



ISCA ACADEMY

INSPIRATION FOR LIFE

AUTUMN 2020

KNOWLEDGE BOOKLET

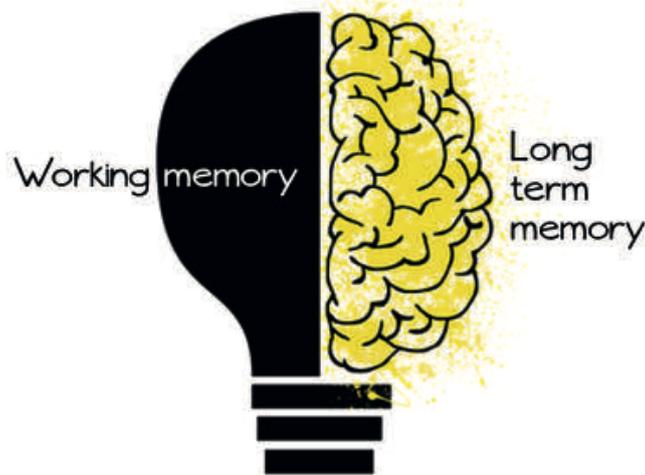
YEAR 11

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WHAT IS A KNOWLEDGE ORGANISER?

Your mind is split into two parts: the working-memory and the long-term memory. Everybody's working-memory is limited, and can very easily become overwhelmed and this is known as overload. Your long-term memory, on the other hand, is effectively a limitless storehouse for information.



You can support your working memory by storing key facts and processes in your long-term memory. These facts and processes can then be retrieved to stop your working memory becoming overloaded:

Let's look at an example, the basic number fact: $7 \times 8 = 56$

If you can instantly recall that $7 \times 8 = 56$, your working memory has more space to think about a more difficult problem, like 37×8 . The answer of 56 comes effortlessly, and you can focus on 30×8 , then add the product to the 56 in your head.

If you do not know that $7 \times 8 = 56$ straight away, you are more likely to become confused and frustrated. Being able to very quickly recall key facts is a way of hacking your working memory, making thinking about difficult stuff much easier.

This booklet contains knowledge organisers for all of your subjects for the Autumn term. Each knowledge organiser has the key information, which needs to be memorised to top up your long-term memory in order to help you master your subject and be successful in lessons. You will be expected to follow the homework schedule on page 4.

HOW TO USE YOUR KNOWLEDGE ORGANISER

Challenge yourself

Which will you choose?



Look Cover Write Check

Look at your knowledge organiser, **C**over a section of it, **W**rite out the content you have just covered from memory and **C**heck you have recalled it correctly



Mindmaps

Place the key word/concept in the middle. Go wild with colourful, flowing shapes that link the key definitions and concepts.



Revision Clock

Draw a clock and add the topic in the middle. Then, break it down into 10 minute sections. Add notes in each segment. Cover the clock and recite all the information out loud.



Mnemonics

Creating mnemonics is a great way for remembering groups or lists of words. For example, to remember the order of planets in the solar system:

My **V**ery **E**xcited **M**other **J**ust **S**erved **U**S
Nachos



Flash Cards

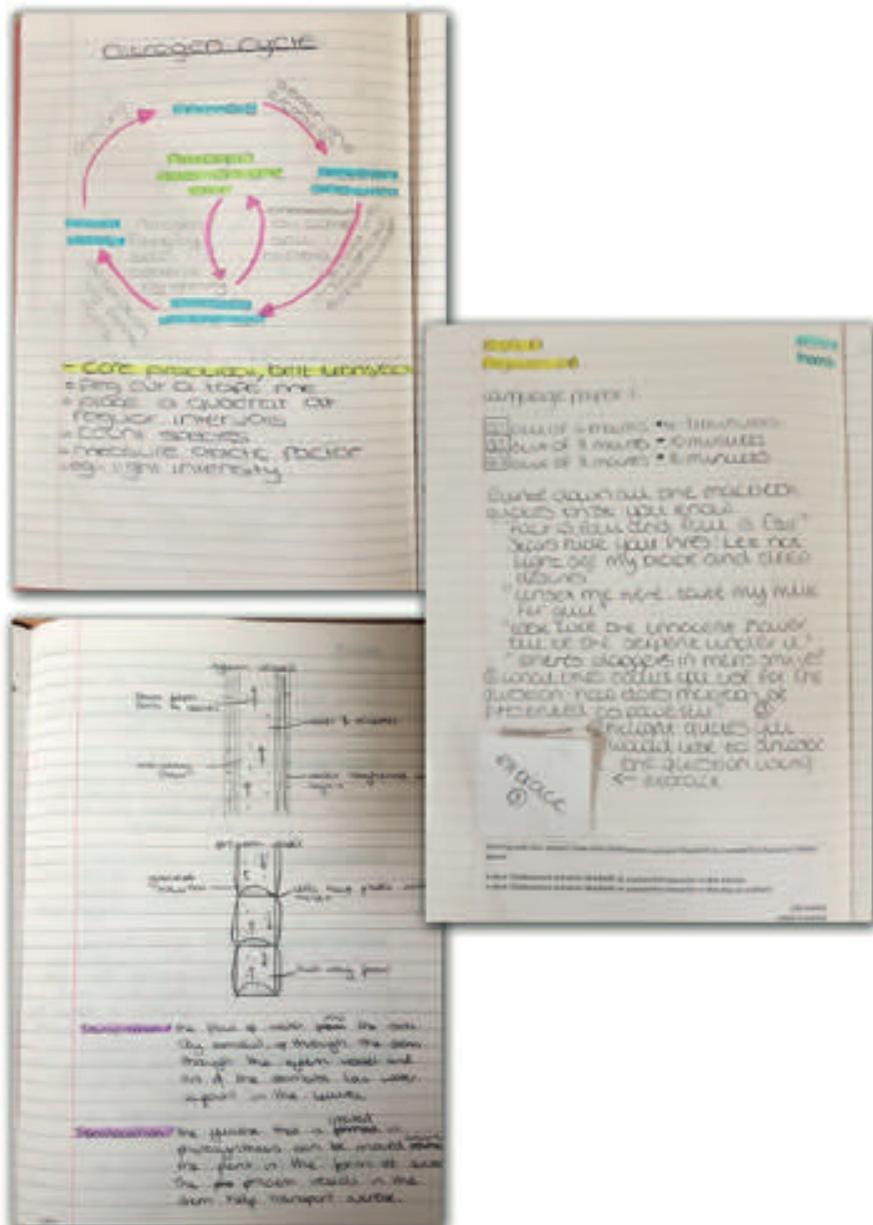
Write down the word/term on one side and a definition/explanation on the other side. Once you have notes written in your own words and summarised – move onto testing yourself quickly.

EXPECTATIONS OF YOU

1. Check the schedule on the next page to see which knowledge organisers you should use each day for your homework
2. Complete **one full page for each subject** on the schedule in your knowledge book **every day**
3. Use your knowledge organiser after you have finished to **mark and correct** your own work
4. **Sign your self-check sheet at the end of each week** after you have finished your full page each day
5. Get your self-check sheet **signed by your tutor** during your knowledge organiser tutor time session

T	on Time
A	Accurate
N	Neat
C	Complete

Homework should be **TANC**. Below is an example of homework that would meet the expected standard. If it does, your tutor will sign your log on the morning you are working in silence on your knowledge organiser.



YOUR SCHEDULE

Day	Subject	Subject
Monday	Numeracy – online	Literacy - online
Tuesday	Science	Option A
Wednesday	Option B	Option C
Thursday	Maths	Science
Friday	English	RE

Every Monday you will have Numeracy and Literacy homework. This will not be using your knowledge organiser, numeracy will be using SPARX and literacy will be using Doodle, both of which are online. Your English and Maths teachers will set these tasks.

Below are the option subjects you are currently studying:

Option A	Option B	Option C
History Drama French Computer Science Dance Geography Resistant Materials	Art Catering Geography History Drama French Spanish Photography	PE History Futsal Geography Spanish Catering Music

Week commencing	Self Check	Tutor Sign	Week commencing	Self Check	Tutor Sign
7/9/2020			9/11/2020		
14/9/2020			16/11/2020		
21/9/2020			23/11/2020		
28/9/2020			30/11/2020		
5/10/2020			7/12/2020		
12/10/2020			14/12/2020		
19/10/2020					

You will notice on each knowledge organiser that there are green and blue edged boxes with text in. Text in a green edged box is key vocabulary you need to learn and writing in a blue edged box are the key concepts/knowledge you will need to learn.

Key Vocabulary will be written in a green edged box like this.

Key concepts/ideas will be written in a blue edged box like this

Contextual Timeline

- 19th century = Industrial Revolution
- 1834 – Poor Law was introduced
- 1843 – The novel was written



The Isca Way: use these sentences, in whichever order, as a *guide* to help organise your thinking in the exam:
The writer establishes / uses / creates _____ to ...
This suggests / conveys / portrays...
The word / image / phrase "----" has connotations of...
At a deeper level...
Perhaps...Possibly...Metaphorically...
----becomes a symbol for...Symbolically...
Priestley is challenging...Advocating... ..Is trying to change...
The audience thinks...Feels...Is made to understand... Wonders whether...Is left questioning...

'A Christmas Carol' – Charles Dickens

Characters:

Scrooge – A selfish business man who transforms into a charitable philanthropist.
Fred – Scrooge’s nephew whose party invitation he declines
Jacob Marley – Scrooge’s dead partner who returns as a ghost to warn scrooge to change his ways.
Bob Cratchitt – Scrooge’s clerk who doesn’t have much money. He loves his family and is shown to be happy and morally upright.
Tiny Tim – Bob’s ill son whose story plays a part in inspiring Scrooge’s transformation.
Mrs Cratchitt – Bob’s wife
The Ghost of Christmas Past – A strange combination of young and old, wearing white robes and looking like a candle.
The Ghost of Christmas Present - A portly, jovial gentleman surrounded by a warm glow. He brings joy to the neediest.
The Ghost of Christmas Yet To Come – A robed and hooded spirit who confronts Scrooge with his own tombstone.
Fezziwig – Scrooge’s ex-employer
Belle – A woman who scrooge was in love with; she left him due to his greed.
Fan – Scrooge’s sister



Important Quotations:

“Hard and sharp as flint”
 “As solitary as an oyster”
 “I wear the chain I forged in life”
 “He could not hide the light”
 “Are there no prisons...are there no workhouses...”
 “I’m not the man I was. I’m not the man I must have been”
 “Beneath a ragged sheet, there lay a something covered up”
 “Glowing”
 “Ogre of the family”
 “As good as gold”
 “It is not my business”
 “Mankind was my business”
 “I don’t know anything. I’m quite a baby.”
 “Another idol has displaced me... a golden one”
 “Show me no more!”
 “The mention of his name cast a dark shadow”
 “They are Man’s. This boy is Ignorance. This girl is Want. Beware for I see that written which is Doom.”
 “Yellow...wolfish”

The story:

Ebenezer Scrooge lives a cold and selfish life. He is visited by ghosts, who show him why he needs to change his ways. By the end of the novella – he redeems himself.

Themes:

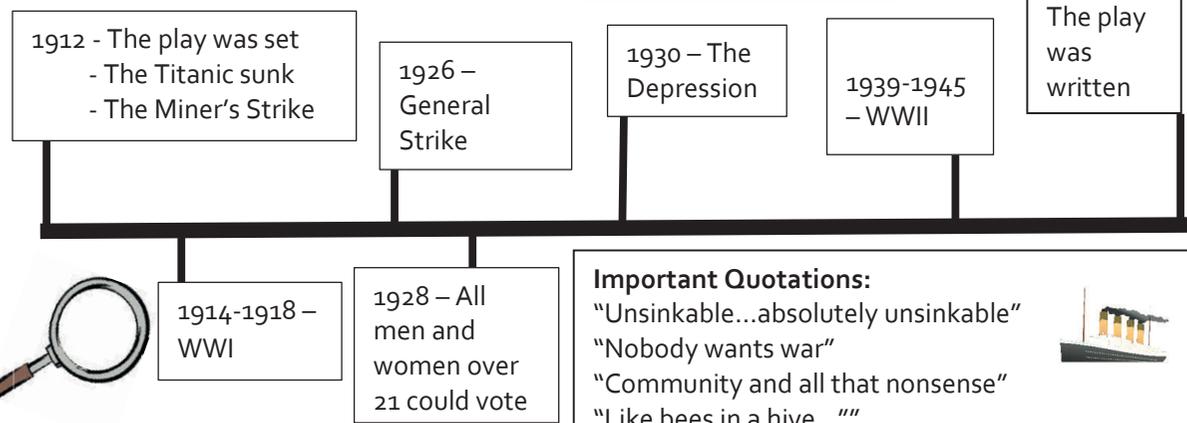
- Social responsibility
- Social Class
- Society
- Wealth
- Family
- Love
- Redemption
- Supernatural
- Ignorance and Want
- Christmas
- Education

Dickens
Society
Enlightenment
Redemption
Parsimonious
Misanthropic
Benevolent
Victorian
Cyclical
Solitary
Apparition



Introducing Your Idea	
The beginning of a text	Initially... Instantly...
As the text develops	Over the course of the text... Plausibly... Perhaps... Evidently...
What stands out?	Interestingly... Of importance here is... This idea is accentuated... This is further emphasised... This is reinforced... This is juxtaposed against...
What else could it mean?	In addition... It is worth considering... At a deeper level...
The ending of the text	Consequently... Towards the end of the text... Ultimately...

'An Inspector Calls' – J.B. Priestley



Characters:
Mr Arthur Birling: A wealthy businessman, capitalist
Mrs Sybil Birling: his wife and social superior
Sheila Birling: their young daughter (younger generation)
Eric Birling: their son (younger generation)
Mr. Gerald Croft: engaged to Sheila, son of Lady Croft and Sir Croft
Inspector Goole: socialist
Eva Smith / Daisy Renton: a young working-class woman

Contextual Timeline

Important Quotations:

“Unsinkable...absolutely unsinkable”
 “Nobody wants war”
 “Community and all that nonsense”
 “Like bees in a hive...”
 “I accept no blame for it at all”
 “Now look at the pair of them – the famous younger generation who know it all”
 “If men will not learn that lesson, when they will be taught it in fire and blood and anguish.”
 “The point is, you don't seem to have learnt anything.”
 “There are millions and millions and millions of Eva Smiths and John Smiths...”
 “Cold”
 “But these girls aren't cheap labour – they're people”
 “Girls of that class”
 “We are all to blame”
 “You're not the kind of father a chap could go to when he's in trouble”
 “It's better to ask for the earth than to take it.”



