thought or on the basis of little**

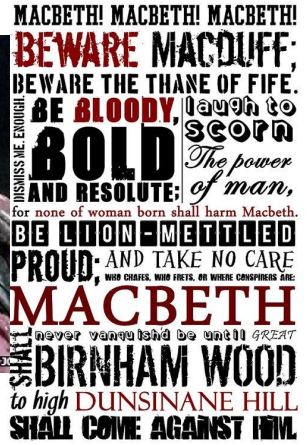
Year 10 — *'Macbeth', by William Shakespeare*

1. Context	
1606	This was when the play was written. This was during the Jacobean Era.
King James 1	James became King of England in 1603 after the death of Elizabeth 1. It was the first time that Scotland and England had been united by a monarch.
Demonology	This was the title of the book written by King James 1 in 1597 which stated how to spot witches and what should be done to stop the supernatural.
Supernatural	A manifestation or event attributed to some force beyond scientific understanding or the laws of nature. In the Jacobean era, people believed in the supernatural.
The Gunpowder Plot	This was an attempt to assassinate King James and destroy Parliament by a group of Catholic conspirators including Guy Fawkes. This took place in 1605.



2. Macbeth — Characters	
Macbeth	Starts the play as Thane of Glamis, becomes Thane of Cawdor and later King of Scotland.
Lady Macbeth	Plots the murder of Duncan. Later, she kills herself after going mad
King Duncan	King of Scotland who is murdered by Macbeth.
Malcolm	Duncan's eldest son who flees to England after his father's murder. He
Donaldbain	Duncan's youngest son who flees to Ireland.
Banquo	Soldier in the army and Macbeth's friend. He is told by the witches that his children will be kings. He is murdered by assassins hired by Macbeth.
Fleance	Banquo's son who escapes the assassination.
The Witches	Macbeth meets these after the battle and they give him prophecies.
Macduff	Thane of Fife. He goes to England and joins Malcolm when he learns his family have been murdered. He kills Macbeth in the end.
Lady Macduff	Macduff's wife who is murdered along with her children on the orders of Macbeth.
Ross	He is the messenger who tells Macduff that his family have been murdered on Macbeth's orders.
Hecate	The Goddess of witchcraft who only appears in a few scenes with the witches.

3. Plot Vocabulary	
Apparition	A ghost/ ghost-like image of a person. *The apparition of Banquo appears at the banquet.*
Kinsman	A relative/ blood relation. *Duncan describes Macbeth as his kinsman as they are distant cousins.*
Regicide	The killing of a monarch (King or Queen). *Macbeth commits regicide.*
Prophecy	A prediction of what will happen in the future. *The witches give Macbeth and Banquo prophecies.*
Remorse	A deep regret or guilt for a wrong committed. *Lady Macbeth has remorse when she is mad in Act 5, but she is remorseless when she first commits the murder of Duncan.*
Hamartia	The fatal character flaw of the tragic hero. *For Macbeth, this is his ambition.*
Thane	A man who holds land granted by the king or by a military nobleman. *Macduff is Thane of Fife whereas Macbeth begins the play as the Thane of Glamis.*
Valiant	Possessing or showing courage or determination. *Macbeth is valiant in battle.*



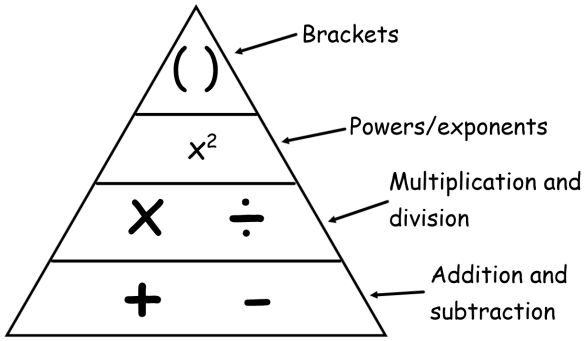
Year 10 — *'Macbeth', by William Shakespeare*

Macbeth's Character Traits	**Ambitious:** Driven by a strong desire for power and success, often at any cost. **Brutal:** Savagely violent; cruel and unfeeling. **Ruthless:** Having no pity or compassion for others. **Violent:** Using or involving physical force intended to hurt, damage, or kill. **Conflicted:** Experiencing an internal struggle or contradictory emotions. **Victimised:** Treated in a cruel or unjust way. **Hesitant:** Tending to pause or hold back due to uncertainty or reluctance. **Sinful:** Having committed an act that is considered morally wrong or an offense against divine law. **Guilt-ridden:** Feeling or suffering from guilt. **Overwhelmed:** Having too much to deal with. **Paranoid:** Suffering from a mental condition characterized by delusions of persecution, unwarranted jealousy, or grandeur. **Sleepless:** Unable to sleep. **Cowardly:** Lacking courage. **Indecisive:** Not able to make decisions quickly and effectively. **Tyrannical:** Exercising power in a cruel or arbitrary way. **Immoral:** Not conforming to accepted standards of morality. **Evil:** Profoundly immoral and wicked. **Nihilistic:** Believing that life is meaningless and that all religious and moral principles are valueless. **Dejected:** Sad and depressed; dispirited.
Lady Macbeth's Character Traits	**Ambitious:** Driven by a strong desire for power and success, often at any cost. **Despicable:** Deserving hatred and contempt. **Manipulative:** Characterized by an unscrupulous and devious desire to influence, exploit, or control another person or a situation to one's own advantage. **Deceitful:** Guilty of or involving deceit; misleading others. **Duplicitous:** Deceitful in speech or conduct, acting in two different ways to different people concerning the same matter. **Violent:** Using or involving physical force intended to hurt, damage, or kill. **Remorseless:** Without remorse; feeling no guilt or pity. **Controlling:** Exercising power or influence over something or someone. **Ruthless:** Having no pity or compassion for others. **Abandoned:** Having been deserted or cast off. **Discreet:** Careful and circumspect in one's speech or actions, especially in order to avoid causing offense or to gain an advantage. **Powerless:** Without power, influence, or control. **Guilt-ridden:** Feeling or suffering from guilt. **Helpless:** Unable to defend oneself or to act without help.

5. 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.

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

$$6 \overline{)\,1\,^{1}8\,6} = 0\,3\,1$$

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

Rounding (to different degrees of accuracy)

* 5 and above rounds up *

24.356 To the nearest integer (whole number)

24

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

24.4

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

24.36

Draw in your line then check the number to the right

Multiplying Integers

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

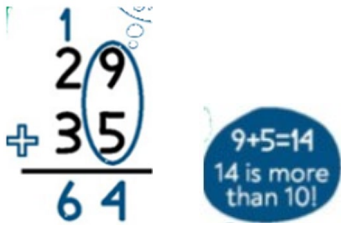
+ × + = + − × − = +

+ × − = − − × + = −

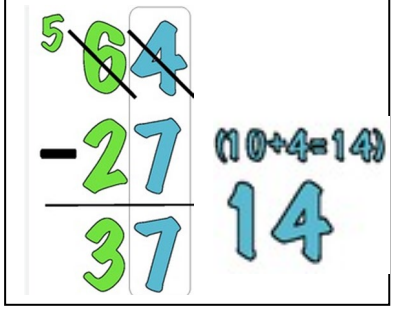
Adding Negative Numbers

+ 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



Half term 1

Mathematics and Numeracy

Number

Powers and Roots

Squares	Roots
$\pm 1^2 = 1$	$\sqrt{1} = \pm 1$
$\pm 2^2 = 4$	$\sqrt{4} = \pm 2$
$\pm 3^2 = 9$	$\sqrt{9} = \pm 3$
$\pm 4^2 = 16$	$\sqrt{16} = \pm 4$
$\pm 5^2 = 25$	$\sqrt{25} = \pm 5$
$\pm 6^2 = 36$	$\sqrt{36} = \pm 6$
$\pm 7^2 = 49$	$\sqrt{49} = \pm 7$
$\pm 8^2 = 64$	$\sqrt{64} = \pm 8$
$\pm 9^2 = 81$	$\sqrt{81} = \pm 9$
$\pm 10^2 = 100$	$\sqrt{100} = \pm 10$
$\pm 11^2 = 121$	$\sqrt{121} = \pm 11$
$\pm 12^2 = 144$	$\sqrt{144} = \pm 12$
$\pm 15^2 = 225$	$\sqrt{225} = \pm 15$
$\pm 20^2 = 400$	$\sqrt{400} = \pm 20$

Cubes	Roots
$1^3 = 1$	$\sqrt[3]{1} = 1$
$2^3 = 8$	$\sqrt[3]{8} = 2$
$3^3 = 27$	$\sqrt[3]{27} = 3$
$5^3 = 125$	$\sqrt[3]{125} = 5$
$10^3 = 1000$	$\sqrt[3]{1000} = 10$

Subject Terminology

Powers/Exponents	How many times a number is multiplied by itself
Roots	A factor of a number that, when multiplied by itself, gives the original number
Base	The number that gets multiplied by the exponent
Standard form	Numbers written as a number between $1 \leq A < 10$ multiplied by base 10 with different exponents
Ordinary form	Numbers that are not written in standard form
Prime number	A number that is divisible by only itself and 1
Highest Common Factor	The highest number that can be divided exactly into each of two or more numbers
Lowest Common Multiple	The lowest number that is a multiple of two or more numbers

HCF and LCM

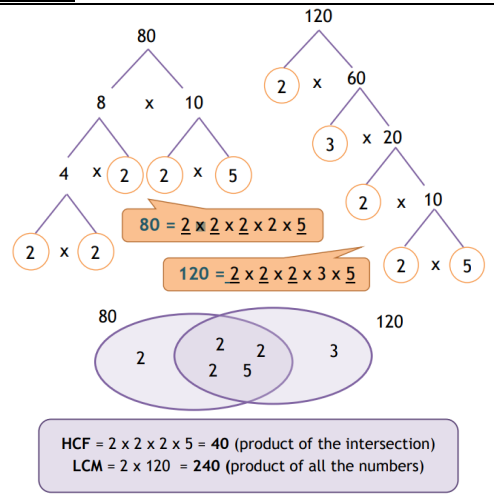
Write each number as a product of primes

Write each product on a Venn Diagram

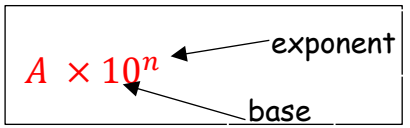
HCF is the product of the intersections

LCM is the product of all the numbers

E.g., What is the HCF and LCM of 80 and 120?



Standard Form



Convert 3500 to standard form

3,500 = 3.5×10^3

'three thousand five hundred' — A number: $1 \leq x < 10$ — Integer power of 10

1) Write the first non-zero digit in the unit's column. Then write all digits left after the decimal place.

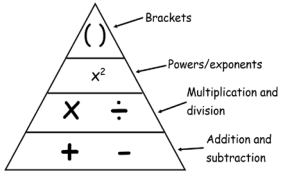
2) Find n by counting how many multiples of 10 you have moved the decimal place

Convert 2.37×10^5 to ordinary form

1) Move the first digit away from the units place value column n steps

2) Write all the other digits and fill in the rest of the place value with zeros

Order of Operations



Subject terminology	
Irrational	A number that can NOT be made by dividing two integers
Surd	The irrational root of an integer
Rationalise	Eliminating any surds from the denominator of a fraction by multiplying
Segment	The portion of a line between any two points
Subtended	When an angle is created by lines extending from the ends of an arc or curve
Common denominator	When two or more fractions have the same denominator (the bottom number of the fraction)
Terminating decimal	A decimal number that contains a finite number of digits after the decimal point
Recurring decimal	A decimal number that repeats forever

How to: Convert recurring decimals to fractions

Convert $0.\dot{5}$ to a fraction.

Let $x = 0.\dot{5}$,

$10x = 5.\dot{5}$

$10x - x = 5$

$9x = 5$

$\div 9$

$x = \frac{5}{9}$

$10x - x$

$5.555555\ldots$

$-\ 0.555555\ldots$

5.0

Rationalising a denominator - If the denominator has just one term that is a surd, the denominator can be rationalised by multiplying the numerator and denominator by that surd

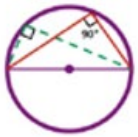
If the denominator of a fraction includes a rational number, add or subtract a surd, swap the + or – sign and multiply the numerator and denominator by this expression.