Important Stage Directions:

“The lighting should be pink and intimate...then becomes brighter and harder”
 “The sharp ring of the front door bell”
 “An impression of massiveness, solidity and purposefulness”
 “Cutting in”
 “He moves nearer a light”
 “With a little crv...runs out”



The story:

A police inspector interrupts the Birling family's celebration of the engagement of Sheila and Gerald. The story unravels to show each of the family's involvement with the death of a young working girl, Eva Smith.

Key concepts

- Social responsibility
- Social Class
- Young and Old Generation
- Gender
- Society
- Wealth
- Family
- Love

Priestley

- Birling
- Responsibility
- Socialism
- Capitalism
- Welfare State
- Socialism
- Capitalism
- Conscience
- Omniscient
- Microcosm
- Cyclical
- Patriarchal Society
- Redemption
- Remorseful

The Isca Way: use these sentences, in whichever order, as a *guide* to help organise your thinking in the exam:

- The writer establishes / uses / creates ____ to ...
- This suggests / conveys / portrays...
- The word / image / phrase “----” has connotations of...
- At a deeper level... Perhaps...Possibly...Metaphorically...
- ----becomes a symbol for...Symbolically...
- Priestley is challenging...Advocating... ..Is trying to change.
- The audience thinks...Feels...Is made to understand... Wonders whether...Is left questioning...



GCSE English Language Paper 1: Explorations in creative reading and writing

Question 1

List 4 things...in a given section. Write in full sentences.

X4

Question 2 = LANGUAGE

The writer presents ___ as ___ by using _____.
"Evidence"
Use the Isca Way

X3

Question 3 = STRUCTURE

- In the beginning the writer focuses on...
- The first lines establishes...
- The paragraph/sentence foreshadows...
- The writer establishes...
- The viewpoint/ perspective...
- The focus shifts to/focus narrows to...
- In the second half...
- The idea is further emphasised when...
- The tone changes when...
- Concludes with...
- The last line interests the reader because...
- The juxtaposition of...

X3

Question 5 = WRITING

Creative writing based on an image or title
Remember to plan!

Ingredients for Fantastic writing:

1. Ambitious Vocabulary
2. Structure
3. Punctuation
4. Language Features
5. Sentences

Question 4 = LANGUAGE and STRUCTURE

Agree/disagree with the statement
I agree / disagree that...
Use the Isca Way
Therefore / consequently / subsequently I agree / disagree...

X3

Introduce your idea

THEN

Get the marks

The beginning of a text

Initially...
Instantly...
As the text develops
Over the course of the text...
Plausibly...
Perhaps...
Evidently...
What stands out?
Interestingly...
Of importance here is...
This idea is accentuated...
This is further emphasised...
This is reinforced...
This is juxtaposed against...
What else could it mean?
In addition...
It is worth considering...
At a deeper level...
The ending of the text
Consequently...
Towards the end of the text...
Ultimately...

The Isca Way

Use these words and phrases in whichever order to analyse and respond to the writer's methods: language, structure, character, symbol, theme...
You can use the phrases in whichever order.
You do not have to use each one in every paragraph:

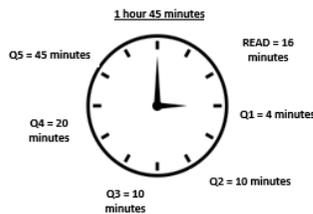
- the writer uses/establishes...by...
- this suggests / conveys / depicts / portrays...
- the word / image / phrase "..." has connotations of...
- at a deeper level / this seems to be a metaphor for...
- This becomes a symbol for...
- The writer is ... challenging / delivering a message about / advocating...
- The reader / audience...

Key vocabulary:

Tone
Connotations
Establishes
Suggests
Conveys
Portrays
Evokes
Shifts
Viewpoint
Perspective
Furthermore
Emphasised

Writer's methods:

Simile – comparison using like or as
Metaphor – comparison saying one thing is another
Personification – giving inanimate objects human qualities
Juxtaposition – two things with contrasting effects placed close to each other
Cyclical – a repeated idea / word (at the beginning and end of a text/extract)
Imagery – creates a picture in the reader's head
Foreshadowing – a hint or indication of something to come
Focus shift – the focus of the writing changes
Adjectives – describing words
Verbs – action or state
Adverbs – describes how the verb is done

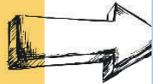


GCSE English Language Paper 2: Writers' viewpoints and Perspectives

Question 1

List 4 things...in a given section. Write in full sentences.

X4



Question 2 = SUMMARISE the differences

Identify a difference: **In Source A...**

Evidence: **For example...**

Effect: **This suggests / this conveys / this demonstrates...**

Compare: **Whereas in Source B...**

X3



Question 3 = LANGUAGE

The writer presents ___ as ___ by using _____.
"Evidence"

The connotations of the word/image/phrase "----" are...
At a deeper level

This makes the reader understand/ think/feel...
This links to...

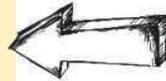
Question 5 = WRITING

Creative writing based on an image or title

Remember to plan!

Ingredients for Fantastic writing:

6. Ambitious Vocabulary
7. Structure
8. Punctuation
9. Language Features
10. Sentences



Question 4 = COMPARE the writers viewpoints

In Source A, the writer presents ___ as ___ by using _____.

Use the Isca Way

X3



X3

Introduce your idea

THEN

Get the marks

The beginning of a text

Initially...
Instantly...
As the text develops
Over the course of the text...
Plausibly...
Perhaps...
Evidently...
What stands out?
Interestingly...
Of importance here is...
This idea is accentuated...
This is further emphasised...
This is reinforced...
This is juxtaposed against...
What else could it mean?
In addition...
It is worth considering...
At a deeper level...
The ending of the text
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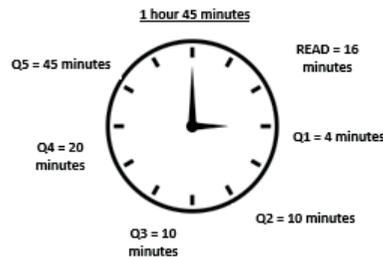
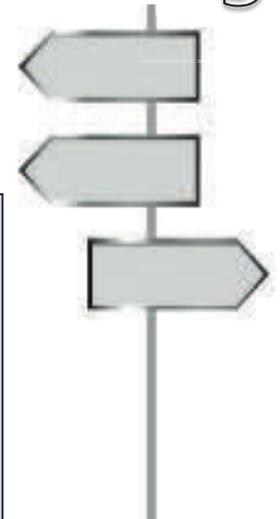
The Isca Way

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- the writer uses/establishes...by...
- this suggests / conveys / depicts / portrays...
- the word / image / phrase "..." has connotations of...
- at a deeper level / this seems to be a metaphor for...
- This becomes a symbol for...
- The writer is ... challenging / delivering a message about / advocating...
- The reader / audience...

Key vocabulary:

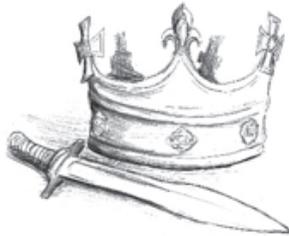
Tone
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Writer's methods:

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Adjectives – describing words
Verbs – action or state
Adverbs – describes how the verb is done

'Macbeth' Knowledge Organiser



<p>The beginning of a text Initially... Instantly...</p>
<p>As the text develops Over the course of the text... Plausibly... Perhaps... Evidently...</p>
<p>What stands out? Interestingly... Of importance here is... This idea is accentuated... This is further emphasised... This is reinforced... This is juxtaposed against...</p>

<p>What else could it mean? In addition... It is worth considering... At a deeper level...</p>
<p>The ending of the text Consequently... Towards the end of the text... Ultimately...</p>

The Isca Way

Use these words and phrases in whichever order to analyse and respond to the writer's methods: language, structure, character, symbol, theme...

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- the word / image / phrase "----" has connotations of...
- at a deeper level / this seems to be a metaphor for...
- This becomes a symbol for...
- The writer is ... challenging / delivering a message about / advocating...
- The reader / audience...

1 The play opens as three witches plan a meeting with the brave Scottish nobleman Macbeth, who at that moment is fighting in a great battle. When the battle is over, Macbeth and his friend Banquo come across the witches who offer them three predictions: that Macbeth will become Thane of Cawdor and King of Scotland, and that Banquo's descendants will become kings.

Banquo laughs at the prophecies but Macbeth is excited, especially as soon after their meeting with the witches Macbeth is made Thane of Cawdor by King Duncan, in return for his bravery in the battle.

2. He writes to his wife, Lady Macbeth, who is as excited as he is. A messenger tells Lady Macbeth that King Duncan is on his way to their castle and she invokes evil spirits to help her do what must be done next. Macbeth is persuaded to kill Duncan by his wife and stabs him to death. No-one is quite sure who committed this murder; no-one feels safe. Macbeth is crowned king.

3. Macbeth is king - the second prediction from the witches has come true, but he starts to fear the third prediction (that Banquo's descendants will also be kings). Macbeth decides to have Banquo and his son killed, but the plan goes wrong. Banquo is killed but his son Fleance escapes. Macbeth sees Banquo's ghost at the feast and it seems that he is losing his mind as he hallucinates for the second time in the play. He seeks out the witches for more predictions. Their promises make him think that he is invincible.

4 He becomes more ruthless and orders the murder of the family of Macduff, a lord who seems to be challenging him. In England, forces begin to gather together to fight Macbeth.

5. Macbeth still thinks he is safe but one by one the witches' prophecies come true. Lady Macbeth is obsessed with guilt over the death of Duncan, becomes deranged and kills herself. A large army marches on Macbeth's castle. Macbeth is killed by Macduff, and his head is placed on the battlements of the castle.



- Tyrant / tyranny
- Ambition
- Regicide
- Malevolent
- Corrupt / corruption
- Usurper / usurped
- Jacobean
- Supernatural
- Soliloquy
- Equivocal / equivocator

- Ambition
 - Evil
 - Order/disorder
 - Appearance & reality
 - Guilt
 - Loyalty/disloyalty
 - Kingship
 - The Supernatural
 - Manhood/courage
 - Fate vs Free will
 - Revenge
- Key images (motifs)**
Some ideas occur many times and have more significance:
- Blood
 - Darkness and night
 - Sleep
 - Daggers
 - Animals, birds and insects
 - Heaven & Hell



Language Methods linked to Poetry	
Stanza (A verse)	A Stanza is a set amount of lines grouped by rhythmical pattern
Enjambment	The continuation of a sentence or phrase from one line to the next, without pause.
Personification	Giving inanimate objects human qualities to bring them to life
Alliteration	Repetition of one sound at the beginning of words.
Sibilance	Repetition of the S or SH sound at the beginning of words.
Half-rhyme	Words in which the consonants rhyme, rather than the vowels.
Simile	Comparing one thing to another using 'as' or 'like'
Metaphor	Describes a person or object by referring to something that is considered to have similar characteristics
Rhyming Couplets	Two lines following one another which rhyme
Rhythm	The arrangement of words to form a regular beat through a pattern of stresses.

'Unseen' means you have most likely have NEVER seen the poems in this section of the exam, ever... in your life... it does not mean they are invisible on the page!

You need to analyse the first Unseen Poem in response to the question.

What you need to write about in Section C:

Theme – the message the writer is conveying to their reader.

Language – write about how words and phrases are used to convey the writer's message. You should focus on the methods the writer uses.

Structure – how the poem has been 'built'. You could analyse how the rhythm; enjambment; stanzas; line number and length help to convey the key theme.

Comparing connectives

Likewise
Similarly
Equally
Likewise
As with

Contrasting connectives

However
Whereas
On the other hand
Alternatively
Although

Remember to write using The Isca Wav and The Sianpost Starters

The beginning of a text
Initially...
Instantly...

As the text develops
Over the course of the text...
Plausibly...
Perhaps...
Evidently...

What stands out?
Interestingly...
Of importance here is...
This idea is accentuated...
This is further emphasised...
This is reinforced...
This is juxtaposed against...

What else could it mean?
In addition...
It is worth considering...
At a deeper level...

The ending of the text
Consequently...
Towards the end of the text...
Ultimately...

27 : 1 In 'To a Daughter Leaving Home' how does the poet present the speaker's feelings about her daughter? [24 marks]

27 : 2 In both 'Poem for My Sister' and 'To a Daughter Leaving Home' the speaker describes feelings about watching someone they love go away. What are the similarities and/or differences between the ways the poets present these feelings? [8 marks]

The second Unseen Poem response expects you to focus on just the effects of methods in **both** Unseen Poems.

General subject terminology used in poetry: simile, metaphor, personification, onomatopoeia, oxymoron, juxtaposition, emotive language, pathetic fallacy, alliteration, dissonance, imagery, symbolism, semantic field, tone, sensory imagery, synaesthesia, form, ambiguity, connotation, theme.

Advice from AQA:
"In preparing for the unseen poetry section of the examination students should experience a wide range of poetry in order to develop their ability to closely analyse unseen poems. They should be able to analyse and compare key features such as their content, theme, structure and use of language."