Example: Rationalise the denominator of $\frac{\sqrt{8}}{\sqrt{6}}$,

$$\frac{\sqrt{8}\times\sqrt{6}}{\sqrt{6}\times\sqrt{6}} = \frac{\sqrt{48}}{6} = \frac{\sqrt{(16\times 3)}}{6} = \frac{4\sqrt{3}}{6} = \frac{2\sqrt{3}}{3}$$

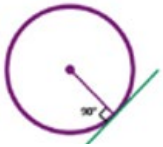
Circle Theorems

The angle at the centre is twice the angle at the circumference



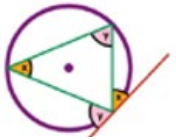
The angle from a diameter is 90°

Angles in the same segment are equal



The angle between a tangent and a radius is 90°

Opposite angles in a cyclic quadrilateral add to 180°



The angle between a tangent and a chord is equal to the angle in the alternate segment

A **pathogen** is a microorganism that causes a disease. There are four main types of pathogen:

Pathogen	Example in animals	Example in plants
Virus	HIV potentially leading to AIDS	Tobacco mosaic virus
Bacteria	Salmonella	Agrobacterium
Fungi	Athlete's foot	Rose black spot
Protists	Malaria	Downy mildew

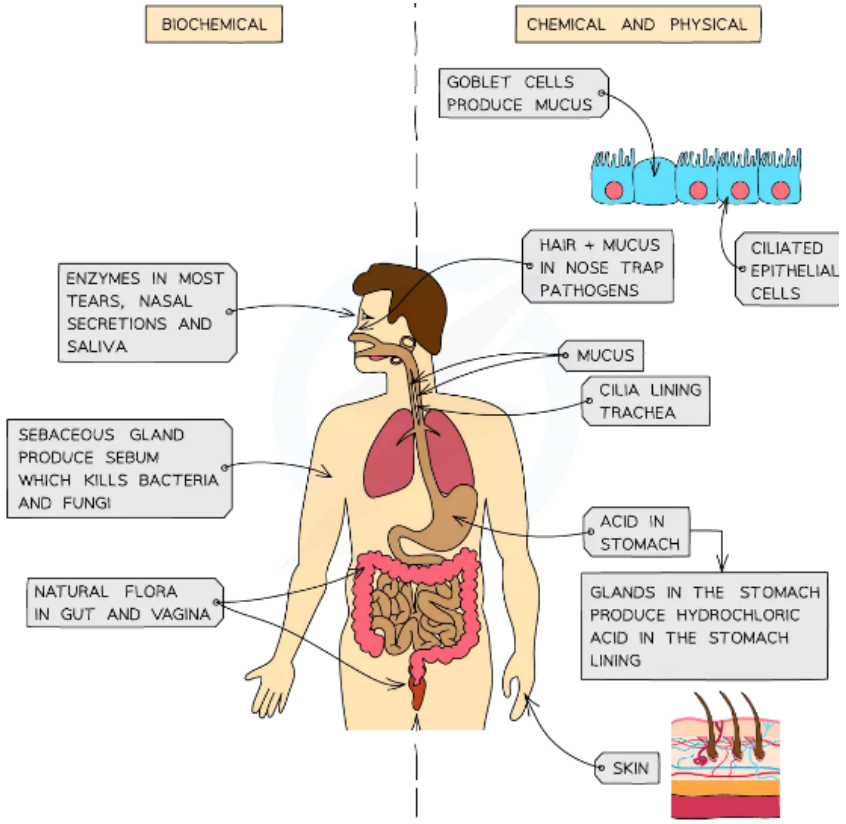
Subject Terminology	Definition
Pathogen	A microorganism which can cause a communicable illness; bacteria, virus, protest and fungi.
Communicable disease	A disease which can be transmitted between organisms and is caused by a pathogen.
Non-communicable disease	A disease which cannot be transmitted between organisms and is not caused by a pathogen.

Transmission can occur in a number of important ways, as shown in the table below.

Type	Examples
Direct contact	This can be sexual contact during intercourse or non-sexual contact, like shaking hands.
Water	Dirty water can transmit many diseases, such as the cholera bacterium.
Air	When a person who is infected by the common cold sneezes, they can spray thousands of tiny droplets containing virus particles to infect others.
Unhygienic food preparation	Undercooked or reheated food can cause bacterial diseases like Escherichia coli which is a cause of food poisoning.
Vector	Any organism that can spread a disease is called a vector. Many farmers think tuberculosis in their cattle can be spread by badgers.

The **non-specific defence systems** of the human body against pathogens include:

- The skin
- The nose
- The trachea and bronchi
- The stomach



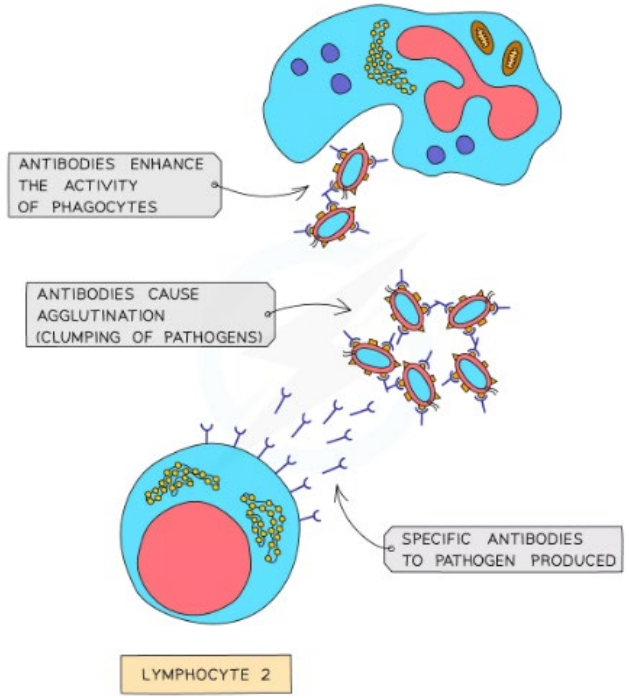
Subject Terminology

Key Word	Definition
Vaccination	An injection of a dead or weakened form of a pathogen which causes an immune response and immunity to a communicable illness.
Antibiotic	A drug used to cure bacterial illnesses and diseases.
Painkiller	A drug used treat the symptoms of disease and illness.
Double-blind trial	A drug trial in which neither the doctor nor the patient knows who has been administered the real drug or the placebo.
Antibodies	Proteins produced by white blood cells which bind to and destroy pathogens.
Macrophage	A type of white blood cell which takes part in phagocytosis (engulfing and breaking down a pathogen to destroy it).

Phagocytosis

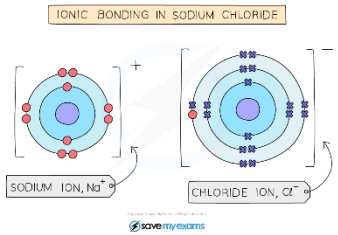
•Phagocytes engulf and digest pathogens, this can be non-specific or helped by antibodies which cause **agglutination** (clumping) of pathogens

•The phagocyte surrounds the pathogen and releases enzymes to digest and break it down to destroy it



Paper 1 Subject: Science - Chemistry Topic: C3 Structure and Bonding

Ionic Bonding

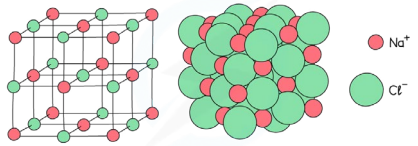


The **metal** atom will lose electrons and become a positively charged ion.

The **non-metal** will gain electrons and become a negatively charged ion.

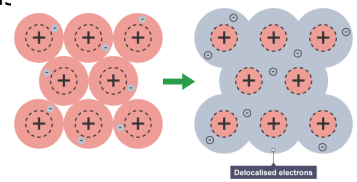
An ionic bond is the strong **electrostatic** force of attraction between oppositely charged ions.

Ionic compounds have regular structures, called giant **ionic lattices**.



Metallic Bonding

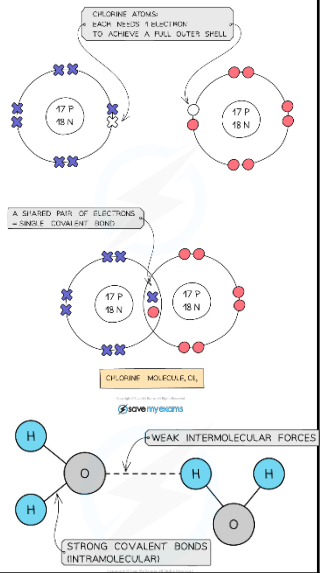
A metallic bond is the strong **electrostatic** forces of attraction between **delocalised** electrons and metal ions



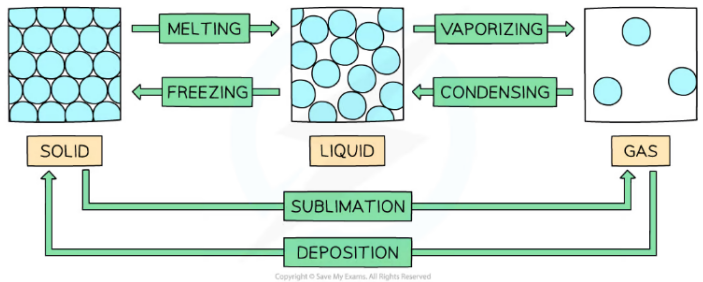
Covalent Bonding

Two or more **non-metal** atoms will share electrons to fill their outer shell.

Covalent bonds between atoms are very **strong.** When two or more atoms are covalently bonded together, they form 'molecules'.
Weak **intermolecular forces** exist between individual molecules



States of Matter



Melting is when a solid changes into a liquid
It occurs at a specific temperature known as the **melting point** which is unique to each pure solid.

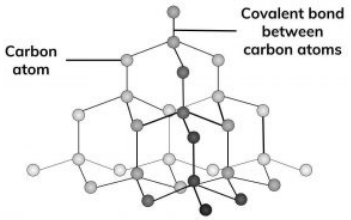
Freezing is when a liquid changes into a solid
This is the reverse of melting and occurs at exactly the **same temperature** as melting

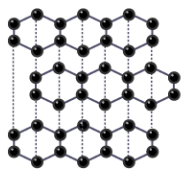
Key Word	Definition
Atom	The smallest part of an element.
Ion	A charged particle produced by the loss or gain of electrons
Allotrope	Different forms of the same element – for example carbon.
Intermolecular force	The weak force of attraction found between separate molecules of covalently bonded substances
Electrostatic attraction	The strong force of attraction between oppositely charge substances.
Delocalised electron	An electron that is no longer associated with a particular atom, it is free to move.

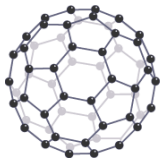
Fullerenes

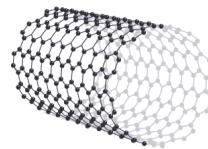
Giant covalent structures:

- **Diamond**: each carbon atom is joined to 4 other carbon atoms by strong covalent bonds.
- **Graphite:** each carbon atom forms 3 covalent bonds with other carbon atoms. The carbon atoms form layers of hexagonal rings.
- **Buckminsterfullerene:** molecules are made up of 60 carbon atoms joined together by 3 strong covalent bonds.
- **Nanotube:** a layer of graphene, rolled into a cylinder. Nanotubes have high **tensile strength**, so they are strong in **tension** and resist being stretched.





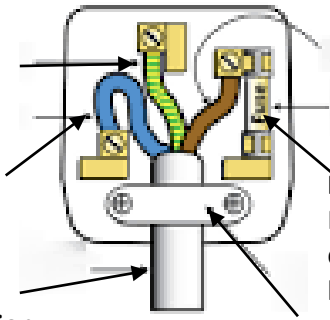




Paper 1 Subject: Science - Physics Topic: P5 Electricity in the Home

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 Left
Completes the circuity.

Outer insulation

Live Wire
BRown to the Right
Provides the AC potential difference.

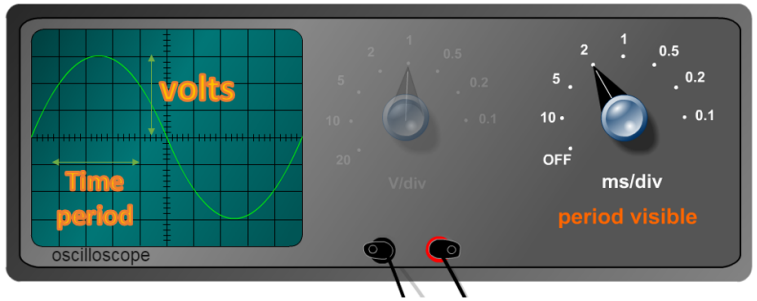
Fuse
Melts when the current is too high, breaking the circuit.

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

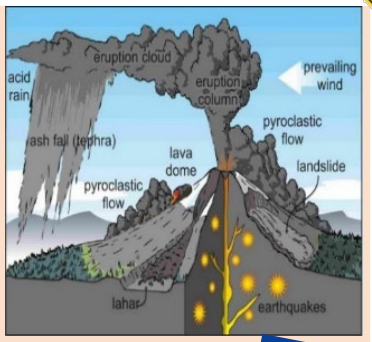
Subject Terminology	
Alternating current	The potential difference changes direction.
Direct current	The potential difference is always in the same direction.
Mains electricity	The frequency is 50Hz the potential difference is 230V alternating current.
Step-up transformer	Increases the potential difference, 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.

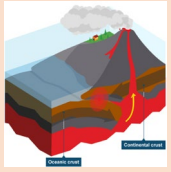
PROTECTION

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

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.

Unit 1a

The Challenges of Natural Hazards

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.

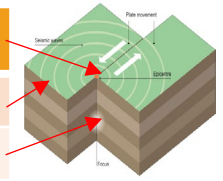
Causes of Earthquakes

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.

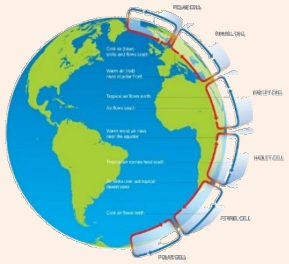
Effects
As a direct result of the earthquake, an estimated 308 people were killed, 1,500 were injured and 67,500 were made homeless.
many churches, medieval buildings and monuments with considerable cultural value were destroyed

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

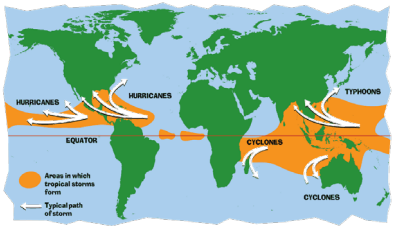
Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.

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.



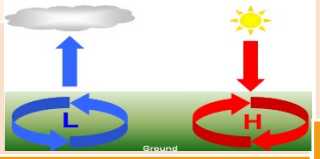
Distribution of Tropical Storms.

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'.

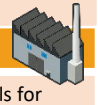
What is Climate Change?

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.

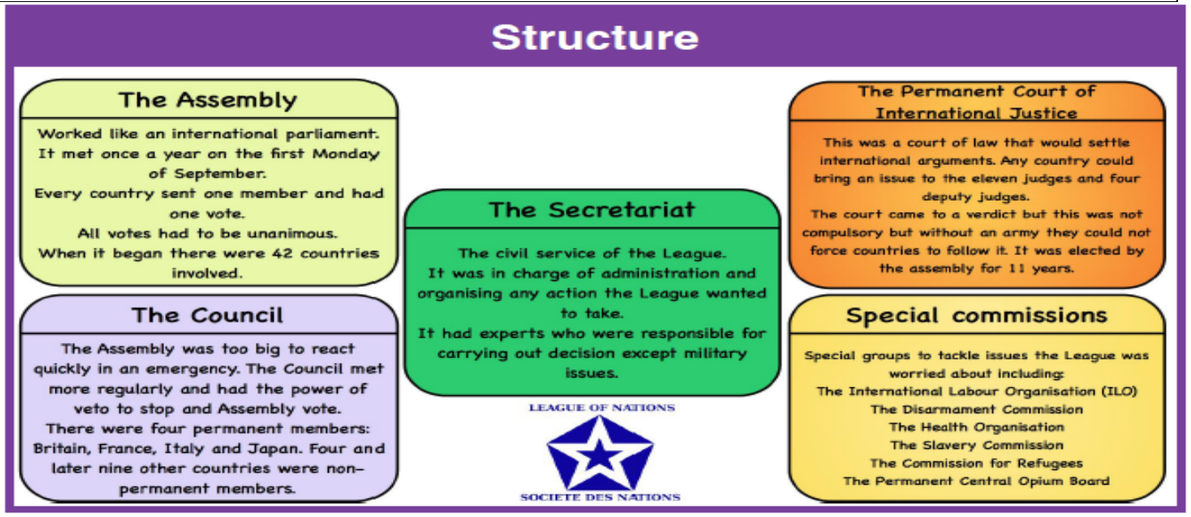
Evidence of natural change

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 League of Nations was a vision for bringing the world together in peace. It was to be a group of countries that would work together and solve problems, like a world parliament.
Four Aims of the League: Countries would work together to stop war from breaking out again, encourage disarmament, improve working conditions and tackle deadly diseases.



The League of Nations in the 1920's	
Success	**Failures**
• The first attempt at collective security • The first World Parliament and step towards peaceful solutions for international affairs. • The covenant forbade the use of aggression. • The League resolved the dispute between Finland and Sweden in 1921 over the Aaland Islands. • In 1925 Greece invaded Bulgaria. The League demanded a withdrawal which Greece did.	• The Polish army took control of the city of Vilna in Lithuania in 1920 as it had many Polish living there. Lithuania asked the League for help but France and Britain did nothing as they saw Poland as an ally. • In 1923 Corfu was attacked by Italy claiming Greece had killed its surveying team. The League did not condemn Italy and even made Greece pay it compensation for deaths. • In 1929 the Wall Street Crash led to a worldwide economic depression. The League of Nations was powerless to do anything.

TECHNICAL VOCABULARY	
Unanimous	Fully in agreement
Veto	The right to reject a decision
Civil Service	The service responsible for the public administration of the government of a country
Mitigation	The action of reducing the severity, seriousness or painfulness of something.
Refugee	A person who has been forced to leave their country in order to escape war, persecution or natural disaster.
Geneva	Geneva is a global city, a financial centre and a worldwide centre for diplomacy in Switzerland.
Collective security	The co-operation of several countries in an alliance to strengthen the security of each.
Covenant	A set of rules each member country of the League of Nations agreed to abide by. Under the covenant, countries agreed not to declare war. Instead they would take the issue to the League and wait for them to rule a decision.
Economic Sanctions	Deciding not to trade with a country as a punishment
Moral Condemnation	Shaming a country into seeing that it is in the wrong.

Manchurian Crisis	Abyssinian Crisis
In 1931, Kwantung Army was already posted in Manchuria to protect the Japanese owned South Manchurian railway. On 18th September 1931, the Kwantung exploded a bomb on the railway. The Japanese claimed the train had been attacked by the Chinese soldiers. Chinese denied this and claimed their soldiers were asleep at the time.	On Mussolini's order in Dec 1934, Italian soldiers clashed with Abyssinians at Wal Wal, an oasis on the border between Abyssinia and Somaliland. In the initial conflict, 150 Abyssinians and 2 Italians were killed. The League tried to intervene is this situation but it was difficult as both countries were members of the League. Italy was also intent on war.
The Kwantung Army used the events **as an excuse to take over Manchuria.** **People in Japan were delighted with the invasion and celebrated on the streets.** The Government wasn't happy but went along with it. **By 1937, Japan had taken over large parts of China with no action taken by the League.**	On 30th June 1935 Haile Selassie, the Abyssinian emperor, addressed the League in Geneva; warning of the effects failing to address Mussolini's actions would have. Despite moral condemnation from the League, Mussolini's troops entered Abyssinia on 3rd October 1935. Italy was a modern and advanced country with a large army and the latest technology.
Officials from the League sailed to Manchuria to assess the legality of the invasion. This was known as the Lytton Council. By Sept 1932, **the report was presented which stated that Japan had invaded illegally.** Instead of withdrawing, Japan decided to try and invade more of China. **Japan left the League 27th March 1933.** The remaining powers in the League were powerless to punish or stop Japan with the USA. The crisis highlighted how defenceless the league of Nations was.	The Italians bombed the tribal villages of Abyssinia and used chemical weapons to terrorise people into surrendering. The only resistance they met was the small Abyssinian army and some soldiers were armed with merely spears. The League did nothing to help and failed to prevent another one of its members from violating the Covenant.

Weaknessess of the League of Nations			
No Army	**USA not a member**	**Slow to react**	**Germany and the USSR not allowed to join**
Britain reluctant to give up own troops as they needed them to protect their own empire. This meant that the League of Nations could not threaten anyone who broke the rules. Meant LON could impose Trade Sanctions or Moral Condemnation only.	This meant any trading sanctions could be undermined. Britain and France now had to lead the League. They were more interested in their own interests.	To make a decision, the League had to vote within the Assembly. This only met once a year which meant decision took a long time. The council could also undermine the decions made in the Assebmly which meant all power laid with Britain, France, Italy and Japan.	This meant that not all the superpowers were involved in decision making.

Conflict and Tension: The Interwar Years

Historical Substantive Concepts

Monarchy

In 1917, against a backdrop of changing political and social ideology Tsar Nicholas II abdicated the Russian throne. Defeat in 1918 for Germany led to Kaiser Wilhelm II's abdication, a republic being formed and a new constitution. Karl I, Emperor of Austria issued a proclamation in which he recognized the rights of the Austrian and Hungarian people to determine their form of government.

Religion

The Catholic Church used the war as a way to preach peace, mediate international conflict and commit humanitarian works. The greatest obstacle was the nationalism that spread through the War era.

Invasion

Invasion of the Ruhr (1923) when France sent troops into the area to collect the money they were owed by Germany.
Aggressive nationalism is best represented by Japan's invasion of China in 1931/32 and Italy's invasion of Abyssinia in 1935.
Germany invaded Poland in 1939 to lead to WW2.

Political Reform

The creation of the League of Nations represented an effort to break the pattern of traditional power politics.
This era also saw the rise of communism, starting in Russia.

Ideology

The aim of the Treaty of Versailles was to ensure peace and avoid another war like World War One. The League of Nations was established to ensure World Peace.

Conflict

During the 1920's the League of Nations had a mixture of success es and failures when dealing with conflict.
Success – Aaland Islands – Sweden and Finland accepted the LON negotiation to give the Aaland Islands to Finland.
Failure – Poland – The Poles invaded Vilna. LON ordered Poland to withdraw, and they refused. The League could do nothing.
However, in the 1930's aggressive nations and economic depression led to many failures.

Revolution

Between 1917 and 1923 a revolutionary wave of political unrest and revolts sprung up around the world, inspired by the success of the Russian Revolution and the disorder created by the aftermath of World War One. The uprising were socialist or anti-colonial.

Tax & Economy

The Central Powers were punished severely by the war's concluding treaties and the reparation payments that were imposed were considered impossible to meet. This led to hyper-inflation occurring in Germany in 1921-1923
The European Allies had their own financial problems. They ended the war deeply indebted to the United States.

Half-Term 6 Spanish Y9 Healthy living and lifestyle

¿Qué haces para estar en forma? ¿Cómo vas a mejorar tu salud?

OPINION	INFINITIVE	NOUN
Me encanta = I love	comer = to eat	la comida sana = healthy food
Me chifla = I love		la comida rápida = fast food
Me gusta mucho = I really like		las verduras = vegetables
Me gusta = I like		sweets = caramelos
Me da igual = I don't care about	beber = to drink	el agua = water
		el zumo = juice
No me gusta = I don't like		el vino = wine
No me gusta nada = I really don't like		El café = coffee
Odio = I hate	jugar = to play	al baloncesto = basketball
Detesto = I hate		al tenis = tennis
No aguanto = I can't stand		al beisbol = baseball
		al ajedrez = chess

TIME EXPRESSION	VERB	NOUN
Siempre = always	como = I eat	fruta = fruit
Casi siempre = almost always	comes = You eat	verduras = vegetables
Normalmente = normally	come = he/she eats	pastel = cake
A menudo = often	comemos = we eat	carne = meat
Generalmente = generally	coméis = You(pl) eat	pescado = fish
Por lo general = generally	comen = they eat	galletas = cookies
A veces = sometimes		queso = cheese
Raramente = rarely	bebo = I drink	
Rara vez = rarely	bebes = you drink	agua = water
De vez en cuando = from time to time	bebe = he/she drinks	té = tea
Casi nunca = almost never	bebemos = we drink	leche = milk
Nunca = never	bebéis = you (pl)drink	alcohol = alcohol
	beben = they drink	

Tengo hambre = I am hungry
Tengo sed = I am thirsty

Soy vegano/a = I am vegan
Soy vegetariano/a = I am vegetarian

IR + A	INFINITIVE	CONNECTIVE -because	IN MY OPINION	I THINK THAT IT WILL BE	ADJECTIVE
Voy a = I am going	jugar al fútbol = to play football	porque	en mi opinión	pienso que será	divertido = fun
Vas a = you are going	hacer ejercicio = to do exercise	puesto que	a mi juicio	creo que será	fácil = easy
Va a = he/she is going	entrenarme = to train	ya que	para mí	opino que será	difícil = difficult
Vamos a = we are going	comer fruta = to eat fruit	dado que	a mi modo de ver	considero que será	relajante = relaxing
Vais a = you are going	evitar la comida rápida = to avoid fast food		desde mi punto de vista	me parece que será	aburrido = boring
Van a = they are going	beber agua = to drink water				bueno para la salud = good for health
	vivir sanamente = to live healthily				malo para la salud = bad for health
	dormir ocho horas = to sleep eight hours				sano = healthy
	mejorar el salud= to improve health				malsano = unhealthy
	beber alcohol = to drink alcohol				beneficioso = beneficial
	fumar = to smoke				esencial = essential
	vapear = to vape				importante = important

VERB	INFINITIVE	NOUN	CONNECTIVE - because	VERB	ADJECTIVES
Planeo – I plan	probar – to try	una dieta vegetariana/vegana/ mediterránea – a vegetarian/vegan/mediterranean diet	porque	es = it's pienso que/opino que/creo que/considero que es = I think it's mi madre/padre dice que es = my mum/dad says it's	sano/a = healthy bueno para el corazón/el salud/el medio ambiente = good for the heart/health/environment una buena fuente de proteína/vitaminas/minerales = a good source of protein/vitamins/minerals
Espero – I hope	ser – to be	más activo/a – more active constante/decidido - consistent/determined	puesto que		
Voy a – I am going	comer – to eat	más fruta/verduras/proteína – more fruit/vegetables/protein menos azúcar/sal/grasa – less	ya que	los medicos dicen que = the doctors say that según estudios = according to studies	puedes vivir una vida más sana = you can live a healthier life
Tengo ganas de – I want	tener – to have	ocho horas de sueño – eight hours sleep un régimen de ejercicios – an exercise regime	dado que		se lleva una vida más equilibrado = you lead a more balanced life
Quiero – I want	seguir – to follow	un estilo de vida saludable/equilibrado/fácil – a healthy/balanced/easy lifestyle			me ayuda a mantenerme sano = it helps me to stay healthy
Tengo la intención de- I intend	mejorar - to improve	mi salud - my health mi futuro – my future mi forma física – my fitness			
Se podría – you could	hacer – to do	ejercicio regularmente/todos los diás – exercise regularly/every day			

Half-Term 1 French Y10 Healthy living and lifestyle

Qu'est-ce que tu aimes manger ? Qu'est-ce que tu manges normalement ?