Power and Conflict Poetry – Knowledge Organiser

Remains by Simon Armitage Content, Meaning and Purpose -Written to coincide with a TV documentary about those returning from war with PTSD. -Speaker describes shooting a looter dead in Iraq and how it has affected him. -To show the reader that mental suffering can persist long after physical conflict is over. 		Exposure by Wilfred Owen Content, Meaning and Purpose -Speaker describes war as a battle against the weather and conditions. -Imagery of cold and warm reflect the delusional mind of a man dying from hypothermia. -Owen wanted to draw attention to the suffering, monotony and futility of war. -Written in 1917 before Owen went on to win the Military Cross for bravery, and was then killed in battle in 1918: the poem has authenticity as it is written by an actual soldier. - Of his work, Owen said: "My theme is war and the pity of war".		Kamikaze by Beatrice Garland Content, Meaning and Purpose -In World War 2, Japanese Kamikaze pilots would fly manned missiles into targets such as ships. -This poem explores a kamikaze pilot's journey towards battle, his decision to return, and how he is shunned when he returns home. -As he looks down at the sea, the beauty of nature and memories of childhood make him decide to turn back. -Cowardice or surrender was a great shame in wartime Japan.	
Quotes: -"Remains" - the images and suffering remain. -"his blood-shadow stays on the street" -"he's here in my head when I close my eyes / dug in behind enemy lines" – metaphor for a war in his head; the PTSD is entrenched. -"his bloody life in my bloody hands"	Form and Structure -Monologue, told in the present tense to convey a flashback (a symptom of PTSD). -First four stanzas are set in Iraq; last three are at home, showing the aftermath.	Quotes: -"Our brains ache" -"the merciless iced east winds that knive us..." - "slowly our ghosts drag home"	Form and Structure -Repetition of " but nothing happens " creates circular structure implying never ending suffering -Rhyme scheme ABBA and hexameter gives the poem structure and emphasises the monotony.	Quotes: -" he must have wondered which had been a better way to die " -" dark shoals of fish flashing silver " - " they treated him as though he no longer existed ": cruel irony – he chose to live but now must live as though he is dead. -" was no longer the father we loved ": the pilot was forever affected by his decision.	Form and Structure -Narrative and speaker is third person, representing the distance between her and her father, and his rejection by society. -The first five stanzas are ordered (whilst he is flying on his set mission). -Only full stop is at the end of Stanza Five: he has made his decision to turn back. -The final two are in italics and have longer line to represent the fallout of his decision: his life has shifted and will no longer be the same.
Charge of the Light Brigade by Alfred, Lord Tennyson Content, Meaning and Purpose - Published six weeks after a disastrous battle against the Russians in the (unpopular) Crimean War -Describes a cavalry charge against Russians who shoot at the lightly-armed British with cannon from three sides of a long valley. -Of the 600 hundred who started the charge, over half were killed, injured or taken prisoner. -It is a celebration of the men's courage and devotion to their country, symbols of the might of the British Empire. - Although Tennyson glorifies the soldiers who took part, he also draws attention to the fact that a commander had made a mistake: " Someone had blunder'd ".		Bayonet Charge by Ted Hughes Content, Meaning and Purpose -Describes the terrifying experience of 'going over the top': fixing bayonets (long knives) to the end of rifles and leaving a trench to charge directly at the enemy. -Steps inside the body and mind of the speaker to show how this act transforms a soldier from a living thinking person into a dangerous weapon of war. -He draws a contrast between the idealism of patriotism and the reality of fighting and killing. (" King, honour, human dignity, etcetera ") -Published in 1957, but most-likely set in World War 1. 		War Photographer Content, Meaning and Purpose -Tells the story of a war photographer developing photos at home in England: as a photo develops he begins to remember the horrors of war – painting a contrast to the safety of his dark room. -He appears to be returning to a warzone at the end of the poem. -Duffy conveys both the brutality of war and the indifference of those who might view the photos in newspapers and magazines: those who live in comfort and are unaffected by war. 	
Quotes: -" Into the valley of Death ": this Biblical imagery portrays war as a supremely powerful, or even spiritual, experience. -" jaws of Death " and " mouth of Hell ": presents war as an animal that consumes its victims. -" Honour the Light Brigade/Noble six hundred ": language glorifies the soldiers, even in death. The 'six hundred' become a celebrated and prestigious group.	Form and Structure -This is a ballad, a form of poetry to remember historical events – we should remember their courage. -6 verses, each representing 100 men who took part. -First stanza tightly structured, mirroring the cavalry formation. Structure becomes awkward to reflect the chaos of battle and the fewer men returning alive.	Quotes: -" The patriotic tear that brimmed in his eye Sweating like molten iron ": his sense of duty (tear) has now turned into the hot sweat of fear and pain. -" cold clockwork of the stars and nations ": the soldiers are part of a cold and uncaring machine of war.	Form and Structure -The poem starts 'in medias res': in the middle of the action, to convey shock and pace. -Enjambment maintains the momentum of the charge. -Time stands still in the second stanza to convey the soldier's bewilderment and reflective thoughts. -Contrasts the visual and aural imagery of battle with the internal thoughts of the soldier = adds to the confusion.	Quotes: -" All flesh is grass ": Biblical reference that means all human life is temporary – we all die eventually. -" Half formed ghost " -" all flesh is grass " -" blood stained into a foreign dust ": lasting impact of war – links to Remains and 'blood shadow'.	Form and Structure -Enjambment – reinforces the sense that the world is out of order and confused. -Rhyme reinforces the idea that he is trying to bring order to a chaotic world – to create an understanding. -Contrasts: imagery of rural England and nightmare war zones. -Third stanza: A specific image – and a memory – appears before him.

Key concepts:

- Guilt – war continues to effect solders even once they have returned; for some it haunts them (PTSD).
- Loss – these poems explore loss: loss of power, loss of life, loss of patriotism, loss of control etc.
- Futility – war (and war efforts) are, at times, presented as pointless.
- Powerlessness
- Patriotism – the poets present varying degrees of patriotism.
- Inner conflict & memory

Vocabulary:

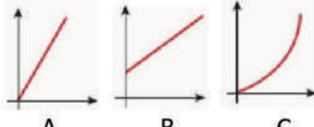
Futility	Inescapable	Eurocentric
Hopelessness	conflict detachment	Corruption / corrupt
Traumatised	Anger	Injustice
Guilt	Loss	Inequality
Suffering	Fragility	Criticise
Patriotism	Shame	institutions

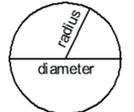
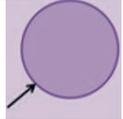
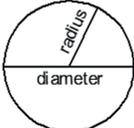
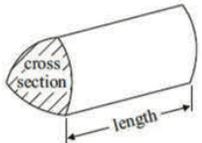
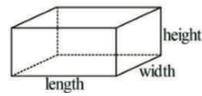
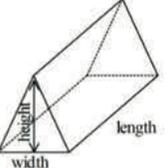
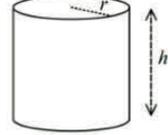
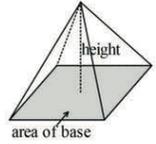
Poppies by Jane Weir Content, Meaning and Purpose -A modern poem that offers an alternative interpretation of bravery in conflict: it does not focus on a soldier in battle but on the mother who is left behind and must cope with her loss. -Set around the time of the Iraq and Afghan wars, but the conflict is deliberately ambiguous to give the poem a timeless relevance to all mothers and families. -There are hints of a critical tone; about how soldiers can become intoxicated by the glamour or the military: “a blockade of yellow bias” and “intoxicated” .		The Emigree by Carol Rumens Content, Meaning and Purpose -‘Emigree’ – a female who is forced to leave their county for political or social reasons. -The speaker describes her memories of a home city that she was forced to flee. The city is now “sick with tyrants” . -Despite the cities problems, her positive memories of the place cannot be extinguished. -Emigree was published in 1993. The home country of the speaker is not revealed – this ambiguity gives the poem a timeless relevance.		Checking Out Me History by John Agard Content, Meaning and Purpose -Represents the voice of a man from the Caribbean colony of British Guiana, who was frustrated by the Eurocentric history (<i>focusing on European culture or history to the exclusion of a wider view of the world</i>) curriculum that he was taught at school – which paid little attention to black history. -Black history is in italics to emphasise its separateness and to stress its importance. -John Agard was born in the Caribbean in 1949 and moved to the UK in the 1970s. -His poetry challenge racism and prejudice.	
Quotes: -“released a songbird from its cage” -“I listened, hoping to hear your playground voice catching on the wind” -“the world overflowing like a treasure chest”	Form and Structure -Strong sense of form despite the free verse , stream of consciousness addressing her son directly – poignant -No rhyme scheme makes it melancholic -Nearly half the lines have caesura – she is trying to hold it together, but can’t speak fluently as she is breaking inside.	Quotes: -“I left it as a child”: ambiguous meaning – either she left when <i>she</i> was a child or the city was a child (it was vulnerable and she feels a responsibility towards it). -“I am branded by an impression of sunlight”: imagery of light - it will stay with her forever. -Personification of the city: “I comb its hair and love its shining eyes” (she has a maternal love for the city) and “My city takes me dancing” (it is romantic and passionate lover) -“My city hides behind me”: it is vulnerable and – despite the fact that she had to flee – she is strong. -Semantic field of conflict: “Tyrant, tanks, frontiers”	Form and Structure -First person. -The last line of each stanza is the same (epistrophe): “sunlight” : reinforces the overriding positivity of the city and of the poem. -The first two stanzas have lots of enjambment – conveys freedom. The final stanza has lots of full-stops – conveys that fact that she is now trapped.	Quotes: -Imagery of fire and light used in all three stanzas regarding black historic figures: “Toussaint de beacon”, “Fire-woman”, “yellow sunrise” . -Uses non-standard phonetic spelling (“Dem tell me wha dem want” , to represent his own powerful accent and mixes Caribbean Creole dialect with standard English. -“ I carving out me identity ”: metaphor for the painful struggle to be heard, and to find his identity.	Form -Dramatic monologue, with a dual structure. -Stanzas concerning Eurocentric history (normal font) are interspersed with stanzas on black history (in <i>italics</i> to represent separateness and rebellion). - Black history sections arranged as serious lessons to be learned; traditional history as nursery rhymes, mixed with fairytales (mocking of traditional history). - The lack of punctuation, the stanzas in free verse, the irregular rhyme scheme and the use of Creole could represent the narrator’s rejection of the rules. -Repetition of “Dem tell me” : frustration.

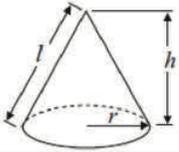
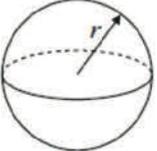


Ozymandias by Percy Bysshe Shelley Content, Meaning and Purpose -The narrator meets a traveller who tells him about a decayed stature that he saw in a desert. -The statue was of a long forgotten ancient King: the arrogant Ozymandias, ‘king of kings.’ -The poem is ironic and a metaphor: Human power is only temporary – the statue now lays crumbled in the sand, and even the most powerful human creations cannot resist the power of nature. -Shelley disliked the concept of a monarchy and the oppression of ordinary people.		My Last Duchess by Robert Browning Content, Meaning and Purpose -The Duke is showing a visitor around his large art collection and proudly points out a portrait of his last wife, who is now dead. He reveals that he was annoyed by her over-friendly and flirtatious behaviour. -He can finally control her by objectifying her and showing her portrait to visitors when he chooses. -Browning may have been inspired by the story of an Italian Duke (Duke of Ferrara): his wife died in suspicious circumstances and it was rumoured that she had been poisoned.		Tissue by Imtiaz Dharker Content, Meaning and Purpose -Two different meanings of ‘ <i>Tissue</i> ’ are explored: firstly, the various pieces of paper that control our lives (holy books, maps, grocery receipts); secondly, the tissue of a human body. -The poet explores the paradox that although paper is fragile, temporary and ultimately not important, we allow it to control our lives. -Also, although human life is much more precious, it is also fragile and temporary.	
Quotes: - “decay of that colossal wreck” -“Lifeless” -‘sneer of cold command’: the king was arrogant, this has been recognised by the sculptor, the traveller and then the narrator. -‘ Look on my works, ye Mighty, and despair. ’	Form and Structure -A sonnet (14 lines) but with an unconventional structure... the structure is normal until a turning point (a volta) at Line 9 (“ these words appear ”). This reflects how human structures can be destroyed or decay. - Final two lines: the huge and immortal desert is described to emphasise the insignificance of human power and pride.	Quotes: -‘ she liked whate’er / She looked on, and her looks went everywhere. ’ -‘ I gave commands; Then all smiles stopped together ’: euphemism for his wife’s murder. -‘ Notice Neptune, though / Taming a sea-horse ’: he points out another painting, also about control.	Form and Structure -Dramatic Monologue, in iambic pentameter. -Enjambment: rambling tone, he’s getting carried away with his anger. He is a little unstable. -Heavy use of caesura (commas and dashes): stuttering effect shows his frustration and anger: ‘She thanked men, – good! but thanked / Somehow – I know not how’	Quotes: -Semantic field of light: (‘Paper that lets light shine through’, ‘The sun shines through their borderlines’, ‘let the daylight break through capitals and monoliths’) -‘ never meant to last ’ -‘ Fine slips [...] might fly our lives like paper kites ’: this simile suggests that we allow ourselves to be controlled by paper.	Form and Structure -The short stanzas create many layers, which is a key theme of the poem (layers of paper and the creation of human life through layers) -The lack of rhythm or rhyme creates an effect of freedom and openness. -Enjambment between lines and stanzas creates an effect of freedom and flowing movement.