OPINION	INFINITIVE	NOUN
J'adore = I love	manger = to eat	le poisson = fish
J'apprécie = I love		le pain = bread
J'aime beaucoup = I really like	boire = to drink	le fromage = cheese
J'aime = I like		le gâteau = cake
Ça m'est égal = I don't care about	prendre = to have	le fast-food = fast food
		le hamburger = hamburger
Je n'aime pas = I don't like		la viande = meat
Je n'aime pas du tout = I really don't like		la glace = ice cream
Je déteste = I hate		la boisson = drink
Je ne supporte pas = I can't bear		les fruits = fruits
		les légumes = vegetables
		les frites = chips

Verb	Time expression	NOUN
Je mange = I eat Tu manges = You eat Il/Elle mange = he/she eats Nous mangeons = we eat Vous mangez = You(pl) eat Ils/Elles mangent = they eat Je bois = I drink Tu bois = you drink Il/elle boit = he/she drinks Nous buvons = we drink Vous buvez = you (pl)drink Ils/elles boivent = they drink	toujours = always presque toujours = almost always normalement = normally souvent = often en général = generally d'habitude = generally quelquefois = sometimes parfois = sometimes rarement = rarely de temps en temps = from time to time presque jamais = almost never jamais = never	un fruit = a fruit une glace = an ice cream du poisson = fish de la viande = meat des légumes = vegetables le gâteau = cake le fast-food = fast food de l'eau = water un thé = tea un café = coffee de l'alcool = alcohol

J'ai faim = I am hungry
J'ai soif = I am thirsty

Je suis végan(e) = I am vegan
Je suis végétarien(ne) = I am vegetarian

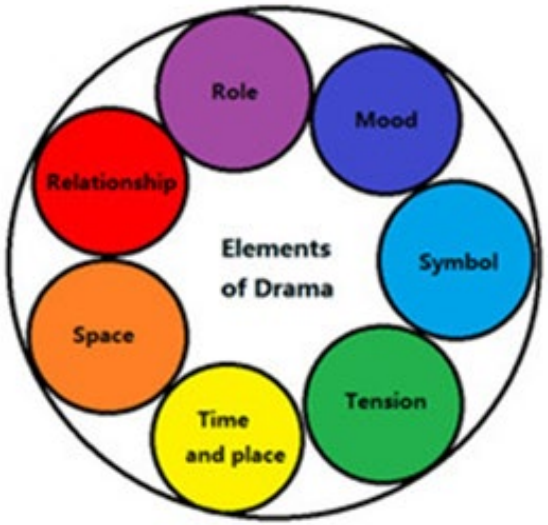
ALLER	INFINITIVE	CONNECTIVE -because	IN MY OPINION	I THINK THAT IT WILL BE	ADJECTIVE
Je vais = I am going	jouer au tennis = to play tennis	car	à mon avis	je pense que ce sera	amusant = fun
Tu vas = you are going	manger les fruits = to eat fruits	parce que	pour moi	je crois que ce sera	facile = easy
Il /Elle va = he/she is going	boire de l'eau = to drink water	puisque	selon moi	je considère que ce sera	difficile = difficult
Nous allons = we are going	rester au lit = to stay in bed		en ce qui me concerne	il me semble que ce sera	reposant = relaxing
Vous allez = you are going	faire de l'exercice = to do exercise				ennuyeux = boring
Ils / Elles vont = they are going	aller à l'hôpital = to go to hospital				bon pour la santé = good for health
Je ne vais pas = I'm not going	fumer des cigarettes = to smoke cigarettes				mauvais pour la santé = bad for health
Je ne vais jamais = I'm never going	vapoter = to vape				sain = healthy
	manger de façon saine = to eat healthily				malsain = unhealthy
	prendre de drogues = to take drugs				bénéfique = beneficial
	boire de l'alcool = to drink alcohol				essentiel = essential
	arrêter de fumer = to stop smoking				important = important

Time expression	Noun	Verb	Because	In my opinion	I thought that it was	Adjective
La semaine dernière = Last week Hier = yesterday Avant-hier = The day before yesterday Hier soir = last night Le week-end dernier = Last weekend L'année dernière = Last year Il y a deux mois = 2 years ago Plus tard = later		j'ai joué = I played j'ai marché = I walked j'ai essayé = I tried j'ai mangé = I ate j'ai gagné = I won j'ai participé = I participated j'ai regardé = I watched j'ai aimé = I liked J'ai dormi – I slept J'ai fini = I finished j'ai choisi = I chose j'ai bu = I drank J'ai perdu = I lost	car	selon moi	J'ai pensé que c'était	agréable - pleasant désagréable - unpleasant important – important primordial – essential essentiel - essential sain = healthy malsain = unhealthy
Le matin = In the morning L'après-midi = In the afternoon le soir = in the evening	mon oncle = my uncle ma sœur = my sister mon beau-frère = my stepbrother ma mère = my mum ma famille = my family mon grand-père = my grandpa mon père = my dad ma cousine = my cousin ma grand-mère = my grandma	a joué = played a marché = walked a essayé = tried a mangé = ate a gagné = won a participé = participated a regardé = watched a aimé = liked a dormi – slept a fini = finished a choisi = chose a bu = drank a perdu = lost	puisque	à mon avis	j'ai cru que c'était	divertissant – entertaining amusant – fun ennuyeux - boring necessaire – necessary superflu - unnecessary utile – useful inutile - useless
Lundi = On Monday Mardi = On Tuesday Mercredi = On Wednesday Jeudi = On Thursday Vendredi = On Friday Samedi = On Saturday Dimanche = On Sunday	mes parents et moi = my parents and I ma mère et moi = my mum and I mon grand-père et moi = my grandpa and I mon frère et moi = my brother and I mon père et moi = my dad and I ma grand-mère et moi = my grandma and I	avons joué = played avons marché = walked avons essayé = tried avons mangé = ate avons gagné = won avons participé = participated avons regardé = watched avons aimé = liked avons dormi – slept avons fini = finished avons choisi = chose avons bu = drank avons perdu = lost	parce que	pour moi	j'ai consideré que c'était	alarmant - alarming inquiétant - worrying embêtant – annoying agaçant = annoying bénéfique – beneficial possible – possible impossible - impossible une perte de temps / d'argent – a waste of time / money
	mes parents = my parents mes grands-parents = my grand parents mes frères / sœurs = my brothers / sisters mes amis = my friends mes cousins = my cousins mon oncle et ma tante = my aunt and uncle	ont joué = played ont marché = walked ont essayé = tried ont mangé = ate ont gagné = won ont participé = participated ont regardé = watched ont aimé = liked ont dormi – slept ont fini = finished ont choisi = chose ont bu = drank ont perdu = lost		en ce qui me concerne	j'ai trouvé que c'était	bon pour la santé = good for health

Year 10 Subject: Level 1/2 Vocational Award in Performing Arts Topic: Elements of Drama

An Explorative Strategy is a *technique to explore and deepen understanding* of the drama you create. Used to understand characters, to explore scenes and to experiment with characterisation.

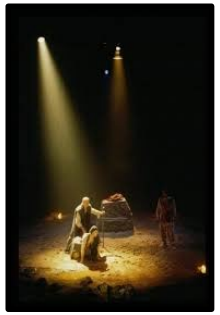
- Role Play is the basis of all dramatic activity. The ability to suspend disbelief by stepping into another character's shoes by adopting a role, becoming and acting like another person.
- Thought Tracking (also called thought tapping) is a quick-fire strategy enabling actors to verbally express their understanding of the characters and their situations without the need for rehearsal. It is letting the audience know how the character is thinking and feeling.
- Hot Seating is a strategy in which a character or characters, played by the teacher or a student, are interviewed by the rest of the group. Before engaging in this strategy, prepare the person or people who will be in the hot seat to successfully take on their role.



Subject Vocabulary	
Forum Theatre	Encourages audience interaction and explores different options for dealing with a problem or issue
Improvisation	Is a form of live theatre in which the plot, characters and dialogue of a game, scene or story are made up in the moment.
Action	Consists in the events that the characters take part in as they act the play.
Form	Is the way that the story is told, the way the characters play their parts, and/or the way the themes are explored.

- Narration is a technique whereby one or more performers speak directly to the audience to tell a story, give information or comment on the action of the scene or the motivations of characters. Characters may narrate, or a performer who is not involved in the action can carry out the role of 'narrator'.
- Cross-Cutting is a drama technique borrowed from the world of film editing, where two scenes are intercut to establish continuity. In drama and theatre, the term is used to describe two or more scenes which are performed on stage at the same time (Juxtaposition – Contrast).

- Marking the Moment: is a dramatic technique used to highlight a key moment in a scene or improvisation. This can be done in a number of different ways: for example, through slow-motion, a freeze-frame, narration, thought-tracking, lighting or music.
- Flash Forward: (more formally known as prolepsis) is a scene that temporarily takes the narrative forward in time from the current point of the story in literature, film, television and other media.
- Flash Backwards: is an interjected scene that takes the narrative back in time from the current point in the story. Flashbacks are often used to recount events that happened before the story's primary sequence of events to fill in crucial backstory.



Year 10 Subject: Level 1/2 Vocational Award in Performing Arts Topic: Musical Theatre 1

Musical Theatre - Context and Background Facts

Musicals use singing, dancing, and talking to tell stories. They are meant to be entertaining and are usually lighter and funnier than opera. They have easy melodies - audiences could sing along.

They usually have an orchestra to accompany the singers, but many musicals today also have rock instruments such as electric guitars, synthesisers and drumkits.

Early musicals were influenced by jazz and swing music while lots of musicals from the 1970s onwards used rock music.

The types of musicals that are around today began in the 1920s and developed into the 21st Century.

The genre started out on Broadway, a famous theatre street in New York. Later ones were shown in London's West End.

Some songs from Musicals have hit the charts such as Evita's "Don't Cry For Me Argentina" and "Memory" from Cats.

Many musicals have been made into popular musical films; The Sound of Music, Hairspray, Grease, Billy Elliot, Mamma Mia and Les Miserables, Rent, Annie and West Side Story are just a few.

Musicals are usually written in the styles of the popular music that is around at the time. For example, Hamilton, which premiered in 2015, draws on elements of hip hop, as well as R&B, pop, soul, and traditional-style show tunes.

Types of Musicals:
Book Musical (A musical with a story), **Concept Musical** (the idea or concept is more important than the plot - A Chorus Line), **Jukebox Musical** (Popular songs by one artist; We Will Rock You, Mamma Mia), **Rock Musical** (uses rock music).

Voice Types

There are 4 main different voice types we need to be able to recognise. Each voice type is based on how high or low the singer can sing.

Soprano - a HIGH female voice.

Alto - a LOW female voice.

Tenor - a HIGH male voice

Bass - a LOW male voice.

Subject Vocabulary

Character	A person portrayed in a drama, novel, or other artistic piece.
Rhythm	Rhythm is the organisation of sound into a pattern. In dance, this pattern is created by the coordination of movement with the musical beats.
Style	Characteristic way of dancing.
Musicality	The ability to make the unique qualities of the accompaniment evident in performance.
Fluidity	Fluidity refers to the seamless, continuous flow of movement from one step to the next.
Spatial Awareness	Consciousness of the surrounding space and its effective use
Vocal Technique	The five vocal techniques—pitch control, tone quality modulation, resonance control, dynamics and volume adjustment, and precise articulation—enable individuals to expand their vocal versatility, adapt to various styles, emotions, and contexts, and convey their messages or expressions effectively.
Interpretation	Finding the meaning that is in the movement or finding the movement that is in the idea.
Intonation	Rising and falling of voice in speech.
Projection	Directing the voice out of the body to be heard clearly at a distance.

Important Composers and their Musicals: Gilbert & Sullivan 1842-1900 (The Mikado, HMS Pinafore), **Cole Porter** 1891-1964 (Anything Goes, Kiss Me Kate), **Rodgers & Hammerstein** 1895-1960 (Sound of Music, Oklahoma, Carousel), **Leonard Bernstein 1918-1990** (West Side Story) **Stephen Sondheim** 1930 (Sweeney Todd, Into the Woods), **Jerry Herman** 1931-2019 (Hello Dolly), **Schonberg & Boublil** 1941 (Les Misérables, Miss Saigon) **Andrew Lloyd Webber** 1948 (Joseph & the Amazing Technicolor Dreamcoat, Evita, Cats, Phantom of the Opera) **Alan Menken** 1949 (Little Shop of Horrors) **Stephen Schwartz** 1948 (Godspell, Wicked) **Lin-Manuel Miranda** 1980 (In the Heights, Hamilton, Moana, Encanto, Bring it on: The Musical).

Year 10 Subject: Performing Arts Topic: Production

Production in Theatre

Producing theatres have creative teams which develop new productions from existing or new works. This includes directors, musical directors and choreographers, as well as designers of sets, props, costume, lighting and audio-visual media. They might be freelance or based at the venue, with additional specialists being brought on as required. Often these theatres will also have craft departments to make or install the design elements chosen for the production.

Costume: Costume informs the audience about a character, their social position, personality, and contributes to the creation of the world of a play.

For many actors, putting on their costume is an important part of getting into character before going on stage. It can affect their posture and how they move. Sometimes they will change costume several times during a show, demonstrating the passage of time, a transformation of their character, or to become different characters.

the costume.

Subject Terminology	
Naturalistic	A form of theatre designed to create the illusion of reality for an audience. Originated in the late 19th century.
Symbolic	A symbol can represent an abstract idea, eg the colour red representing romance or a dove representing peace.
Prosthetics	An aspect of make-up design where synthetic materials are used to alter a human's physical appearance.
Costume	What a performer wears on stage.
Pyrotechnics (pyro)	The use of fireworks within theatre to create effects, eg explosions
Flying	Involves a manual or electric system that lifts performers off the stage, allowing for stunts and aerial sequences
Set Dressing	Smaller items that add details to a set, such as **stage furniture**, to help establish setting and era.

Make up and hair: Hair and makeup allow actors to truly transform into complete characters using prosthetics, paint, wigs, and more. Roles and responsibilities can vary hugely, but in general, this department deals with the designing of hair and makeup and the process of achieving these designs. This can range hugely from simple styled hair and naturalistic makeup to gory SFX wounds and huge statement wigs.

The purpose of set design

The set helps show where and when the story of a play takes place, while also conveying meaning to the audience.

Conveying setting- The most essential aspect of set design is to show the audience where the action takes place.

Conveying period- As well as conveying the setting, the set design should suggest the **period** of the play. For example, a play set in a living room in the 1970s could feature yellow and browns within the patterned walls and floors and large retro furniture associated with the era.

Communicating themes or symbols - The set design can also communicate abstract concepts, such as **themes** and **symbols**. As an example, a design could include a large, dead tree to suggest the themes of death and decay.

Half-Term 1 | Year 10 **Music** | **Introduction to GCSE**

INSTRUMENTATION

Instrumental Ensembles:

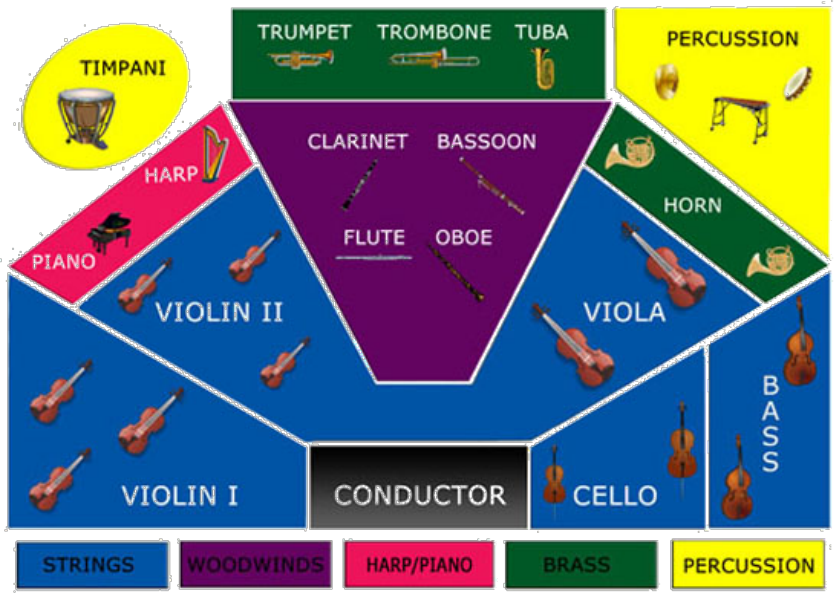
Solo	- 1 performer
Duet	- 2 performers
Trio	- 3 performers
Quartet	- 4 performers

Types Of Voices

Soprano	(Female)	HIGH
Treble	(Boy)	
Alto	(Female)	
Countertenor	(Male Alto)	
Tenor	(Male)	
Bass	(Male)	LOW

**SATB Choir: Soprano, Alto, Tenor & Bass*

Instruments Of The Orchestra



Rock & Pop Instruments

Electric Guitar

Acoustic Guitar

Singers

Bass Guitar

Keyboard / Synthesizer

Drum Kit

Saxophone

Trumpet

**Lead instrument = Often an electric guitar ('lead guitar'). Plays melody or harmonises with the singer & often has a solo.*

Jazz Instruments

Rhythm Section

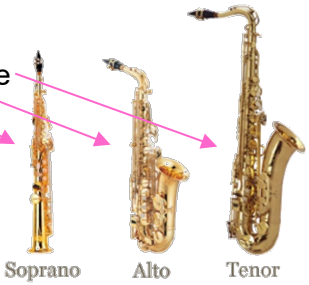
Backup / Accompaniment for the melody. Sometimes still improvise and get solos.

*The Groove: Double Bass
*The Beat: Drum Kit
*The Chords: Piano
(Sometimes Guitar)

Front Line Instruments

Instruments that play melodies / improvise. Stand in front of the rhythm section.

*Trumpet
*Trombone
*Saxophone



Musical Periods

Baroque Period (1600-1750)

*Small orchestra - Mostly Strings + Basso Continuo
*Basso Continuo - The part given to instruments playing the bass line & chords accompanying the melody. *(Harpsichord, bass viol, organ, lute…)*

Classical Period (1750-1810)

*Basso Continuo gradually stopped being used
*Pianoforte introduced & Clarinet invented
*String Quartet very popular *(Violin x2, Viola, Cello)*

Romantic Period (1810-1910)

*Piano music very popular *(Instrument further improved)*
*Large Orchestra
*Tone / construction of instruments improved

Instrumental Techniques - The way you play / use an instrument.

Some Examples

String Instruments

*Pizzicato *(Pizz.)* - Plucking the strings
*Arco / Bowed - Using a bow on the strings
*Double Stopping - Playing two strings at the same time

String & Brass Instruments

*Con Sordino *(Con Sord.)* - Playing with a mute *(changes the sound produced)*
*Tremolo - Quickly repeating the same note *('trembling')*

Voices

*Falsetto - A technique used by men to sing at a much higher pitch

Voices, Brass, Woodwind and String Instruments

*Vibrato – Make the note waver up and down to add expression

Other Vocal Terms

Acapella

Singing without any accompanying instruments.

Chorus

Music written for a choir.

Backing Vocals

Sing harmonies / support the lead singer.

Musical forms and devices

Area of study 1 - Eduqas GCSE Music

Baroque era (1600-1750)

- Harpsichord
- Ornaments
- Terraced dynamics
- Basso continuo
- Small orchestra (mostly strings, plus some wind)
- Suite, sonata, oratorio, chorales, trio sonata
- **Bach, Handel, Vivaldi**

Classical era (1750-1810)

- Slightly larger orchestra
- Piano introduced
- Alberti bass
- String quartets
- Symphony, solo sonata, solo concerto
- Balanced, regular phrases
- **Haydn, Mozart, Beethoven**

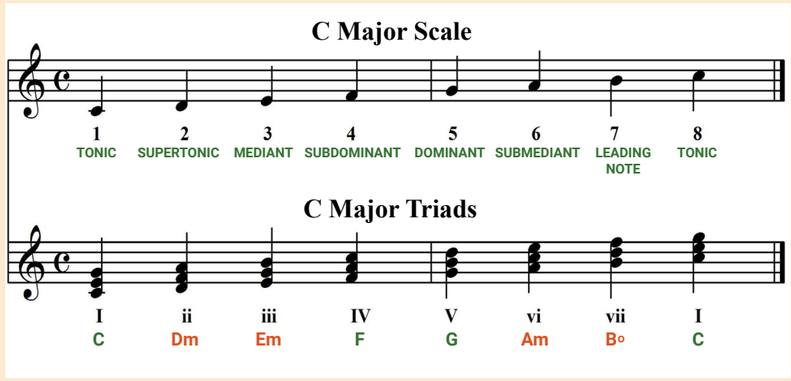
Romantic era (1810-1910)

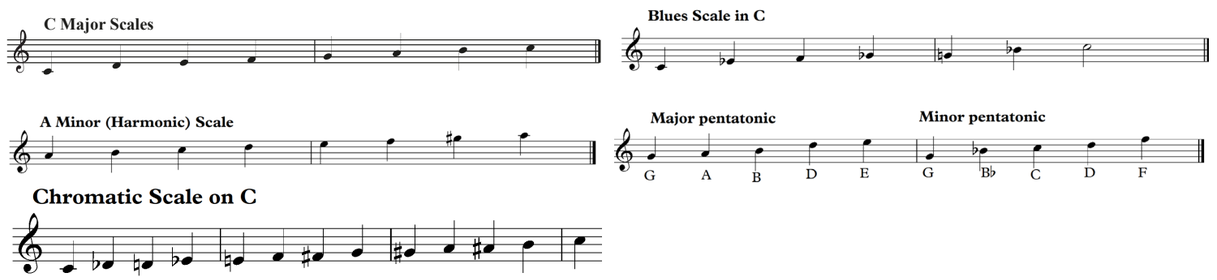
- Lyrical, expressive melodies
- Large orchestra
- Wider range of dynamics
- Richer harmonies and use of chromatic chords
- Programme music
- Opera symphony
- **Tchaikovsky, Grieg, Schumann, Dvorak, Brahms, Verdi, Wagner**

Scales and chords

A **CHORD** is a group of two or more notes played at the same time. A **TRIAD** has three notes. A **CHORD SEQUENCE/ PATTERN** is a series of chords. **DIATONIC HARMONY** is based on the chords of major/minor scales.

Primary chords I, IV, V
Secondary chords ii, iii, vi, vii





Form and structure

BINARY **A B**

Two sections: A usually ends in a related key (e.g. dominant or relative minor), but B returns to the tonic. B will contain with some change/contrast.

TERNARY **A B A**

Three sections: section B provides a contrast (e.g. new tune key change). A may return exactly or with some slight changes.

RONDO **A B A C A**

A longer form: A returns throughout the piece, with contrasting sections called 'episodes', containing new ideas and using different keys.

MINUET AND TRIO **II: AB: II II:CD :II AB**

The minuet was a type of graceful dance from the 17-18th century, and was often used as the 3rd movement in symphonies in the Classical era. The minuet had two repeated sections, the trio had two new repeated sections, with a return to the minuet at the end (no repeat).

VARIATIONS **A a A A A**

The main theme (tune) is repeated and developed a number of times in a variety of different ways.

STROPHIC **A A A**

A simple form where the song uses the same melody over and over.

Devices

Repetition	A musical idea is repeated exactly.
Imitation	An idea is copied in another part.
Sequence	Repetition of an idea in the same part at a higher/lower pitch.
Ostinato	A short, repeated pattern or phrase.
Drone	A long held or constantly repeated note(s).
Arpeggio/ broken chord	The notes of a chord played individually.
Alberti bass	A broken chord accompaniment (I,V,iii,V) common in the Classical era.
Anacrusis	An 'up-beat' or pick-up before the first strong beat.
Dotted rhythms	A rhythm using dotted notes (gives a 'jagged' or 'bouncy' type of effect).
Syncopation	Off beat accents.
Conjunct	Notes that move in steps.
Disjunct	Notes that move in leaps/ intervals.
Regular phrasing	Balanced parts of a melody (like the phrases in a sentence) e.g. four bar phrases.

Cadences

The two chords at the end of a phrase

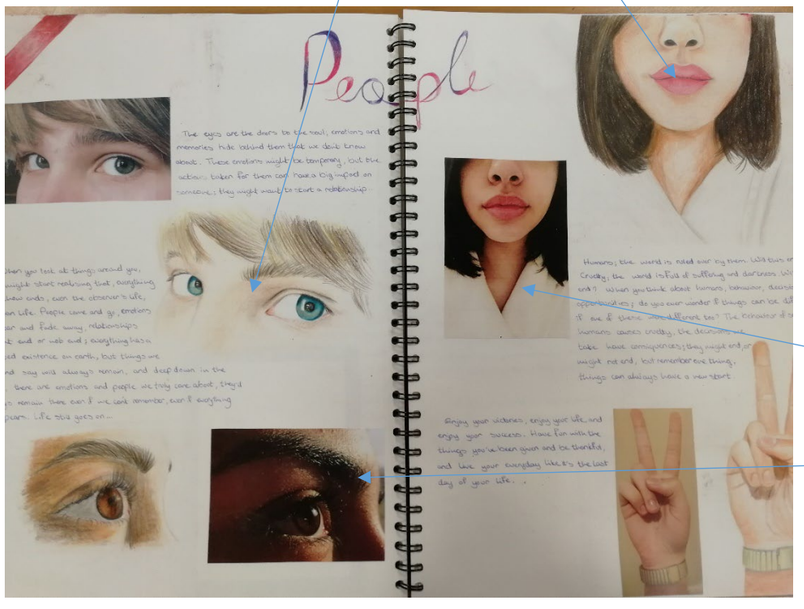
Perfect	**V-I**	Strong ending – sounds 'finished'; a musical full stop.
Plagal	**IV-I**	Sounds finished but 'softer'; Amen.
Imperfect	**I-V, ii-V, vi-V**	Sounds unfinished.
Interrupted	**V-vi**	Moves to an unexpected chord; 'surprise'.

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.