<p>Extract from The Prelude: Stealing the Boat by William Wordsworth</p> <p>Content, Meaning and Purpose</p> <p>-The story of a boy's love of nature and a night-time adventure in a rowing boat that instils a deeper and fearful respect for the power of nature.</p> <p>-At first, the boy is calm and confident, but the sight of a huge mountain that comes into view scares the boy and he flees back to the shore.</p> <p>-He is now in awe of the mountain and now fearful of the power of nature which are described as 'huge and mighty forms, that do not live like living men.'</p> <p>-We should respect nature and not take it for granted.</p>		<p>Storm on the Island by Seamus Heaney</p> <p>Content, Meaning and Purpose</p> <p>-The narrator describes how a rural island community prepared for a coming storm, and how they were confident in their preparations.</p> <p>-When the storm hits, they are shocked by its power: its violent sights and sounds are described, using the metaphor of war.</p> <p>-The final line of the poem reveals their fear of nature's power</p> <p>- Seamus Heaney was Northern Irish, he died in 2013.</p> <p>-This poem was published in 1966 at the start of 'The Troubles' in Northern Ireland: a period of deep unrest and violence between those who wanted to remain part of the UK and those who wanted to become part of Ireland.</p> <p>-The first eight letters of the title spell 'Stormont': this is the name of Northern Ireland's parliament. The poem might be a metaphor for the political storm that was building in the country at the time.</p>		<p>London by William Blake</p> <p>Content, Meaning and Purpose</p> <p>-The narrator is describing a walk around London and how he is saddened by the sights and sounds of poverty.</p> <p>-The poem also addresses the loss of innocence and the determinism of inequality: how new-born infants are born into poverty.</p> <p>-The poem also suggests that the people in power (landowners, Church, Government) are to blame for this inequality.</p> <p>- The poem was published in 1794, and time of great poverty is many parts of London.</p>	
<p>Quotes:</p> <p>-'an act of stealth / And troubled pleasure': confident, but the oxymoron suggests he knows it's wrong; forebodes the troubling events that follow.</p> <p>-'towered up between me and the stars'</p> <p>-'the horizon's bound, a huge peak, black and huge':</p> <p>-'Upreared its head' and 'measured motion like a living thing': the mountain is personified as a powerful beast, but calm – contrasts with his own inferior panic.</p> <p>-'There hung a darkness': lasting effects of mountain.</p>	<p>Form and Structure</p> <p>-First person narrative – creates a sense that it is a personal poem.</p> <p>-The regular rhythm and enjambment add to the effect of natural speech and a personal voice.</p> <p>-Contrasts in tone: 'lustily I dipped my oars into the silent lake' versus 'I struck and struck again' and 'with trembling oars I turned'.</p>	<p>Quotes:</p> <p>-'It's a huge nothing that we fear'</p> <p>-Semantic field of war: 'Exploding comfortably' (also an oxymoron to contrast fear/safety); 'wind dives and strafes invisibly' (the wind is a fighter plane); 'We are bombarded by the empty air' (under ceaseless attack).</p> <p>-This also reinforces the metaphor of war / troubles.</p> <p>-'spits like a tame cat turned savage': simile compares the nature to an animal that has turned on its owner.</p>	<p>Form and Structure</p> <p>-Written in blank verse and with lots of enjambment: this creates a conversational and anecdotal tone.</p> <p>-'We' (first person plural) creates a sense of community, and 'You' (direct address) makes the reader feel immersed in the experience.</p> <p>-There is a turning point (a volta) in Line 14: 'But no:'. This monosyllabic phrase, and the caesura, reflects the final calm before the storm.</p>	<p>Language</p> <p>-'Marks of weakness, marks of woe'</p> <p>-'mind-forged manacles': they are trapped in poverty.</p> <p>- Repetition 'In every..'</p> <p>-Criticises the powerful: 'Every black'ning church appals' - the church is corrupt; 'the hapless soldier's sigh / Runs in blood down palace walls' – soldier's suffer and die due to the decisions of those in power, who themselves live in palaces.</p>	<p>Form and Structure</p> <p>-A dramatic monologue, there is a first-person narrator ('I) who speaks passionately about what he sees.</p> <p>-Simple ABAB rhyme scheme: reflects the unrelenting misery of the city, and perhaps the rhythm of his feet as he trudges around the city.</p> <p>-First two stanzas focus on people; third stanza focuses on the institutions he holds responsible; fourth stanza returns to the people – they are the central focus.</p>
<p>Language for comparison</p>		<p>LANGUAGE</p>		<p>STRUCTURE</p>	
<p>When poems have similarities:</p> <p>Similarly, ...</p> <p>Both poems convey / address...</p> <p>Both poets explore / present...</p> <p>This idea is also explored in...</p> <p>In a similar way, ...</p> <p>Likewise, ...</p> <p>When poems have differences:</p> <p>Although...</p> <p>Whereas...</p> <p>Whilst...</p> <p>In contrast, ...</p> <p>Conversely, ...</p> <p>On the other hand, ...</p> <p>On the contrary, ...</p> <p>Unlike...</p>		<p>Metaphor – comparing one thing to another</p> <p>Simile – comparing two things with 'like' or 'as'</p> <p>Personification – giving human qualities to the non-human</p> <p>Imagery – language that makes us imagine a sight (visual), sound (aural), touch (tactile), smell or taste.</p> <p>Tone – the mood or feeling created in a poem.</p> <p>Pathetic Fallacy – giving emotion to weather in order to create a mood within a text.</p> <p>Irony – language that says one thing but implies the opposite <i>eg. sarcasm</i>.</p> <p>Colloquial Language – informal language, usually creates a conversational tone or authentic voice.</p> <p>Onomatopoeia – language that sounds like its meaning.</p> <p>Alliteration – words that are close together start with the same letter or sound.</p> <p>Sibilance – the repetition of s or sh sounds.</p> <p>Assonance – the repetition of similar vowel sounds</p> <p>Consonance – repetition of consonant sounds.</p> <p>Plosives – short burst of sound: t, k, p, d, g, or b sound.</p>		<p>Stanza – a group of lines in a poem.</p> <p>Repetition – repeated words or phrases</p> <p>Enjambment – a sentence or phrase that runs onto the next line.</p> <p>Caesura – using punctuation to create pauses or stops.</p> <p>Contrast – opposite concepts/feelings in a poem.</p> <p>Juxtaposition – contrasting things placed side by side.</p> <p>Oxymoron – a phrase that contradicts itself.</p> <p>Anaphora – when the first word of a stanza is the same across different stanzas.</p> <p>Epistrophe – when the final word of a stanza is the same across different stanzas.</p> <p>Volta – a turning point in a poem.</p> <p style="text-align: center;">FORM</p> <p>Speaker – the narrator, or person in the poem.</p> <p>Free verse – poetry that doesn't rhyme.</p> <p>Blank verse – poem in iambic pentameter, but with no rhyme.</p> <p>Sonnet – poem of 14 lines with clear rhyme scheme.</p> <p>Rhyming couplet – a pair of rhyming lines next to each other.</p> <p>Meter – arrangement of stressed/unstressed syllables.</p> <p>Monologue – one person speaking for a long time.</p>	

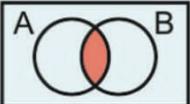
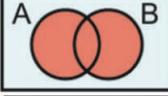
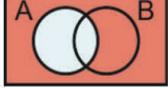
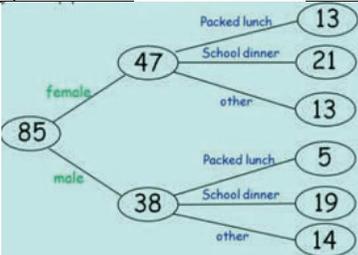
 Year 11 Mathematics - Foundation Unit 1 Proportion			
RATIO			
1.	Simplifying Ratio	Divide each part of the ratio by a common factor	eg 12:18 simplifies to 2:3
2.	Simplest Form	Divide each part of the ratio by the highest common factor, so it cannot reduce further All parts must be integers	
3.	Divide in a given ratio	Divide an amount so the ratio of the final values simplifies to the given ratio.	eg Divide £350 in the ratio 3:4 between Amy and Bob. 3+4 = 7 (There are 7 parts.) 350 ÷ 7 = 50 (Each part is worth 50) 3 x 50 = £150 for Amy 4 x 50 = £200 for Bob
Proportion			
4.	Directly Proportional graph	The graph of two quantities in direct proportion will go through the origin and have a positive gradient	
5.	Direct proportion	- the graph is a straight line - that goes through the origin - if one variable is multiplied by n, so is the other	 <p>A is in direct B and C are not</p>
6.	Constant of proportionality	Represented by a k	Its values stay the same
7.	Direct proportion	Two quantities increase at the same rate	"y is proportional to x" $y \propto x$ $y = kx$
8.	Indirect Proportion	One variable increases at a constant rate as the second variable decreases	"y is inversely proportional to x" $y \propto \frac{1}{x}$ $y = \frac{k}{x}$

 Year 11 Mathematics - Foundation Unit 2 Circles, Cylinders, Cones and Spheres			
CIRCLES			
1.	Radius Diameter	The distance from the centre to the circumference of a circle A line that passes through the centre of a circle	
2.	Circumference	Distance around the outside of a circle. (The perimeter)	
3.	Circumference of a Circle	$C = \pi d$	
4.	Area of a circle	$A = \pi r^2$	
3D SOLIDS			
5.	Prism	A 3D shape that has a constant cross-section through its length.	
6.	Cuboid	$Volume = Area\ Cross\ Section \times Length$	
		$Volume = area\ of\ cross\ section \times length$	
7.	Triangular Prism	$Volume = area\ of\ cross\ section \times length$	
		$Volume = \frac{1}{2} \times base \times height \times length$	
8.	Cylinder	$Volume = area\ of\ cross\ section \times length$	
		$Volume = \pi r^2 \times h$	
9.	Volume of a Pyramid	A 3D shape with a polygon as a base and triangular sides that meet at the top	
		$Volume = \frac{1}{3} \times area\ of\ base \times height$	

10.	Cone	$Volume = \frac{1}{3}\pi r^2 h$	
		$Curved Surface Area = \pi r l$	
		$Total Surface Area = \pi r^2 + \pi r l$	
11.	Sphere	$Volume = \frac{4}{3}\pi r^3$	
		$Surface Area = 4\pi r^2$	

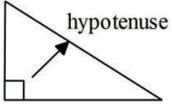
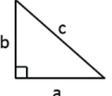
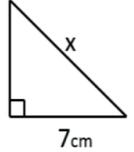
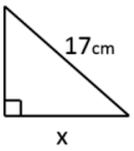
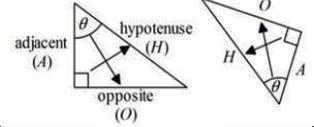
7.	Solving Quadratics by factorising	Writing the equation as the product of two linear expressions to find the solution	e.g. Solve $x^2 + 7x + 12 = 0$ $(x + 3)(x + 4) = 0$ So $x + 3 = 0$ or $x + 4 = 0$ $x = -3, x = -4$
SIMULTANEOUS EQUATIONS			
8.	Elimination	Add or subtract one equation from the other to eliminate a variable <ul style="list-style-type: none"> ✓ Same ✓ Add/Subtract ✓ Substitute 	

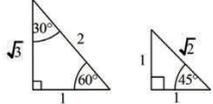
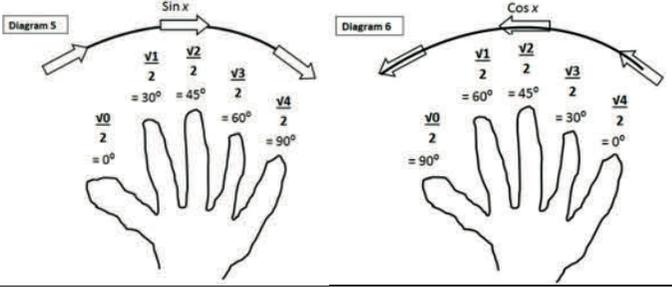
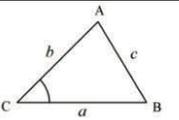
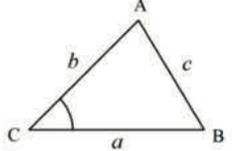
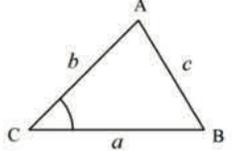
 Year 11 Mathematics - Foundation Unit 3 Quadratic and Simultaneous Equations																											
EXPANDING DOUBLE BRACKETS																											
1.	Multiply every term in the first bracket by every term in the second bracket																										
2.	FOIL e.g. $(x + 3)(x + 4)$ <table border="1" style="margin-left: 20px;"> <tr><td>FIRST</td><td>x^2</td></tr> <tr><td>OUTER</td><td>$+4x$</td></tr> <tr><td>INNER</td><td>$+3x$</td></tr> <tr><td>LAST</td><td>$+12$</td></tr> </table> $x^2 + 4x + 3x + 12$ $= x^2 + 7x + 12$	FIRST	x^2	OUTER	$+4x$	INNER	$+3x$	LAST	$+12$	FOIL e.g. $(x + 3)(x + 4)$ <table border="1" style="margin-left: 20px;"> <tr><td>FIRST</td><td>x^2</td></tr> <tr><td>OUTER</td><td>$+4x$</td></tr> <tr><td>INNER</td><td>$+3x$</td></tr> <tr><td>LAST</td><td>$+12$</td></tr> </table> $x^2 + 4x + 3x + 12$ $= x^2 + 7x + 12$	FIRST	x^2	OUTER	$+4x$	INNER	$+3x$	LAST	$+12$	FOIL e.g. $(x + 3)(x + 4)$ <table border="1" style="margin-left: 20px;"> <tr><td>FIRST</td><td>x^2</td></tr> <tr><td>OUTER</td><td>$+4x$</td></tr> <tr><td>INNER</td><td>$+3x$</td></tr> <tr><td>LAST</td><td>$+12$</td></tr> </table> $x^2 + 4x + 3x + 12$ $= x^2 + 7x + 12$	FIRST	x^2	OUTER	$+4x$	INNER	$+3x$	LAST	$+12$
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FACTORISING AND SOLVING QUADRATIC EQUATIONS																											
3.	QUADRATIC EQUATION	An equation with 2 as the highest power of the unknown	e.g. $3x^2 - 5 = 43$, $x^2 - 3x + 2 = 0$																								
4.	Factorising a quadratic	<p style="text-align: center;">Multiply to 5 ↓</p> Factorise $x^2 + 5x + 6$ – Add to 6 2 and 3 add to 5 2 and 3 multiply to 6 $(x + 2)(x + 3)$ Check: $(x + 2)(x + 3) = x^2 + 5x + 6$																									
5.	Difference of two squares	This is a quadratic equation with two squared terms, where one term is subtracted from the other eg $x^2 - 81 = (x + 9)(x - 9)$																									

 Year 11 Mathematics - Foundation Unit 4 Venn and Tree Diagrams			
1.	{ }	Curly brackets show a set of values	$5 \in \{\text{odd numbers}\}$ means "5 is in the set of odd numbers"
2.	∈	Means "is an element of"	
3.	Element	A "member" of a set	
4.	ξ	Means the universal set	All the elements that are being considered
5.	$A \cap B$	A intersect B	All the elements in A AND B 
6.	$A \cup B$	A union B	All the elements in A OR B OR both 
7.	A'	Complement of A	All the elements NOT in A 
8.	Frequency Tree	Shows the number of different options for different choice	

9.	Probability Tree	Shows all possible outcomes of an event	
10.	AND Rule	Multiply the probabilities	$P(A \text{ and } B) = P(A) \times P(B)$
11.	OR Rule	Add the probabilities	$P(A \text{ or } B) = P(A) + P(B)$

			Year 11 Mathematics - Foundation Unit 5 Growth and Decay
PERCENTAGES			
1.	The original amount is always 100%	If you increase, the new amount will be more than 100% If you decrease the new amount will be less than 100%	
2.	Express one number as a percentage of another	$\frac{\text{Number 1}}{\text{Number 2}} \times 100$	
3.	Percentage change	$\frac{\text{Change}}{\text{Original}} \times 100$	
4.	To find a multiplier for an increase	$\frac{100 + \% \text{ increase}}{100}$	
5.	To find a multiplier for a decrease	$\frac{100 - \% \text{ decrease}}{100}$	

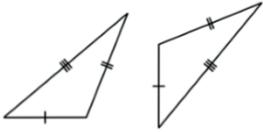
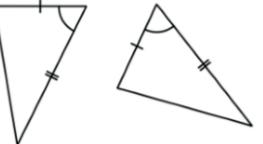
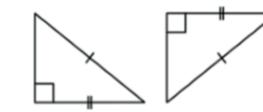
Year 11 Mathematics Higher Unit 1 Advanced Trigonometry	
PYTHAGORAS' THEOREM	
1. Hypotenuse	The longest side of a right angled triangle. It is opposite the right angle. 
2. Right-angled triangle	A triangle that contains a right-angle.
3. Pythagoras' Theorem	$a^2 + b^2 = c^2$ 
4. To find the hypotenuse	 $x^2 = 4^2 + 7^2$ $x^2 = 16 + 49$ $x^2 = 65$ $x = \sqrt{65} = 8.06 \text{ cm}$
5. To find a short side	 $17^2 = x^2 + 5^2$ $289 = x^2 + 25$ $289 - 25 = x^2$ $x^2 = 264$ $x = \sqrt{264} = 16.25 \text{ cm}$
TRIGONOMETRY – SOHCAHTOA – RIGHT ANGLED	
6. Trigonometry	The ratios between the sides and angles of triangles
7. Labelling the triangle	H = hypotenuse O = Opposite A = Adjacent θ is the angle involved 
8. Sine	$\sin \theta = \frac{O}{H}$ 
9. Cosine	$\cos \theta = \frac{A}{H}$ 

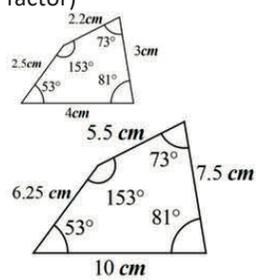
10. Tangent	$\tan \theta = \frac{O}{A}$ 																								
11. Exact Trig Values	<table border="1" data-bbox="1444 223 1960 438"> <thead> <tr> <th>θ</th> <th>0°</th> <th>30°</th> <th>45°</th> <th>60°</th> <th>90°</th> </tr> </thead> <tbody> <tr> <td>Sin θ</td> <td>0</td> <td>$\frac{1}{2}$</td> <td>$\frac{\sqrt{2}}{2}$</td> <td>$\frac{\sqrt{3}}{2}$</td> <td>1</td> </tr> <tr> <td>Cos θ</td> <td>1</td> <td>$\frac{\sqrt{3}}{2}$</td> <td>$\frac{\sqrt{2}}{2}$</td> <td>$\frac{1}{2}$</td> <td>0</td> </tr> <tr> <td>Tan θ</td> <td>0</td> <td>$\frac{\sqrt{3}}{3}$</td> <td>1</td> <td>$\sqrt{3}$</td> <td></td> </tr> </tbody> </table> <p>These can be found using these triangles: </p> <p>Or remembered using the hand trick: </p>	θ	0°	30°	45°	60°	90°	Sin θ	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	Cos θ	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	Tan θ	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	
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Tan θ	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$																					
TRIGONOMETRY – NON RIGHT ANGLED																									
12. Area of a triangle	$\text{Area} = \frac{1}{2} ab \sin C$ You can use this formula if you know two sides and the angle between them. 																								
13. Sine Rule – calculating a side	$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ You use this rule if you know one angle and the opposite side, and one angle and you want to work out the length of its opposite side 																								
14. Sine Rule – calculating an angle	$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$ You use this rule if you know one angle and the opposite side, and one side and you want to work out the size of its opposite angle 																								

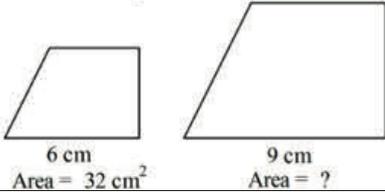
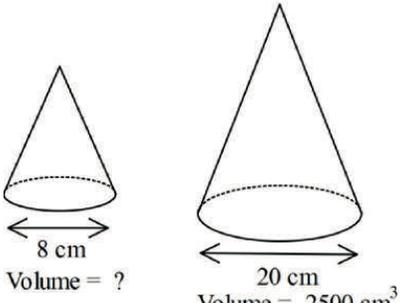
15.	Cosine Rule – calculating a side	$a^2 = b^2 + c^2 - 2bc\cos A$ You use this rule if you know two sides and the included angle and want to work out the missing side	
16.	Cosine rule – calculating an angle	$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$ You use this rule if you know all three sides and want to work out an angle	

Year 11 Mathematics Higher Unit 2 Vectors, Transformations and Congruence			
DEFINITIONS			
1.	Transformation	Altering a 2D shape in some way. There are four types: Reflection Rotation Translation Enlargement	
2.	Scale factor	The proportions by which the dimensions of an object will increase/decrease by	
3.	Line of reflection	a “mirror line” which is used to perform reflections	
4.	Centre of rotation	the fixed point used to rotate an object around	
5.	Centre of enlargement	a fixed point to enlarge an object from.	
6.	Column Vector	Used to represent transformations x is the horizontal movement y is the vertical movement	$\begin{pmatrix} x \\ y \end{pmatrix}$
7.	Invariant Point	A co-ordinate is invariant if it does not change position after a transformation.	
TRANSFORMATIONS			
8.	Rotation	A “turning” movement of an image about a fixed point To describe, you need to write:	a) “Rotation” b) Angle of rotation c) Centre of rotation d) Direction of rotation
9.	Reflection	A “flipping” movement across a mirror line To describe, you need to write:	a) “Reflection” b) The equation of the line of reflection
10.	Translation	A “sliding” movement of an image To describe, you need to write:	a) “Translation” b) The column vector
	Enlargement	A change in the size of an object (bigger or smaller)	

11.		To describe, you need to write:	a) “Enlargement” b) The scale Factor c) The centre of enlargement
12.	Fractional Scale Factor	If a scale factor is smaller than 1, then the image will be smaller	
13.	Negative Scale Factor	If a scale factor is negative then the image will be on the opposite side of the centre of enlargement	
VECTORS			
14.	Magnitude	Size	
15.	Scalar	A quantity that has a magnitude	
16.	Vector	A quantity that has a magnitude and a direction	
17.	Column Vector	x is the horizontal movement y is the vertical movement	$\begin{pmatrix} x \\ y \end{pmatrix}$
18.	Written Vectors	Vectors can be written in bold a or with underlining \underline{a}	
19.	Vector between two points	A vector between any two given points, say point L and M, can be written as \overrightarrow{LM}	
20.	Vector Diagrams	Vectors can be represented on grids: $a = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$ $b = \begin{pmatrix} 1 \\ 5 \end{pmatrix}$ $c = \begin{pmatrix} 2 \\ -3 \end{pmatrix}$ $d = \begin{pmatrix} -2 \\ 4 \end{pmatrix}$	
21.	Adding Vectors	$\begin{pmatrix} 3 \\ 4 \end{pmatrix} + \begin{pmatrix} 1 \\ 5 \end{pmatrix} = \begin{pmatrix} 4 \\ 9 \end{pmatrix}$	
22.	Subtracting Vectors	$\begin{pmatrix} 3 \\ 4 \end{pmatrix} - \begin{pmatrix} 1 \\ -2 \end{pmatrix} = \begin{pmatrix} 2 \\ 6 \end{pmatrix}$	
23.	Multiply vectors by a scalar quantity	$3 \times \begin{pmatrix} 2 \\ 5 \end{pmatrix} = \begin{pmatrix} 6 \\ 15 \end{pmatrix}$	
24.	Combining Vectors	To travel from Point A to Point B $\overrightarrow{AB} = b - a$	
25.	Parallel Vectors	\overrightarrow{AB} is parallel to \overrightarrow{CD} if $\overrightarrow{AB} = k \times \overrightarrow{CD}$ for some integer k	
26.	Collinear Vectors	$A, B,$ and C lie on the same line if $\overrightarrow{AB} = k \times \overrightarrow{BC}$ for some integer k	

CONGRUENCE AND SIMILARITY			
27.	Congruent	Exactly the same shape and size	
28.	Similar	Same shape but different sizes	
CONGRUENT TRIANGLES			
29.	SSS	Two triangles are congruent if all 3 sides are equal	
30.	SAS	Two triangles are congruent if two sides and the included angle are equal	
31.	ASA	Two triangles are congruent if two angles and the corresponding side are equal	
32.	RHS	Two triangles are congruent if right angle, hypotenuse and one other side are equal	
SIMILARITY			
33.	Similar Shapes	Two shapes where one shape is an enlargement of the other. Corresponding angles are equal and corresponding sides are all in the same ratio (scale factor)	<p>Small base = 4cm Large base = 10cm</p> <p>Ratio of these corresponding sides is 10 : 4 = 2.5 : 1 Scale factor = 2.5</p> <p>Or</p> $\frac{\text{length from large shape}}{\text{length from small shape}} = \frac{10}{4} = 2.5$



34.	Linear Scale Factor (LSF)	The scale factor or ratio of sides of two similar shapes. If the LSF is k lengths are multiplied or divided by k	$LSF = \frac{\text{length from large shape}}{\text{length from small shape}}$
35.	Area Scale Factor (ASF)	The scale factor or ratio of areas or surface areas of two similar shapes If the LSF is k the areas are multiplied/divided by k^2	$ASF = \frac{\text{area from large shape}}{\text{area from small shape}}$
36.	Volume scale factor (VSF)	The scale factor or ratio of volumes of two similar shapes. If the LSF is k the areas are multiplied/divided by k^3	$VSF = \frac{\text{volume from large shape}}{\text{volume from small shape}}$
37.	<p>Area of similar shapes</p> 		$LSF = \frac{9}{6} = 1.5$ $ASF = 1.5^2 = 2.25$ Area of large shape = 2.25×32 = 72 cm^2
38.	<p>Volume of similar shapes</p> 		$LSF = \frac{20}{8} = 2.5$ $VSF = 2.5^3 = 15.625$ Volume of small shape = $2500 \div 15.625$ = 160 cm^3

Year 11 Mathematics Higher
Unit 3 Histograms

1. **Histogram** A chart where the area of each bar represents the frequency

2. **Frequency Density** The height of each bar in a histogram

$$\text{Frequency Density} = \frac{\text{Frequency}}{\text{Class width}}$$

3. **Histogram**

$$\text{Frequency Density} = \frac{\text{Frequency}}{\text{Class width}}$$

Height (h cm)	Frequency	Class Width	Frequency density
$0 \leq h < 10$	4	10	$4 \div 10 = 0.4$
$10 \leq h < 15$	6	5	$6 \div 5 = 1.2$
$15 \leq h < 20$	15	5	$15 \div 5 = 3$
$20 \leq h < 30$	52	10	$52 \div 10 = 5.2$
$30 \leq h < 50$	68	20	$68 \div 20 = 3.4$
$50 \leq h < 60$	24	10	$24 \div 10 = 2.4$
$60 \leq h < 80$	16	20	$16 \div 20 = 0.8$

4. **Cumulative Frequency Diagram**

Weight (w grams)	Frequency	Cumulative Frequency
$100 \leq w < 110$	9	9
$110 \leq w < 120$	16	25
$120 \leq w < 130$	19	44
$130 \leq w < 140$	27	71
$140 \leq w < 150$	9	80

Median = 128 Lower Quartile = 117
Upper Quartile = 135 IQR = $135 - 117 = 18$

5. **Box Plot**

6. **Interquartile range (IQR)**

IQR = Upper quartile – lower quartil

Year 11 Mathematics Higher
Unit 4 Circle Theorems

1. **Cyclic Quadrilateral** A quadrilateral with all four vertices on the circumference of a circle

2. A **chord** is a line that cuts across a circle

3. The perpendicular from the centre of a circle to a chord **bisects** the chord.

4. The line drawn from the centre of a circle to the **midpoint** of a chord is at right angles to the chord

5. The triangle formed by two radii and a chord is **isosceles**

CIRCLE THEOREMS

6. **Angles at the centre** The angles at the centre is twice the angle at the circumference

7. **Angle in a semicircle** Angles in a semicircle are 90°

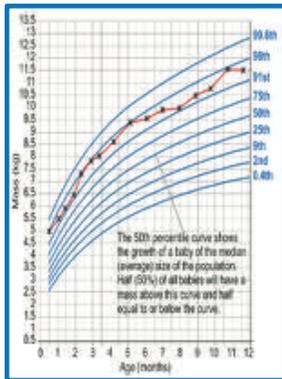
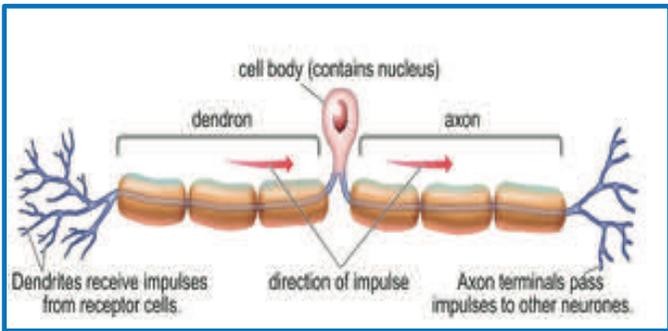
8. **Angles in the same segment** Angles at the circumference in the same segment are equal

9. **Cyclic quadrilaterals** Opposite angles of a cyclic quadrilateral add to 180°
 $A + C = 180^\circ$
 $B + D = 180^\circ$

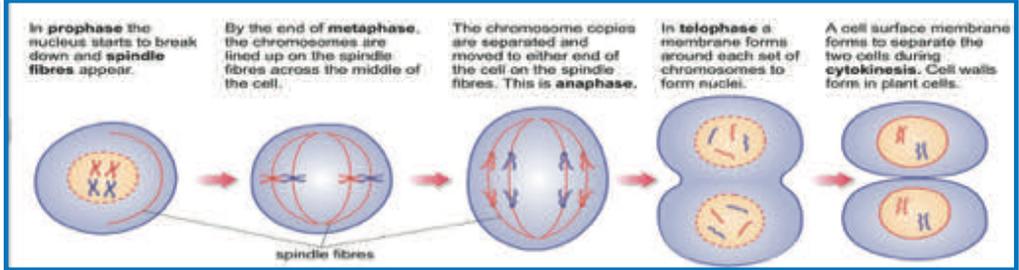
10. **Tangents to a circle** The angle between a tangent and radius is 90°
Two tangents from the same point to a circle are equal lengths

11. **Alternate segment** Alternate Segment Theorem

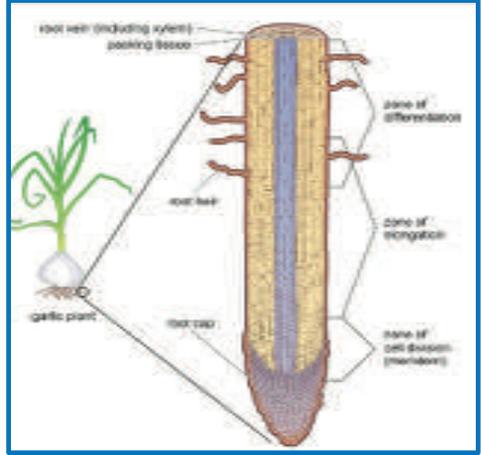
Asexual Reproduction	Producing new organisms from one parent only. These organisms are genetically identical to the parent.
Cancer	Disease caused by the uncontrolled division of stem cells in a part of the body
Cell Cycle	A sequence of growth and division that happens in cells. It includes interphase and mitosis
Differentiation	When a group of similar things, such as cells, become different in form from each other.
Diploid	A cell with two sets of chromosomes
Haploid	A cell with one set of chromosomes.
Meristem	A small area of undifferentiated cells in a plant, such as near the shoot tips and root tips, where cells are dividing rapidly by mitosis.
Mitosis	The process of cells dividing to produce two daughter cells that are genetically identical to the parent.
Neurone	A cell that transmits electrical impulses in the nervous system.
Reflex	Response to a stimulus that does not require processing by the brain. The response is automatic
Stem Cell	Unspecialised cell that continues to divide by mitosis to produce more stem cells and other cells that differentiate into specialised cells.
Synapse	Point at which two neurones meet. There is a tiny gap between neurones at a synapse, which cannot transmit an electrical impulse.