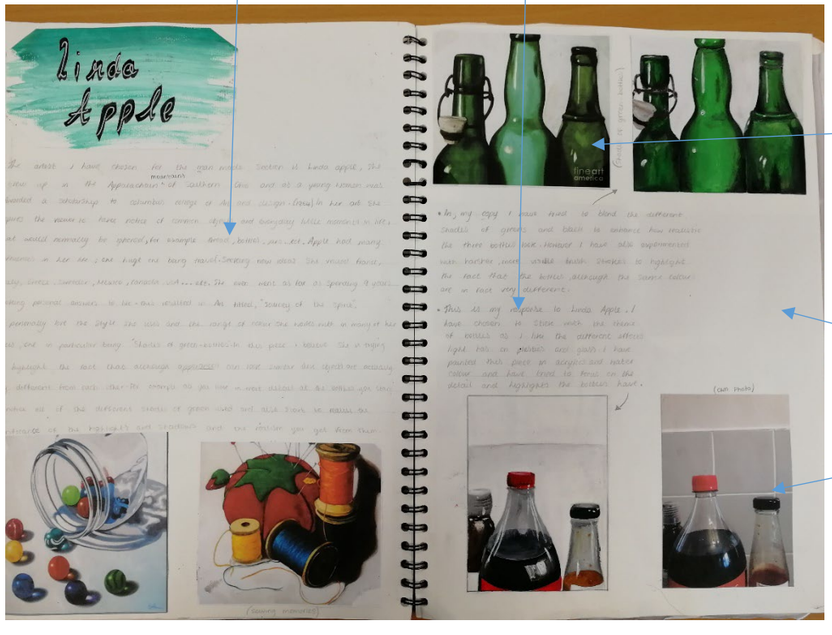
Use your own photos not pictures from the internet.

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)

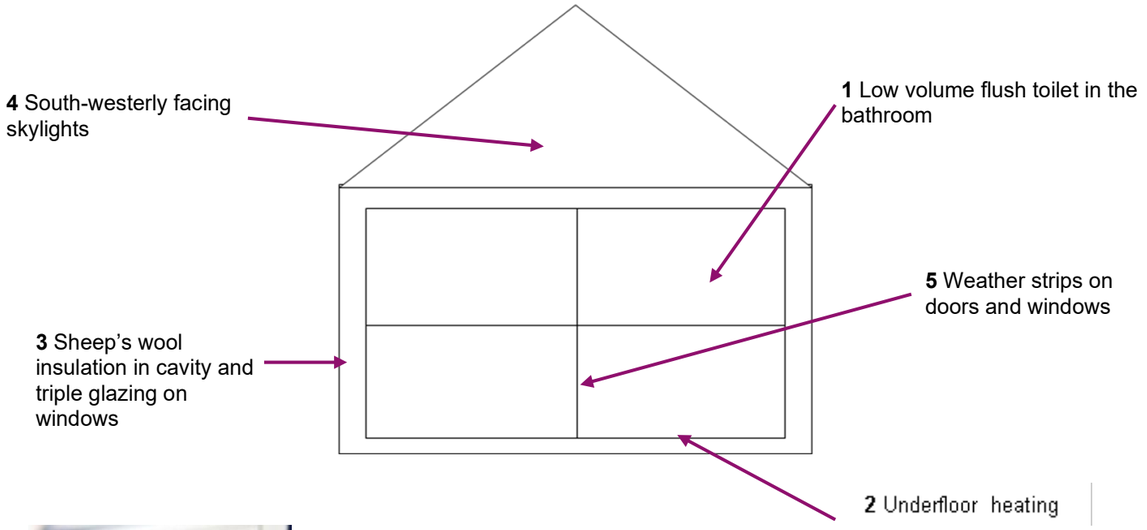
Personal attributes in Hospitality– This is not a job description

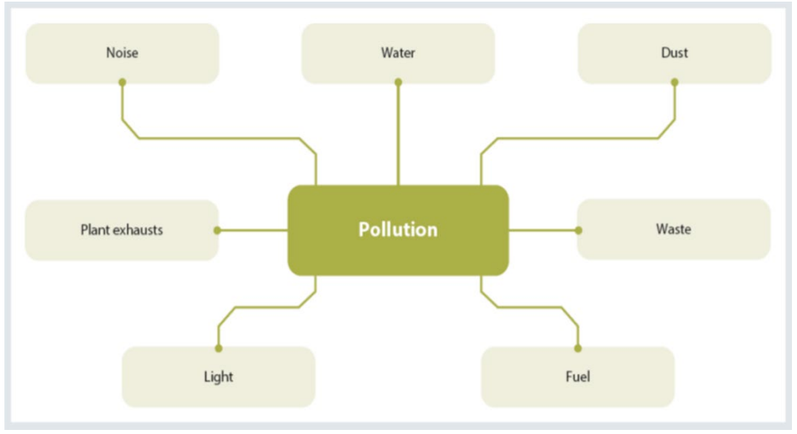
- Good listener, good communicator
- Calm and confident
- Able to take instructions and work as a team
- Physical stamina
- Able to take initiative
- Flexible and adaptable to different situations
- Punctual and reliable
- Willing to learn and develop skills
- A sense of humour
- Helpful and approachable
- 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 1 - Sustainability

Material	At which stage of the construction process can it be wasted?	How is it wasted?	Destination
Plasterboard	Construction	Off-cuts	Recycle
Masonry	Demolition	Rubble	Recycle as hardcore
Sub-soil	Excavation	Spoil	Re-use
Plastics	Packaging materials	On delivery, once unwrapped	Disposal at landfill or incinerator
Water	Operation and maintenance	Leakage through pipes	Unknown until rectified





Subject - Construction

Material	Does it use up energy or water?	During which stage of the development cycle does this use occur?	What is the environmental/ economic impact?	How can you minimise this impact?
Cement	*Energy*	*Pre-construction*	*Environmental impact: pollution from greenhouse gas emissions*	*Use a gasification process that converts the carbon in the coal and fly ash to heat energy*
Timber	Energy (cost of transporting)	Pre-construction	Pollution from traffic emissions	Use locally sourced timber
Aggregates	Energy (cost of transporting)	Construction	Pollution from traffic emissions	Greater use of recycled and secondary aggregates
Steel	Energy (off-cuts)	Construction	Cost of transporting steel to recycle	Use of pre-fabricated steel members
Inadequate drainage systems	Water	After construction	Flooding	Use of Sustainable Drainage Systems (SuDS)
Waste water system	Water	After construction	Wastage of water	Install grey water harvesting system

HT1 Y10 Subject **RS core** Theme E **Crime and Punishment** Christianity

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

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

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

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

Y

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.

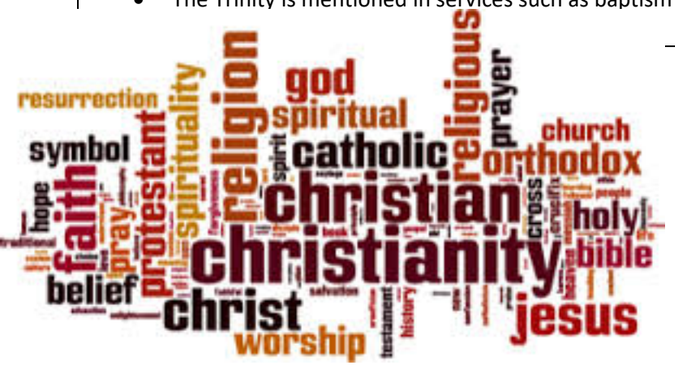
Year 10 Christian Beliefs

God as omnipotent

- This means all-powerful, not that he can do anything – even against his nature.
- This can be seen in the creation and wonders of the universe.
- Miracles performed by God and Jesus (Jesus is God in human form)
- What it means for Christians is they believe nothing can overcome God's powers.

The Oneness of God and the Trinity

- Christianity is a monotheistic faith – they believe in one God
- But God has been revealed as Father (creator), Son (Jesus the saviour) and Holy Spirit (source of strength and guidance)
- When Christians speak of the three persons of the trinity they do not mean three people just as being known in three ways.
- They support this belief because they say God's nature is beyond our understanding and this is an attempt to make sense of what the Bible says.
- The Trinity is mentioned in services such as baptism and as part of blessings.



God

The Incarnation

- The word literally means 'embodiment' and refers to the idea that God took on human form in Jesus (John 1:14)
- Christians believe that Jesus was fully God (the Word) and fully human (born of Mary)
- This is hard to explain but describes the disciples experience of Jesus
- Throughout the New Testament it states that Jesus is the Son of God, Mary conceived from the Holy Spirit and was a virgin.
- The virgin birth is seen by some as literal, emphasising the divine nature of Jesus, other metaphorical highlighting his unique human nature.
- Jesus speaks of not knowing all things – like the time of the end of the world – so people question how he is fully divine.
- Early Christians believed that Jesus, as God, fully took on human form in order to redeem humanity
- Christians are supposed to live their lives in the same submission to God the Father showing selfless love – even to the point of death.

SUBJECT TERMINOLOGY	
Catholic	a branch of Christianity, based in Rome and led by the Pope
Orthodox	a branch of Christianity mainly, but not entirely, practiced in Eastern Europe
Protestant	a branch of Christianity that became distinct from the Catholic Church at the time of the Reformation
Denomination	a distinct group within the Christian faith, with its own organisation and traditions
Monotheistic	a religion that believes there is only one God
Holy	separate and set apart for a special purpose by God
Omnipotent	almighty, having unlimited power; a quality of God
Benevolent	all-loving, all-good; a quality of God
Justice	bringing about what is right and fair, or making up for a wrong that has been committed.
Trinity	the belief in God as one in three forms, Father, Son and Holy Spirit
Son of God	a title used for Jesus, the second person of the Trinity; denotes a special relationship between Jesus and God the Father
Creation	the act by which God brought the universe into being
The Word	a term used at the beginning of John's Gospel to refer to God the Son.
Incarnation	God becoming a human being, being born as Jesus
Holy Spirit	The third member of the Trinity

<u>Beliefs about Creation</u>

- Christians believe that God created the world
- The Nicene Creed states that Christians believe in God the Father, creator…
- Genesis 1:1 also states 'in the beginning God created the heavens and the earth
- John's Gospel also states that Jesus (the Word) was also there and was part of this creation.
- Genesis 1 also speaks of the Spirit of God moving over the waters changing chaos into order
- THE TRINITY IS SEEN AS ACTING IN CREATION

The Crucifixion

What happened:

Being fully God but also fully human, Jesus suffered pain. A centurion accepted that Jesus was the Son of God.

The guards made sure Jesus was dead. His body was put in a cave before the Sabbath day.

Why is it important?

- It shows that **Christians will be forgiven for their sins** if they are truly sorry.
- **God understands human suffering** because of the suffering of his son, Jesus.
- **Suffering is a part of human** life, just as it was part of Jesus' life.
- It shows that Jesus was **fully God and fully man.**
- It teaches Christians that forgiveness is possible- Criminals on the cross.
- Teaches Christians that God loves them

Christ as Saviour

- John 3:16 says that God loved the world so much he gave his son as an atonement
- Jesus bore humanity's sin on the cross
- God took the initiative when humanity couldn't
- It inspires others to take the initiative in reconciliation in the world today and to dedicate their lives to the way of God

The Resurrection

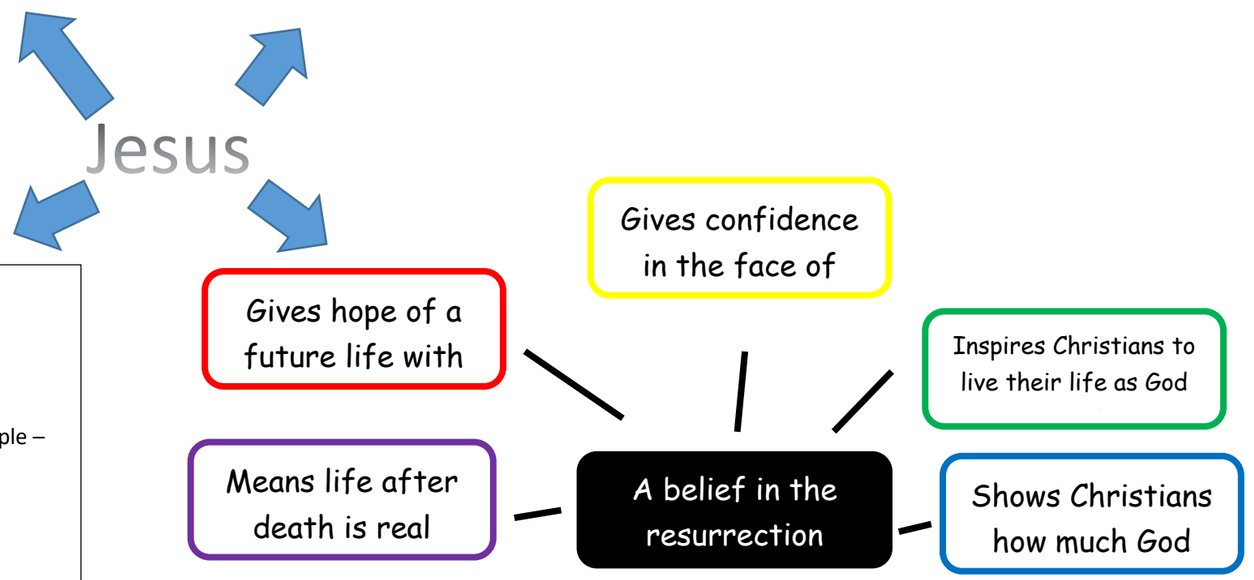
- The New Testament says that a man named Joseph was given permission to bury Jesus in a rock tomb
- The Sabbath was about to start so the women were not able to prepare the body properly
- A huge bolder was put in front of the tomb
- Early Sunday the women went to attend to the body but the stone had been moved
- The Gospels vary about what happened next but the body was missing
- According to Mark a man in white told the women to go back to the disciples and wait for him there.
- All reports stress the physical nature of his visits to show it wasn't a ghost
- This idea is important because it shows that God has overcome the power of death.