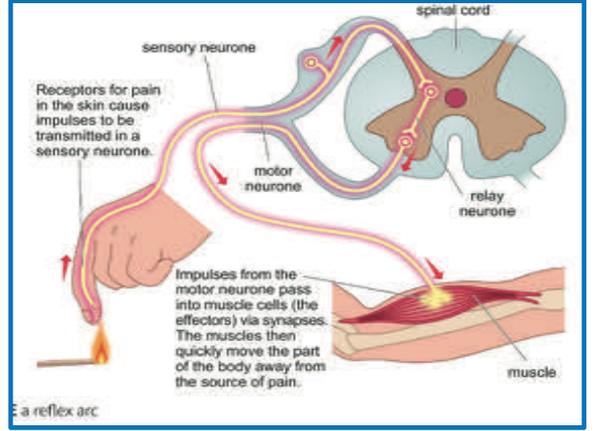
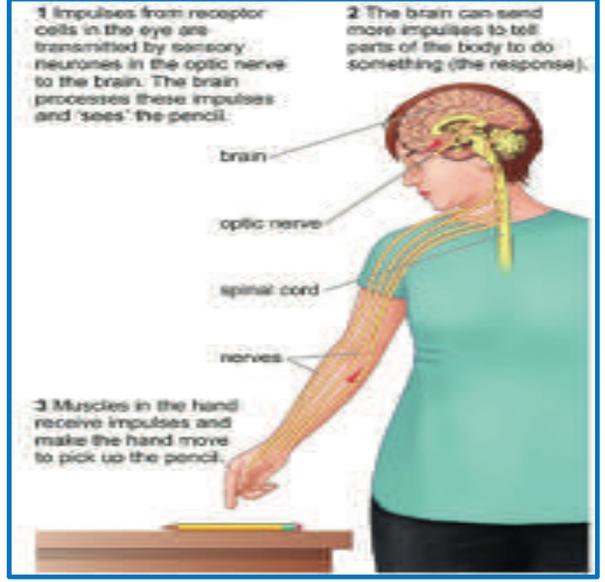
CB2



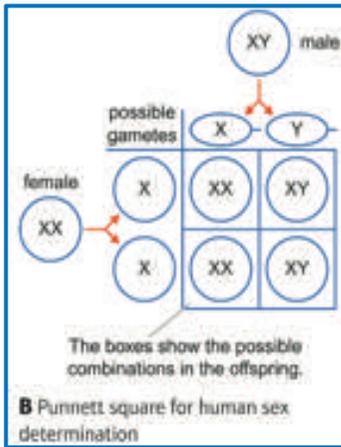
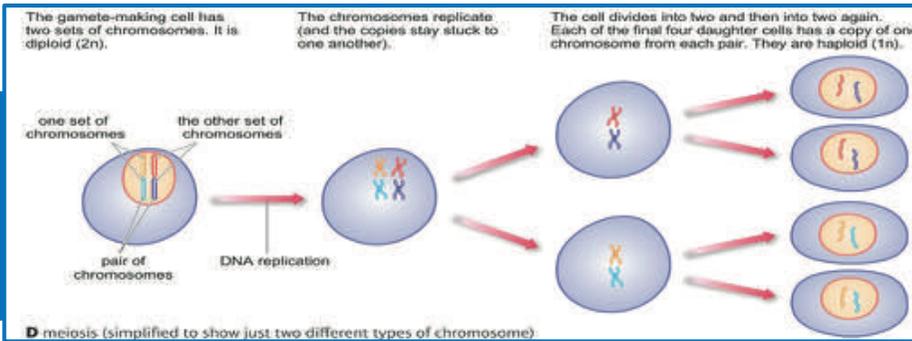
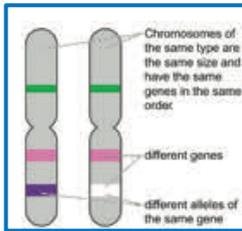
Types of Neurone:
 Sensory- takes impulse from sense organ to spinal cord/brain
 Relay- shortest neurone, transfers impulse between other neurones
 Motor- takes impulse to effectors



Embryonic Stem Cell: found in embryos, can differentiate into all types of cell
 Adult Stem Cell: can only differentiate into a few types of cells from the tissue it is found in



CB3

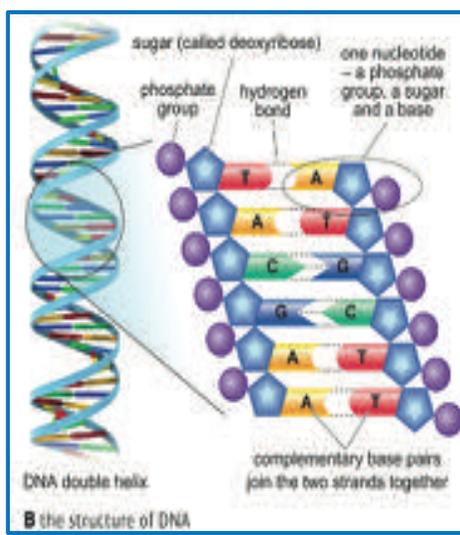


Punnett Squares are used to calculate probabilities of offspring inheriting different combinations of alleles and the phenotypes that arise.

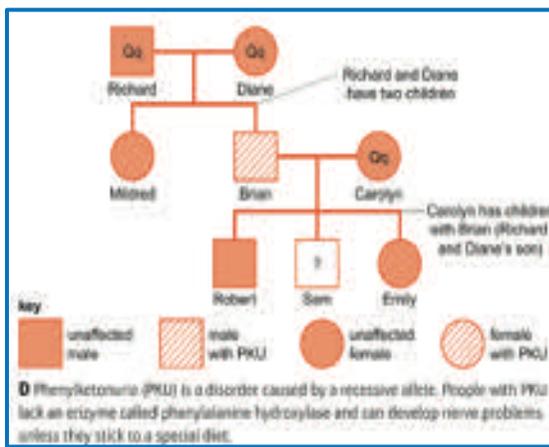
Remember:

Dominant = Capital

Recessive = lower case



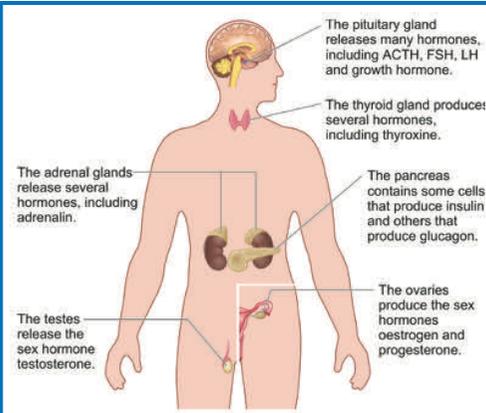
- DNA Extraction Practical:**
- 1: Mash up fruit/vegetable to start to break open cell walls
 - 2: Mix with an extraction buffer (solution of salt, water and washing up liquid) to help to further break down the cell walls
 - 3: Leave in water bath for 15 minutes
 - 4: Filter mixture to remove insoluble material
 - 5: Add a small amount of solution to a boiling tube and gently pour in ice-cold ethanol to precipitate the DNA



Allele	Different versions of the same gene
Chromosome	A structure found in the nuclei of cells. Each chromosome contains one enormously long DNA molecule packed up with proteins
Continuous Variation	Continuous data can take any value between two limits. Examples include length, mass, time
Discontinuous Variation	Data values that can only have one of a set number of options are discontinuous. Examples include shoe sizes and blood groups
Dominant	Allele that will always affect the phenotype
Environmental Variation	Differences between organisms caused by environmental factors,
Gene	Section of the long strand of DNA found in a chromosome, which often contains instructions for a protein
Genetic Variation	Differences between organisms caused by differences in the alleles they inherit from their parents, or differences in genes caused by mutation.
Genome	All the DNA in an organism. Each body cell contains a copy of the genome
Genotype	The alleles for a certain characteristic that are found in an organism. Written in a shorthand using letters to represent the alleles (with the dominant allele having a capital and being written first).
Heterozygous	When both the alleles for a gene are different in an organism
Homozygous	When both the alleles for a gene are the same in an organism
Human Genome project	The project that mapped the base pairs in one human genome
Meiosis	A form of cell division in which one parent cell produces four haploid daughter cells
Mutation	A change in the DNA base sequence
Phenotype	The characteristics that a certain set of alleles produce.
Recessive	Allele that will only affect the phenotype if the other allele is also recessive. It has no effect if the other allele is dominant
Variation	Differences in the characteristics of organisms

CB7

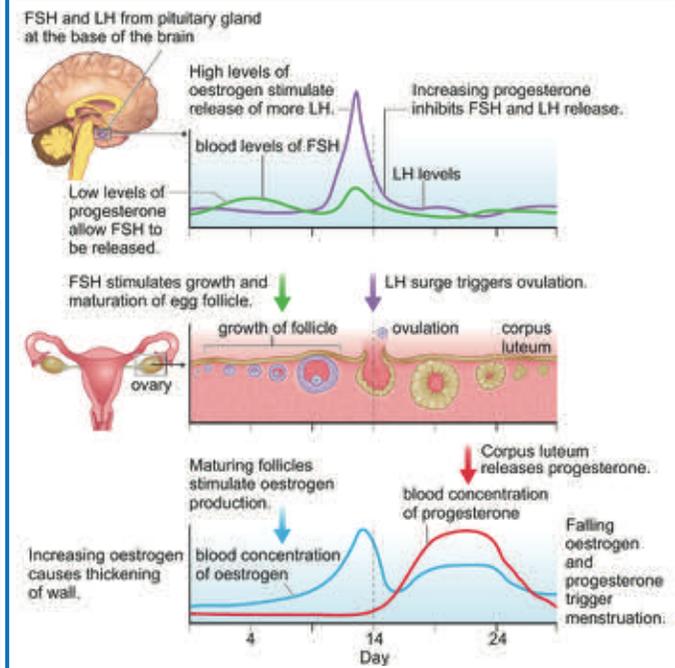
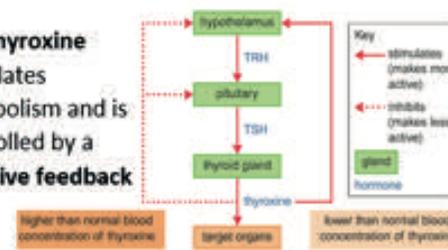
The hormonal system uses **hormones** (chemical messengers) released by **endocrine glands** and transported in the blood to signal to **target organs**.



B The hormonal system consists of endocrine glands that produce and release hormones.

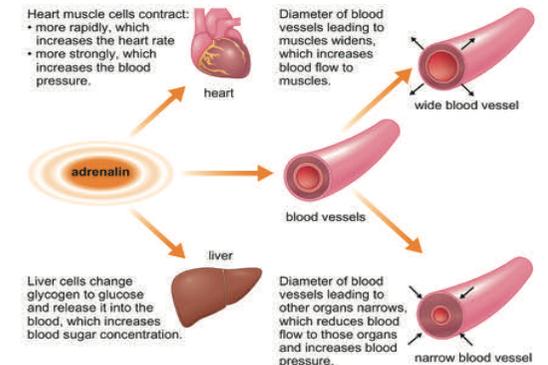
HT: Metabolic rate is the rate that energy stored in food can be transferred by all the reactions that take place in your body to keep you alive.

HT: Thyroxine stimulates metabolism and is controlled by a **negative feedback**



The **menstrual cycle** prepares the woman's body for fertilisation of an egg cell. It is controlled by the hormones **oestrogen** (which repairs and thickens the uterus lining) and **progesterone** (which maintains the uterus lining) ready for implantation of a fertilised egg.

HT: Adrenaline released by the adrenal gland prepares the body for 'fight or flight'



Homeostasis - Maintaining a constant internal environment, important to prevent damage to the body.

Blood glucose regulation is controlled by the hormone **insulin** which is released by the **pancreas**. Insulin causes cells in the liver and other organs to take in glucose when glucose levels are high (after you have just eaten) and store it for when your glucose levels are low.

Type 1 diabetes – The body's own immune system attacks pancreatic cells so they do not produce enough insulin. Treated by insulin injections.

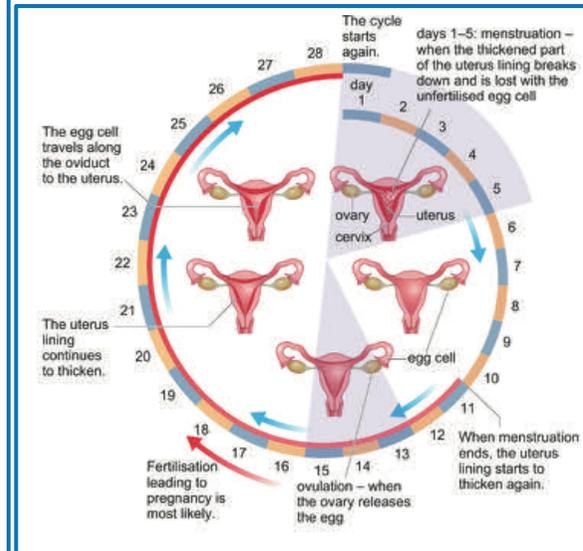
Type 2 diabetes – Pancreatic cells do not produce enough insulin or target organs do not respond efficiently. Treated by eating healthy and reducing

HT: Glucose is stored as glycogen in liver cells. When glucose levels are low, glucagon is released from the pancreas to convert it back to glucose.