The Ascension

- After meeting with his disciples and asking them to do his work, Jesus left them for the last time.
- This was 40 days after the resurrection.
- When Jesus ascended into Heaven the Holy Spirit came to the disciples.
- This was known as Pentecost. The Holy Spirit gave the disciples the gifts to spread the word for example – Speaking in tongues.

This is significant because…

- Shows that Jesus is with God in heaven.
- Prepare for God to spend the Holy spirit to provide comport and guidance.



HT1 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.

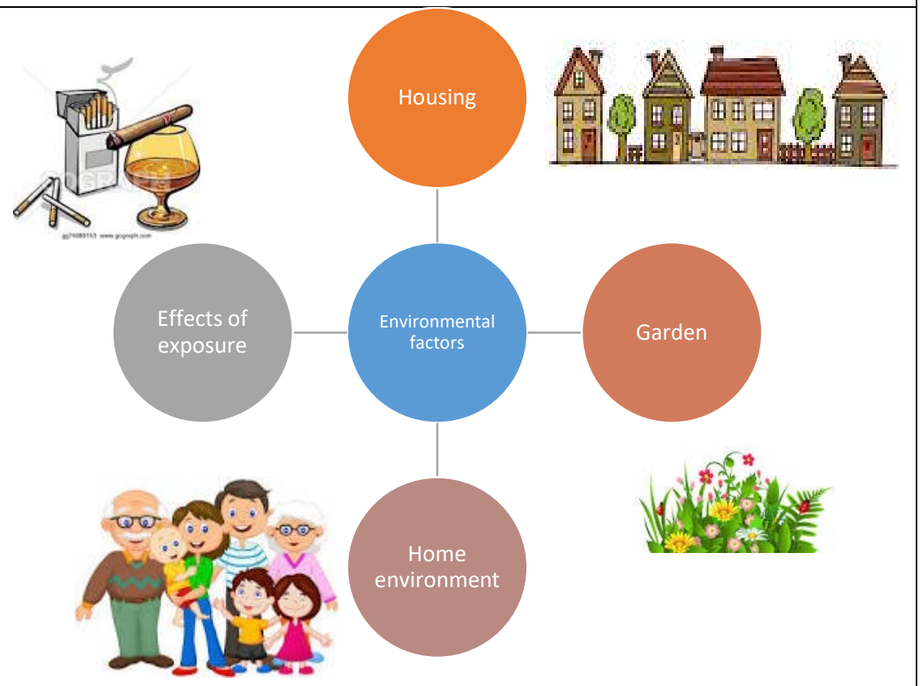
Development	
What is development?	The skills and knowledge we gain over time.
Do children develop at an even pace across all areas?	No some may have good language skills but not be able to kick a ball.
Why is it important to know the milestones for the different ages?	Can help you plan activities and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

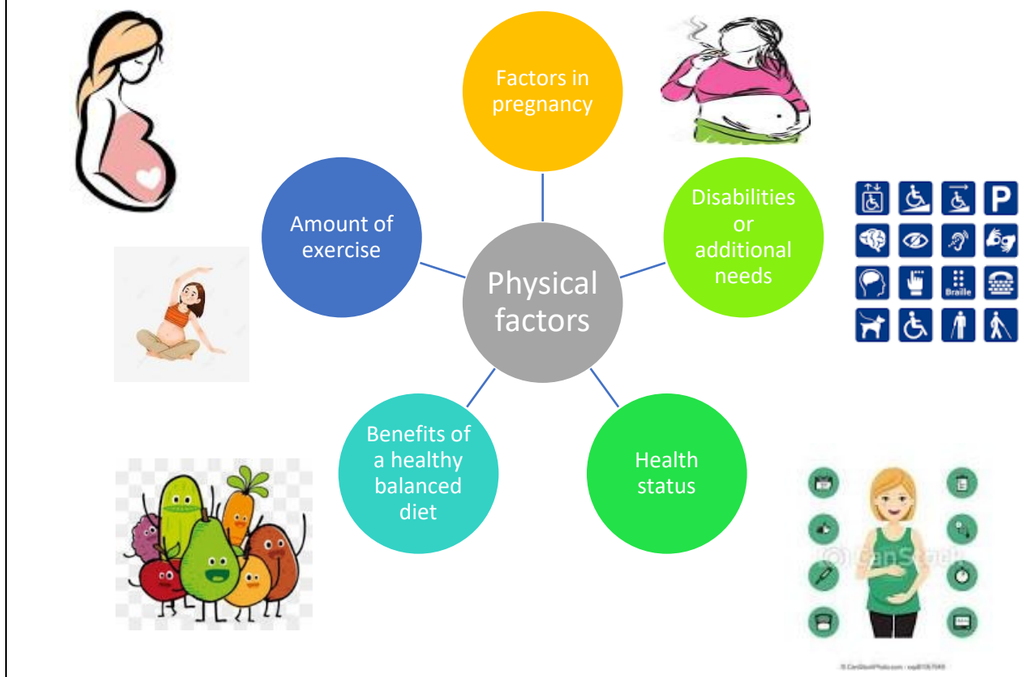
Development of different ages across the development areas			
	0- 18 months	18 months – 3 years	3 years -5 years
Physical	**3m** reflexes disappear; lift head + shoulders; watches fingers. **6m** rolls + turns; sits with support; holds a toy. **9m** sits; crawls; stands; passes toys; drinks cup. **12m**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

HT1 Subject **Child Development: Factors that can impact development Y10b.**

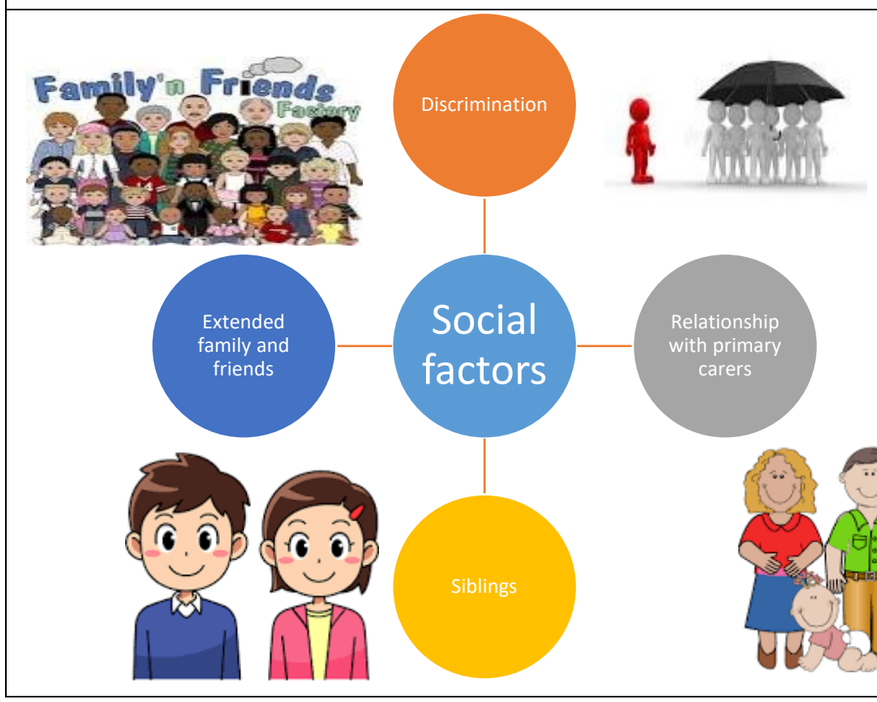
Environmental Factors that can impact a child's development



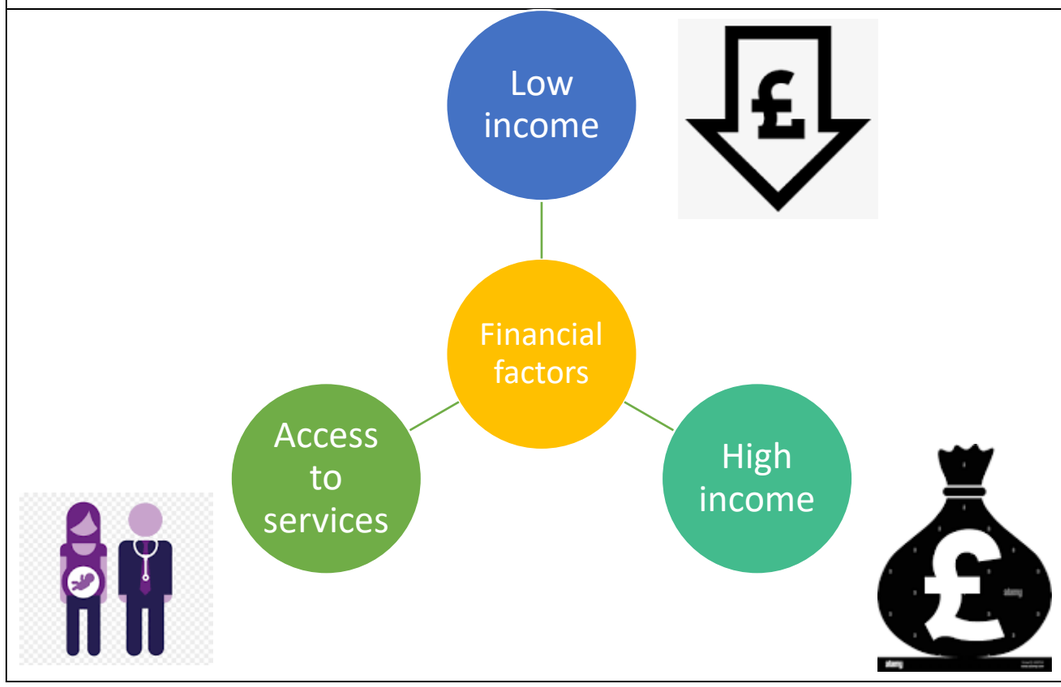
Physical Factors that can impact a child's development



Social Factors that can impact a child's development



Financial Factors that can impact a child's development



1.1 Enterprise and Entrepreneurship

1

Today's business world is dynamic, giving entrepreneurs the opportunity to spot gaps in the market and make their new ideas successful.

NEW BUSINESS IDEAS

Why have new business ideas?

Changes in CONSUMER WANTS
Customers want new products such as electric cars and the latest iPhone. Businesses have to ensure they provide what the consumer wants, otherwise they will be taken over by their competitors.

Products and services become OBSELETE
Fashions and trends change, which means that many products are no longer needed (e.g. typewriters and MP3 players, which have been replaced by computers and smart speakers). When a product comes to the end of its life cycle, businesses have to diversify or adapt to keep up with changing trends.

Changes in TECHNOLOGY
The world of business has changed dramatically with the introduction of computers, the Internet, electric cars and social media. Businesses have to keep up with new technology otherwise they get left behind. Imagine a phone shop that did not sell smartphones!

How do new business ideas happen?

ORIGINAL ideas
Original ideas will fill a gap in the market. These are few and far between because it is very difficult to think of a brand-new product. It is more common for an entrepreneur to develop an existing product or service.

ADAPTING existing products/ services/ideas
Changing an existing product or service is far more usual; for example, the iPhone 15 launched in 2023 is an upgrade of the iPhone 1 launched in 2007.

How RISK and REWARD affect business activity

Business failure — RISK
A business may fail due to:
- **cash flow problems** which prevent it from paying its bills.
- lack of **sales revenue** due to fewer customers. This can be caused by a recession, rising taxes, suppliers going out of business and increasing competition.

Business success — REWARD
Entrepreneurs are motivated when their **business is successful** as they can give people jobs or provide a popular service or product.

Success can be measured by industry awards, e.g. the Women in Business Awards for exceptional businesswomen.

Financial loss — RISK
Financial loss can occur due to:
- **competitors** being more successful because of better marketing.
- **technical faults** causing equipment to malfunction.
- **financial risks** such as not investing enough money or poor planning.

Lack of security — RISK
An entrepreneur who sets up their own business does not have the security of working for an employer, with regular pay and hours. The **lack of job security** and financial security can cause **stress** for the business owner, which will affect their health.

Profit — REWARD
Entrepreneurs cannot guarantee to make a **profit**. Setting up a business is risky, and skill, dedication, determination and hard work are needed to make a business succeed.

Independence — REWARD
Many entrepreneurs like the **freedom** to set up their own business and be their own boss. They can take risks and experiment with new ideas. They are **not restrained** by employers telling them how to run the business or how many hours they can work.

The role of...

...Business Enterprise

Business enterprise is when an entrepreneur sees a business opportunity then sets up a business. This type of business activity serves three main purposes:

To add value: convenience, branding, quality, design, unique selling points
Value can be added to a product in many different ways:
- A product can be made more **convenient**, such as by giving excellent customer service.
- **Branding** is important for all businesses as it defines a business and creates customer loyalty.
- **Quality** is important to ensure that the customer is satisfied with the product.
- **Design** is important to ensure that the product is suitable for the customer.
- A **unique selling point (USP)** is needed to give a business a competitive advantage and attract more customers.