Method and success rate (% of pregnancies prevented)	How it prevents fertilisation
male condom (98% success rate)	placed over erect penis, prevents sperm entering the vagina
diaphragm or cap (92–96% success rate)	placed over the cervix (entrance to the uterus), prevents sperm in the vagina entering the uterus
hormone pill or implant placed under the skin (>99% success rate)	release hormones to prevent ovulation and thickens mucus at the cervix, making it difficult for sperm cells to pass through

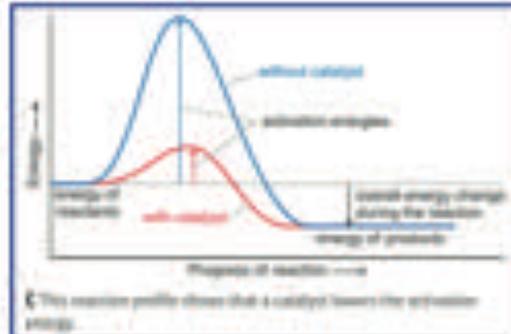
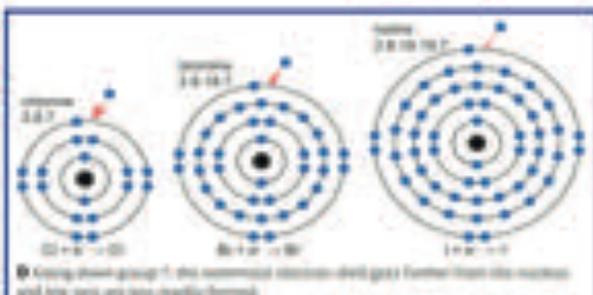
HT: They are many reasons why couples are unable to have a child. Techniques to aid conception:

- 1) Assisted reproductive technology (ART) – using hormones to increase chance of pregnancy
- 2) Clomifene therapy – increases concentration of FSH and LH in the blood to help release an egg
- 3) In-vitro fertilisation (IVF) – An egg cell is fertilised externally and embryo implanted back into the uterus.



CC13-15

Halogen	Appearance
chlorine	green gas
bromine	brown liquid
iodine	purple/black solid



Endothermic – Energy is transferred from the surroundings to stores of energy in chemical bonds (taken in).

Exothermic - Energy is transferred from the stores of energy in chemical to the surroundings (given out).

Group 1 (alkali metals)

- All have 1 electron in their outer shell
- Form 1^- ions, e.g. Li^+
- Reactivity increases as you go down the group
- Are soft
- Float on water
- Have relatively low melting points.

Metal + water \rightarrow metal hydroxide + hydrogen

Lithium + water \rightarrow lithium hydroxide + hydrogen

Group 7 (halogens)

- all have 7 electrons in their outer shell
- Form 1^- ions, e.g. F^-
- Reactivity decreases as you go down the group
- Are all diatomic (exist as pairs of atoms covalently bonded e.g. Cl_2)

Test for chlorine: Bleaches litmus paper

Group 1 + group 7 \rightarrow metal halide

Sodium + bromine \rightarrow sodium bromide



Displacement reactions: when a more reactive element displaces a less reactive element

Rates of reaction

Reactions occur when reacting particles collide at the correct with enough energy.

Factors Affecting rate of reaction:

Surface area: volume ratio: The larger the surface area: volume ratio and the higher the rate of reaction as there are more reacting particles available to collide = increased rate of reaction.

Temperature: The higher the temperature the more kinetic energy the reacting particles have, they move around faster leading to more frequent and more successful collisions = increased rate of reaction.

Concentration: The higher the concentration the more reacting particles per unit volume (more crowded), the higher the frequency of collisions = increased rate of reaction.

Pressure (gas reactions only): The higher the pressure the closer the reacting particles are which means they collide more frequently = increased rate of reaction.

A Catalyst: Speeds up the rate of reaction by providing an alternate route for reaction with a lower activation energy. A catalyst is not used up in the reaction. Catalysts are specific for particular reactions



The activation energy is the difference in energy between the reactants and the top of the 'hump'.

lithium + water	bubbles fiercely on the surface
sodium + water	melts into a ball and fizzes about the surface
potassium + water	bursts into flames and flies about the surface

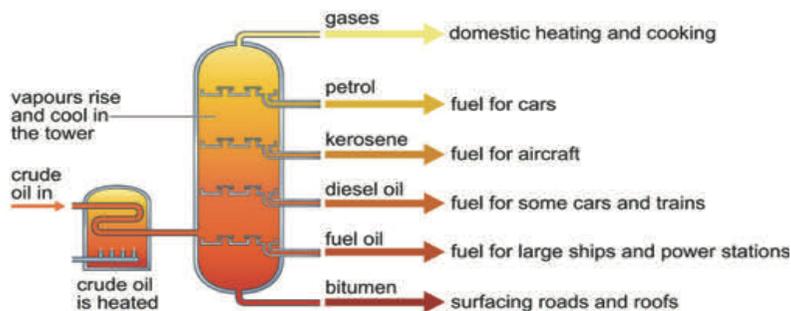
CC16-17

Hydrocarbons: contain hydrogen and carbon atoms only

Crude oil: Complex mixture of hydrocarbons in chains and rings, a source of useful substances, a finite resource, can be separated into its more useful fractions using **fractional distillation**.

Fractional Distillation:

- The column is hottest at the top, coolest at the bottom.
- The vapours rise through the column and cool down.
- The vapours **condense** when they reach a part of the column that is cool enough, the liquid falls into a tray and is piped away.
- The vapours with the lowest boiling points do not condense at all and leave at the top as a mixture of gases.



Fraction	Number of atoms in molecules	Boiling point	Ease of ignition	Viscosity
gases	smallest (1-4 carbon atoms) 	lowest (<0°C) 	easy to ignite 	lowest (flows most easily)
petrol				
kerosene				
diesel oil				
fuel oil				
bitumen				

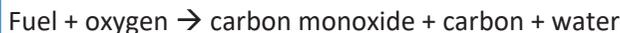
D trends in the properties of the fractions leaving an oil fractionating column

As you go down the fractionating column, the number of carbon atoms in the chain increase, the boiling point and viscosity increase and the ease of ignition decreases.

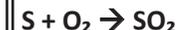
Complete combustion – sufficient amount of oxygen, produces carbon dioxide, water and energy.



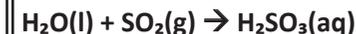
Incomplete combustion - insufficient amount of oxygen, sooty flame, produces less heat, carbon monoxide, carbon and water.



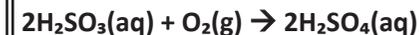
Sulfur dioxide: When hydrocarbon fuels are burnt they may contain impurities such as sulfur. This reacts with oxygen to form sulfur dioxide:



Sulfur dioxide dissolves in the water in clouds producing sulfurous acid:



The sulfurous acid is then oxidised to form sulfuric acid:



Oxides of nitrogen: High temperatures needed to cause oxygen and nitrogen to react to form nitrous oxide (NO₂).

Breaking down hydrocarbons: Cracking breaks down long chain (saturated/alkane) hydrocarbons into shorter chains (some of which will be unsaturated/alkenes) to meet demand. 650°C heat aluminium oxide catalyst.

The hydrocarbon fractions are from the **alkane homologous series** – meaning they all have the same general formula (**C_nH_{2n+2}**), they differ by an increasing methyl group (CH₂). Alkanes have similar chemical properties and gradual variations in boiling points.

Testing for oxygen:

a glowing splint will relight

The greenhouse effect - the earth to get warmer because gases (methane, water vapour and CO₂) absorb heat energy radiated from the earth and release it = keeping the earth warm. **It is argued that human activity has caused climate change**

Acid rain – rain with a pH < 5.2, contains SO₂ and NO₂

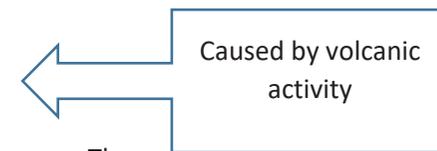
Carbon monoxide is toxic. It combines with **haemoglobin** in red blood cells which means there is less oxygen in the blood = suffocation.

Saturated/alkane: Contain single C-C bonds only.

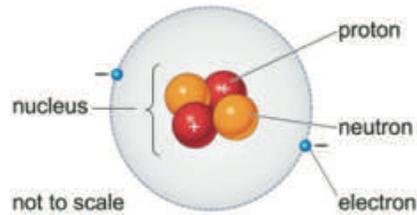
Unsaturated/alkene: Contains double carbon carbon bond C=C

The early atmosphere:

- little or no oxygen
- lots of CO₂
- water vapour
- small amounts of other gas. Then.....
- Water vapour condensed to form oceans (reduced the amount of CO₂ in the atmosphere as some dissolved in the oceans)
- Primitive plants grew, using up CO₂ (reducing levels further) and increasing the amount of oxygen



CP6



Subatomic particle	Relative charge
proton	+1 (positive)
neutron	0
electron	-1 (negative)

An isotope: Atoms of the same element have the same number of protons but a different number of neutrons, as a result they have the same atomic number but different mass number.

Ionisation: Atoms form ions (charged particles) due to the loss or gain of electrons.

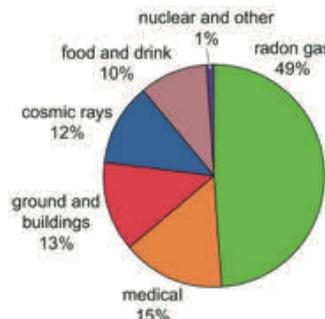
If electrons are lost **positive ions** are formed, e.g. Na^+ and Mg^{2+}

If electrons are gained **negative ions** are formed, e.g. Cl^- and O^{2-}

Ionising radiation: Radiation that causes atoms to lose or gain electrons and therefore become ions.

Background radiation: Radiation that we are constantly exposed to.

This may be from cosmic rays (from the sun or stars), food and drink, rocks, soil and hospitals.



The count rate: is the number of clicks per second measured by a Geiger Counter. Each click represents radioactive decay.

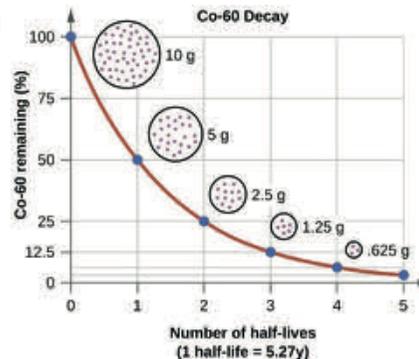
Radioactive decay: When the nucleus of an atom is unstable and it emits a particle.

Radioactivity can be detected by **photographic film** which turns darker if it is exposed to more radiation.

Or by using a **Geiger-Muller** tube to measure the count rate of radiation

Becquerel (Bq) is the unit of activity of a radioactive isotope, equal to the number of decays per second.

Half-life: The time it takes for half of the un-decayed nuclei to decay.



Name	Symbol	What is it?	Penetration depth in air	What blocks it?
Alpha	α or ${}^4_2\text{He}$	Helium nucleus: 2 protons and 2 neutrons	8cm	paper
Beta	${}^0_{-1}\beta$ or e^-	High energy electron	1m	3mm aluminium
Gamma	γ	Part of the Electromagnetic Spectrum	Forever	Several m of concrete or lead

Type of decay	What happens	Effect on mass number	Effect on atomic number
Alpha α	2 protons 2 neutrons emitted	Decreases by 4	Decreases by 2
Beta - β^-	Neutron turns into a proton and an electron is emitted	No change	Increases by 1
Beta+ β^+	Proton turns into a neutron and a positron is emitted	No change	Decreases by 1
Gamma γ	Excess energy is emitted	No change	No change

Irradiation: Exposure to radiation but when you move away the irradiation stops. **Contamination:** If radioactive particles enter body or get on skin (can also happen to soil and water) and remains until if/when material decays

CP9

Potential difference (voltage) is the energy transferred per unit charge passed and therefore the volt is a joule per coulomb

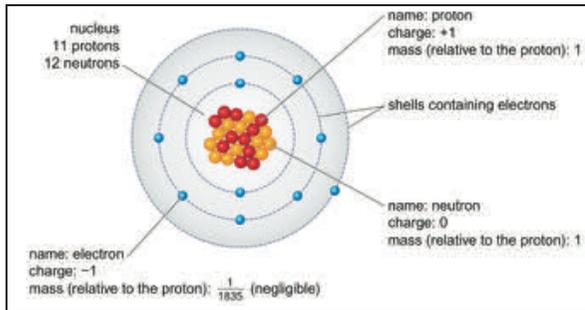
Electric current is the rate of flow of charge. The current in metals is a flow of electrons

In parallel circuits:

- The total current supplied is split between the components on different loops
- Potential difference is the same across each loop
- The total resistance of the circuit is reduced as the current can follow multiple paths

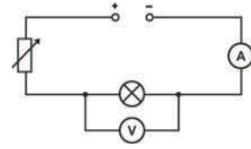
In series circuit:

- Current is the same through each component
- The total potential difference of the power supply is shared between the components
- The total resistance of the circuit is the sum of individual resistors



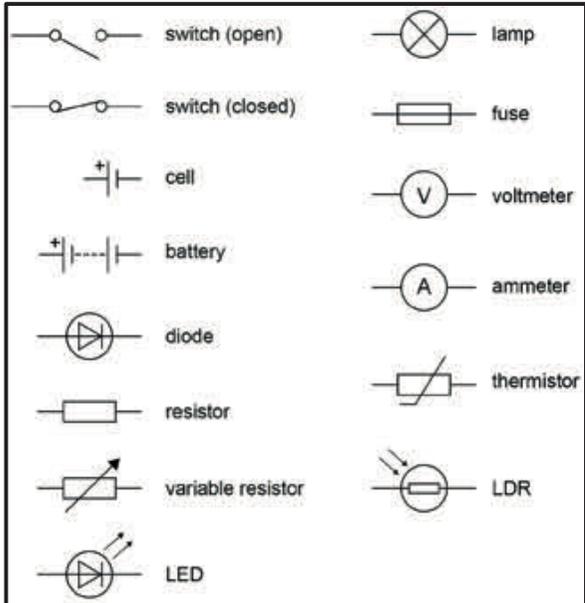
Ammeters measure **current** in **amps** and are connected in **series**

Voltmeters measure **potential difference** in **volts** and are connected in **parallel**.



Direct current (d.c.) is the movement of charge in one direction only e.g. in batteries

Alternating current (a.c.) the movement of charge changes direction e.g. mains electricity UK domestic supply is A.C. 50 Hz and 230 V



potential difference = current \times resistance

$$V = I \times R$$

charge = current \times time

$$Q = I \times t$$

energy transferred = charge \times potential difference

$$E = Q \times V$$

power = energy transferred \div time taken

$$P = E \div t$$

electrical power = current \times potential difference

$$P = I \times V$$

electrical energy = current \times potential difference \times time

$$E = I \times V \times t$$

power loss = current² \times resistance

$$P = I^2 \times R$$

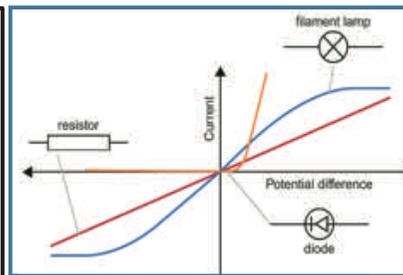
Units

Potential difference: volts (V)

Current: amps (A), Charge: coulombs (C)

Resistance: ohms (Ω), Power: watts (W)

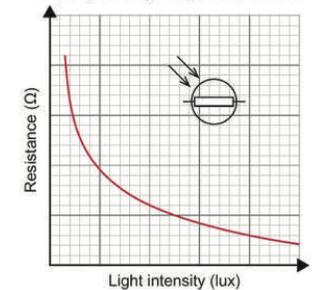
Energy: joules (J), Time: seconds (s)



For a **fixed resistor** the current and potential difference are **directly proportional** so the resistance stays the same.