To meet customer needs
To sell products and services successfully, a business needs to establish a relationship with its customers so it can assess their needs and meet them. Needs include quick delivery, good-quality products at a competitive price, excellent customer service, good availability of stock and an accessible website.

To produce goods or services
Goods or services satisfy the needs and wants of consumers. Profit is made by the business which is then reinvested into the business, and the economy continues to grow.

...Entrepreneurship

The role of the entrepreneur is very important. As well as thinking of new ideas, the entrepreneur has to:

Take risks
An entrepreneur has to be able to cope when things go wrong as risks cannot be avoided completely. Some risks will be financial, while other risks may be caused through poor decision-making.

Organise resources
Finance and staff are very important resources for a business. Money is needed to start up the business, run it and expand it. Human Resource management skills are also vital to recruit the right staff and motivate them.

Make business decisions
Being the owner of a business means making major decisions, such as the location of the business, the type of product to be sold and the pricing strategies. Long-term aims are needed as well as short-term objectives to ensure business decisions are accurate.

1.2 Spotting a Business Opportunity – Part One

New and small businesses spot opportunities by understanding customer needs, using market research, and making sure they understand their competition.

Customer needs

An entrepreneur has to spot business opportunities. This can be done by personal experience. An entrepreneur might need a particular product or service that does not exist, so they choose to invent it, e.g. Kindle e-reader. An entrepreneur can also build a business by finding a solution to something that seems impossible, e.g. self-driving cars.

The main customer needs

PRICE

Customers are influenced by price. If the price is low, sales should increase. Businesses use loss leaders to entice customers to buy their products. As loss leaders are products sold for less than their production costs they will not make the business profit but could gain them a potential loyal customer. It is important to check competitors' pricing to ensure your pricing is accurate and reasonable.

Pricing can be changed depending on demand; for example, raincoats are most in demand during the winter whereas sunscreen will sell better in the summer. Prices may change accordingly.

QUALITY

Customers expect a different level of quality depending on the cost of a product. However, a basic standard is always expected.

A customer who stays at a Travelodge (low-budget hotel) will not expect the high-quality service of The Ritz (5-star hotel in London). However, customers will still expect a basic level of service at each hotel, e.g. clean bedsheets.

CHOICE

Customers like having a wide variety of products to choose from, e.g. Subway, where customers can choose their type and size of bread roll, different fillings, various types of salad and different sauces.

To help consumers make decisions when buying products, businesses will market their products by pointing out the difference between each product; for example, breakfast tea, flavoured tea, decaffeinated tea, loose tea or teabags.

CONVENIENCE

The more convenient a business is, the more likely it will be successful. If a business is often closed and not very accessible, customers will choose to go elsewhere.

Supermarkets used to offer 2-hour home delivery slots but have changed these to 1-hour slots, thereby increasing convenience and, consequently, customers.

Importance of understanding customer needs

- Know **who** your customers are.
- Know **what** your customers want.

Customers' **buying decisions** are influenced by:

- Family needs
- Financial needs
- Emotional needs
- Brand loyalty

If a business stops selling a certain brand, customers will go to a competitor instead. If a business starts to sell expensive cars during a recession, it may not be successful so it might be better to sell second-hand cars. Tourists on a beach in a heatwave will be more interested in buying cold drinks than hot drinks.

Understanding the competitive environment

It is important for businesses to understand their competitors if they want to be successful.

The marketing mix (product, place, price and promotion) is extremely important for all businesses, and each business should know the marketing mix of their competitors. Popular products have a lot of competitors as many businesses will sell these products. Businesses will need to ensure the price is competitive. If a product is quite rare and niche, there will be fewer competitors which means businesses can charge a higher price.

A business that costs a lot to start, e.g. a garage selling Rolls Royce cars, will have less competition than a business that does not cost much to start up, e.g. an ironing service, as many people will be more interested in setting up a low-cost business than a high-cost one.

Direct competitors

These are businesses that sell the same product; for example, supermarkets such as Tesco and Morrisons.

Indirect competitors

These are businesses that do not sell the same product but are still each other's competitors; for example, a ferry company and an airline offering transport from Liverpool to Ireland.

Strengths and weaknesses of competitors

PRICE

The lower the price, the more competitive a product will be.

QUALITY

A business that sells good-quality products will encourage customers to buy their products rather than go to a competitor.

LOCATION

A business that sells ice creams near the beach in the summer will be more successful than a business that sells them near office blocks in the winter.

PRODUCT RANGE

The greater the range of products, the more successful the business will be.

CUSTOMER SERVICE

A business that offers excellent customer service will attract more customers than one that doesn't.

A SWOT analysis can help a business understand its competitors.

The business can look at the **strengths**, the **weaknesses**, the **opportunities** and the **threats** of its competitors. Their findings might make a business change its pricing, its marketing, its location, increase its product range or improve its customer service.

Impact of competition on business decision-making

Competition affects businesses greatly, in particular:

- Price
- Innovation and new product ideas

Competitors will influence the price that a business charges. Businesses may try to keep costs as low as possible so they can price their products competitively. Competition may also influence businesses to invent new products or adapt existing products.

1.2 Spotting a Business Opportunity – Part Two

3

New and small businesses spot opportunities by understanding customer needs, using market research, and making sure they understand their competition.

Market Research

Market research is essential before a business launches a new product or service as a business needs to find out what customers want and need, otherwise they will waste a lot of time and money creating something that customers do not want to buy.

Market research is carried out for three main reasons:

- To find out who the **market** is
- To determine the **needs** of potential or existing **customers**
- To find out who the main **competitors** are

Identity and understand customer needs

It is vital a business knows who its customers are and what they want or need. If a product/service is not wanted, the business will not be successful, e.g. a business that customers might need could be a window cleaning business.

Purpose of market research

Identify gaps in the market

Market research helps a business find out what products/services do not exist or are needed, e.g. an entrepreneur might identify there are no window cleaners nearby.

Reduce risk

If a business conducts market research and finds out what customers want, they are more likely to generate sales and profit and be successful, e.g. an entrepreneur might survey potential customers to check whether a window cleaning business is wanted.

Inform business decisions

Market research provides relevant information for a business which may impact on whether the business launches a new product or not, e.g. the result of the survey might show that there is no need for a window cleaning business as there are already plenty of window cleaners in the area.

The Use of Data in Market Research

Qualitative data

This is data relating to people's opinions and preferences. Focus groups and interviews and the use of open questions allow qualitative data to be collected easily as people will discuss their thoughts and feelings. It is useful to find out people's ideas on products, services, packaging, advertising and price changes.

Quantitative data

This is data relating to facts and figures and can be collected via a questionnaire using closed questions with multiple-choice answers. Questionnaires are conducted online, by post or email, or in person, and incentives such as free prize draws can be used to encourage people to complete them. Quantitative data is easy to display visually using graphs.

Role of social media in collecting market research data

Tools for collecting and analysing data can be found on social media platforms and can be cheaper than using traditional research methods such as surveys. Social media allows market researchers to see what a business's potential customers might want. Market trends can be identified, and hashtags can be set up, so the business knows when customers are discussing their product. **Advantages** are quick results and large sample sizes. Businesses can also tap into customer discussions about products, which could lead to improvements. **Disadvantages** are that not everyone uses social media and people might use a different platform, e.g. X rather than Facebook.

Importance of the reliability of market research data

If information collected is inaccurate or out of date, or the sample size is too small to be realistic, this could have a massive negative impact on a business. Data needs to be valid, fit for purpose and a fair reflection of what it is measuring. Data also needs to be reliable and accurate. Valid and reliable data will help ensure the success of a new product or service.

Market Segmentation

Business use market segmentation to target customers.

Demographics

This divides customers into gender, family type or family life cycle, such as young people or families. This can inform decisions about targeting advertising; for example, sending information about 18–30 holidays to retired couples would not be appropriate.

Location

Also known as geographical segmentation, this looks at where customers live. This can inform decisions on where to open shops or which postcodes to direct marketing to.

Income

A person's salary will affect whether they can afford certain products, so businesses divide the market into income groups; for example, there is little point advertising Ferraris (expensive cars) to low-income families.

Lifestyle

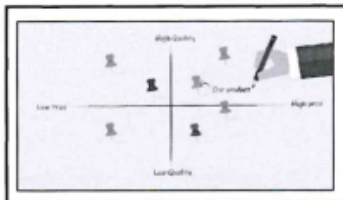
The market can be divided into different interest groups, such as sports, hobbies, interests and holidays. This can inform decisions about advertising to the right type of people; for example, you would not send brochures about mobility scooters to young single people.

Age

People's ages will determine their wants and needs. These will change over the years; for example, young families may want baby equipment while older people may want comfortable recliner armchairs.

Methods of Market Research

Primary research	Secondary research
This is when a researcher collects information themselves. It is up to date, specific, and has not been collected before by anyone else. It can be time-consuming, expensive and could be unreliable if only a small sample is used.	*This is when a researcher uses information that has already been collected. It can be cheap or free, quick to find, relate to a specific industry and be easy to analyse. However, it may be out of date, not very relevant and expensive.*
Surveys: A survey uses a questionnaire to gather information about people's wants and needs. The results will then be analysed. It can be carried out face to face, online, via telephone or on paper and allows a business to find out what customers want.	**Internet, market reports, government reports:** The Internet has a vast source of information, but it could be out of date, inaccurate and irrelevant. It can be free, but sometimes a cost is involved when accessing data from the Internet. Market reports and government reports can provide data that a business might find relevant to their product or service. A useful UK source of information is the Office for National Statistics (ONS), which is a government agency that collects information about UK citizens. The Department for International Trade provides information about exports of products, which could be useful to a business. Market research companies such as Mintel provide data, usually at a cost, for businesses researching the market.
Questionnaires: A set of questions, with a choice of answers, given to people to find out information is known as a questionnaire. It can find out about customers' likes and dislikes about a particular product or service. Often, the answers are multiple-choice.	
Focus groups: A small group of like-minded people brought together to discuss a particular product or service and give feedback. They can be easy to set up and give instant results but can be expensive to run properly.	
Observations: This is when staff are watched without realising it. This allows a business to find out how an employee genuinely treats a customer as they are not putting on an act because they don't know they are being watched.	



Market mapping to identify a gap in the market and the competition

A market map is a graph that allows a business to identify its competitors and see what other products and services exist in the same sector. It is easy to use as it gives a visual representation of the current market. However, just because a gap in the market is obvious from the graph, it does not necessarily mean that customers will want a product that would fill that gap. The mind map should just be a starting point for market researchers.

BTEC Sport

A1 Types of Sports and Physical Activities	
Team Sports	Sports such as rugby, football, netball, hockey, basketball, volleyball, cricket and rounders.
Team Sports	These sports need rules, regulations, competition and an NGB.
Individual sports	Sports such as badminton, athletics, tennis and boxing.
Waterproof clothing	A person is solely responsible for their own actions. Also need rules, regulations, competition and an NGB.

A1 National Governing Bodies - Roles
Support each sport to grow on a national level
Control and regulate the sport whilst developing it
Examples are the Rugby Football League (RFL), The Football Association (FA)
Signposting the laws of the game and securing discipline
Supports players from grass roots to professional level
Educates players on anti-doping
Offers medical advice
Safeguarding of players, coaches, officials and spectators

A1 Benefits of taking part	
Improved fitness levels	Your heart will be improved by aerobic activities; muscles will be stronger but also bones strengthen, resulting in improved bones density. Flexibility will be improved.
Development of leadership skills	Leaders role is to unite a team to accomplish a common goal. Communication, decision-making and supporting others to overcome adversity.
Development of teamwork skills	Encouraging a positive attitude towards a set goal, working together to gain success

Building resilience and self-confidence	Recover quickly from difficulties, sports can be challenging but these challenges can be overcome

A2: Types and Needs of Participants	
Children (5-11) and Adolescents (12-17)	60 minutes of moderate or vigourous activity per day
Children and young people with a disability	120-180 minutes per week of moderate to vigourous intensity
Adults (18-49)	150 minutes of moderate or 75 minutes of vigourous activity per week
Older adults (50+)	150 minutes of moderate or 75 minutes of vigourous activity or a combination of both per week
Adults with a disability	150 minutes of moderate or vigourous activity per week with no less than 10 minutes for each session

A3: Barriers to Participation	
Cost	Important to consider the clothing and equipment needed as well as the cost of transport when taking up a sport
Access	The location may determine whether you can attend and are the resources in your area
Time	You may ask when have you got the time to exercise because of other commitments such as school, work, part-time jobs or family commitments
Personal and Cultural	Limited access to single-sex sessions may be a concern for some, having limited access to appropriate clothing in terms of beliefs, limited role models from diverse cultural backgrounds and limited access to male-dominated sports.

A4: Methods to Address Barriers	
Access	Looking a location and transport considerations when selecting your activity
Cost and Time	Discounted sessions, equipment hire, free parking, offer creche facilities, extend opening hours, run sessions throughout the day

Personal and Cultural	Offer private changing rooms, allow adaptations to clothing expectations, offer parent and child sessions, women-only sessions, have diversity in staffing, cultural awareness training for staff
NGBs	Work with local authorities to secure facilities to use which are accessible to all