Filament lamps and **diodes** have **resistances** that **change** when potential difference changes.

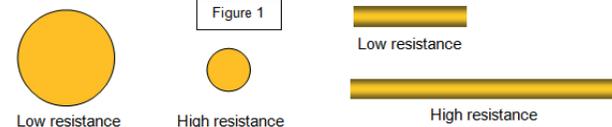
How resistance changes with light intensity for a light dependent resistor



As the light intensity *increases* the resistance of the LDR *decreases*

When there is an electric current flowing, there is an energy transfer which has a heating effect. It is the result of collisions between electrons and the ions in the lattice.

This can be reduced by using wires made of metals with low resistance e.g. copper, using thicker wires or by cooling the wires.

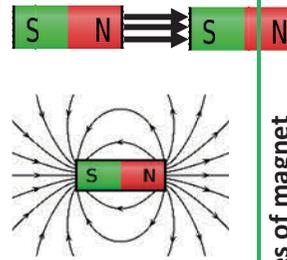


Length and thickness of a wire affects resistance

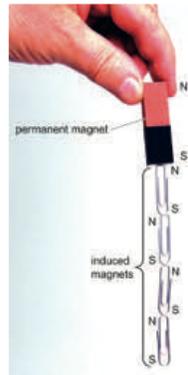
CP10-11



Uniform field	Same strength and direction between two magnets
Non-uniform field	Direction goes North to South. The magnetic field is <i>strongest</i> where field lines are closest together.



Types of magnet	Permanent	A bar magnet that produces its own magnetic field	Will repel or attract other magnets and magnetic materials.
	Induced	A temporary magnet	Only becomes magnetic when placed in a magnetic field. E.g. soft iron
	Electro-magnet	A coil of wire (solenoid) that produces a magnetic field	Behaves like a bar magnet when an alternating current is passed through the coil, generating a magnetic field.

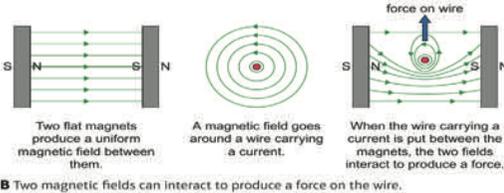


Earth's magnetic field

The needle of a plotting compass is a tiny magnet. It points north, which shows that the Earth has a magnetic field, like a giant bar magnet.

The Earth's magnetic field exists because of electric currents in the molten outer core which is made from a mixture of iron and nickel.

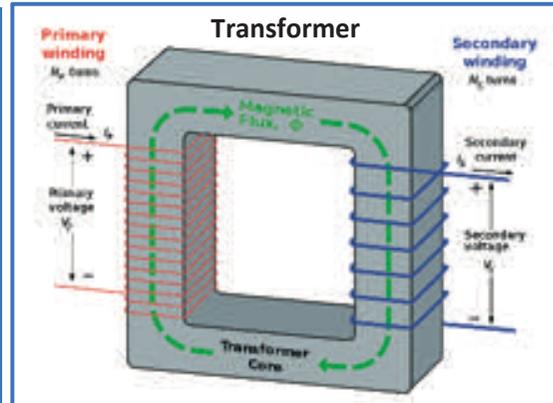
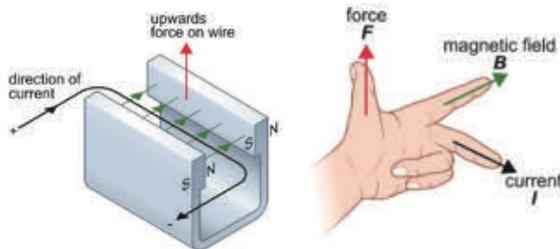
HIGHER: A current carrying conductor placed in a magnetic field experiences a force, and an equal and opposite force acts on the magnet producing the field. Magnetic forces are due to interactions between magnetic fields.



Fleming's left hand rule: Used to represent the relative directions of the force, the current and the magnetic field – motor effect

Force (N) = magnetic flux density (T) x Current (A) x length (m)

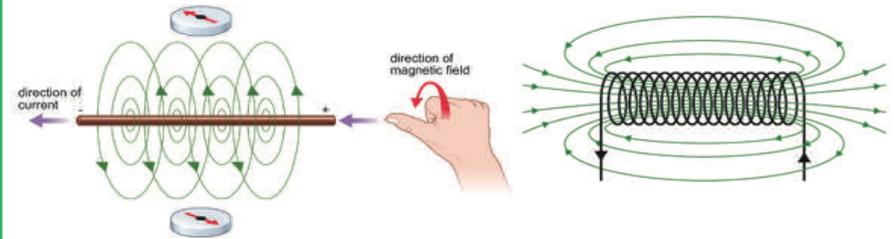
$F = B \times I \times l$



Step-up transformer	More turns on secondary coil	Potential difference increases, current decreases
Step-down transformer	More turns on primary coil	Potential difference decreases, current increases

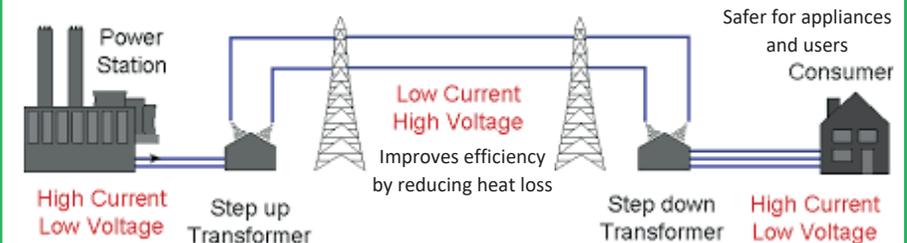
$V_p \times I_p = V_s \times I_s$

A **solenoid** is a long coil of wire. When an electric current is passed through it the magnetic field from each loop of wire adds to the next. This produces a field in the centre of the solenoid that is strong and uniform, while the field outside is weaker and similar in shape to a bar magnet. The direction of the field is given by the **Right Hand Grip** rule.



Transformers are made up of two coils of insulated wire wound on an iron core. By adjusting the number of turns on the primary and secondary coils, they can change the current and potential difference of the output supply.

The **National Grid** distributes electricity generated in power stations around UK





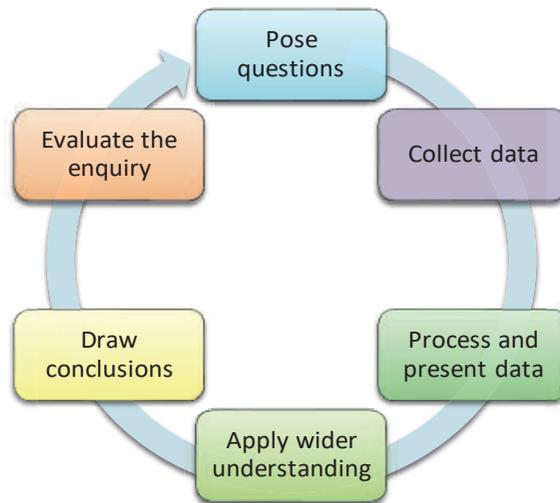
Fieldwork: Component 3



Evaluate the enquiry: At the end of a fieldwork enquiry it is important to evaluate (identify advantages and disadvantages) or state the value of the data collection techniques, the data presentation techniques and the study as a whole. This process enables researchers to learn from their mistakes and improve their future enquiries. When weaknesses in a fieldwork enquiry have been identified it is important that improvements are suggested. Towards the end of an evaluation researchers should consider to what extent their data is useful and what limitations it has.

Draw conclusions: In the conclusion you return to your original fieldwork questions and/or hypothesis and answer them using the evidence you have provided in your study. This section draws all the other sections together and acts as a summary. The more evidence that is used to back up your findings the more plausible they will be.

Pose Questions: Posing questions and hypotheses before an enquiry are fundamental in ensuring enquiries are meaningful and achievable. Hypotheses can be set up and tested, or questions can be set and answered, but it is unlikely that a clear answer will be determined because so many viewpoints are involved. Issues usually require students to make a judgement based on their evidence.



Apply wider understanding: Once fieldwork data is presented in an accessible way it needs to be analysed to reveal patterns, trends and themes. This could involve describing what the data shows and suggesting reasons why this may have occurred. This stage includes linking data to other areas of geography by applying wider understanding.

Collect data: Sample size needs to be carefully considered to ensure the amount of data collected is representative but also manageable. There are many sampling strategies to consider how to collect data fairly. They include, spatial, random, stratified, systematic and opportunistic. Fieldwork includes both primary and secondary data collection. A range of methods can be used to collect data in both human and physical areas. Methods can include bipolar surveys and questionnaires.

Process and present data: Data that has been collected has to be processed and presented to make it more accessible. Calculations (such as averages) may be used to process data. The fieldwork data can be presented in a number of ways. Presentation techniques can fall into a range of categories including cartographic (e.g. placing data on maps), graphical (e.g. plotting bar charts) or visual (e.g. field sketches). Students need to be able to justify how they present their data.

Key terminology:

Fieldwork: practical work conducted by a researcher in the natural or human environment, rather than in a classroom or office.

Hypothesis: is a statement that can be tested.

Opportunistic sampling: deciding where the information will be collected while in the field.

Primary data- data that you have collected yourself

Random sampling: where every member of the population has equal chance of being chosen.

Sample size: is the amount of data collected.

Secondary data- data that has been collected by someone else.

Spatial sampling: encompasses point sampling (choosing specific points), line sampling (collecting data at regular intervals along a line) and quadrat sampling (sampling from inside a square on the ground).

Stratified sampling: the sample contains proportionate data from different categories within the field being studied.

Systematic sampling: data collected following an agreed system/ sample e.g. every 5ms

Globalisation:

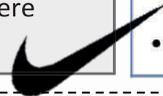
Globalisation is the process of places around the world becoming more connected. Globalisation is driven by:

- Trade
- Culture
- Multinational companies
- Communication



Multinational Companies (MNCs):

MNC are companies which operate in multiple countries around the world, such as Nike. They often make their goods in NICs as they have a large, cheap workforce. This means they can keep costs of producing products down. This can result in cheaper products, particularly for European consumers but can also lead to higher profit margins for the company. Company HQ are usually still in HICs where there is a well-educated workforce.



Advantages

- Lower unemployment rates in NIC
- Cheaper good for Europe and Asia
- Higher profits for MNC
- Improved infrastructure
- Multiplier effect

Disadvantages

- Few workers rights in NICs
- Long hours for workers
- If workers rights are introduced the MNC may move elsewhere



Newly Industrialised Countries (NICs):

NIC economies have rapidly grown, usually in part to having large populations at working age. NICs have policies to encourage investment in factories/ industry. Labour is much cheaper in NICs. Wages in Bangladesh were 95% lower than in Europe in 2015.



Development indicators:

Development indicators are economic and social statistics that are used to judge a country's level of development. They link as wealthier countries tend to have better health care and education.

- GNI (Gross National Income) and PPP (Purchasing Power Parity) are economic indicators. They give an idea of how much money people have on average in a country. There is a general divide between the rich north and the poorer south.
- Doctors per 1,000, percentage who read and write are social indicators. They are used to see if the wealth is being invested in a way which benefits others. They give an idea of what life is actually like.
- HDI (Human Development Index) is a mix of economic and social indicators including measures of wealth, education and health. It is expressed as a number between 0 and 1. The closer to one the number, the more developed the country.



Development Issues

Trade:

Trade can reinforce inequality. LICs often export raw materials which only have small profit margins. The global market means they must keep their prices low to stay competitive. HICs hold the power and can add taxes to certain products to deter LICs making them. This means LICs are stuck with low profit margins. Raw materials are very vulnerable to the weather- e.g. not enough rain may mean crops don't grow.



Fairtrade:

Fairtrade can help by ensuring fair, stable pay which is not affected by global market changes. They encourage long-term partnerships and have a community premium to support local projects e.g. schools.



AID:

Short term/ emergency aid is used to help after natural disasters and medical outbreaks. Can come from governments or by individuals through charities such as Oxfam. E.g. The Ebola outbreak in West Africa, received aid in the form of medical help and education about the disease.

Long term/ developmental aid regular payments to a country for development/ improve life. E.g. Japan → Middlesbrough, Malawi, COVAMS. Aiming to prevent soil erosion through afforestation. This improves relations between countries.



Key terms:

GNI: The average income in a country.

Manufacturing: making something

Multiplier effect: how one good thing in an area can have wider benefits

Outsourcing: when a company pay a factory they don't own to produce their goods

PPP: A way of comparing the average wealth of a country by taking the cost of living in those countries into account

Raw materials: materials that have not been changed

Subsidy: a payment to produce something to enable it to be sold more cheaply

Tariff: a tax put on certain products to make them more expensive

Early Elizabethan England Key Topic One: Queen, Government and Religion, 1558-1569

Context

**Henry VIII
1509-1547**

Henry made himself Head of the English Church so that he could divorce Catherine of Aragon. He had wars with France and poverty increased. There was widespread rebellion.

**Edward VI
1547-1553**

Decoration was removed from churches and the English Prayer Book was introduced. Catholics were killed. Harvests were bad and there were many rebellions.

Mary I 1553-1558

Married Philip II and made England Catholic. There was rebellion and many Protestants were burned alive. People died of starvation. She began an expensive war with Spain.

Elizabeth's Problems

1. What to do about religion?
2. What to do about marriage or an heir?
3. How to tackle issues of poverty?
4. How to tackle foreign relations with France and Spain?
5. How to tackle people's doubts about her gender?
6. How to tackle people's doubts about her legitimacy?



Protestants

The monarch was Head of the Church. Most decoration was removed from the Church. Clergy wore simple robes and taught from an English Bible.

Catholics

Pope was Head of the Church. Churches were highly decorated and clergy's robes were too. Services were held in Latin. Mass was important.

Puritans

Committees were elected by the congregation, Churches & robes were plain. English Bible with Communion representing Jesus spiritually.



Religious Settlement

Elizabeth tried to create a **Middle Way** which united Catholics and Protestants.

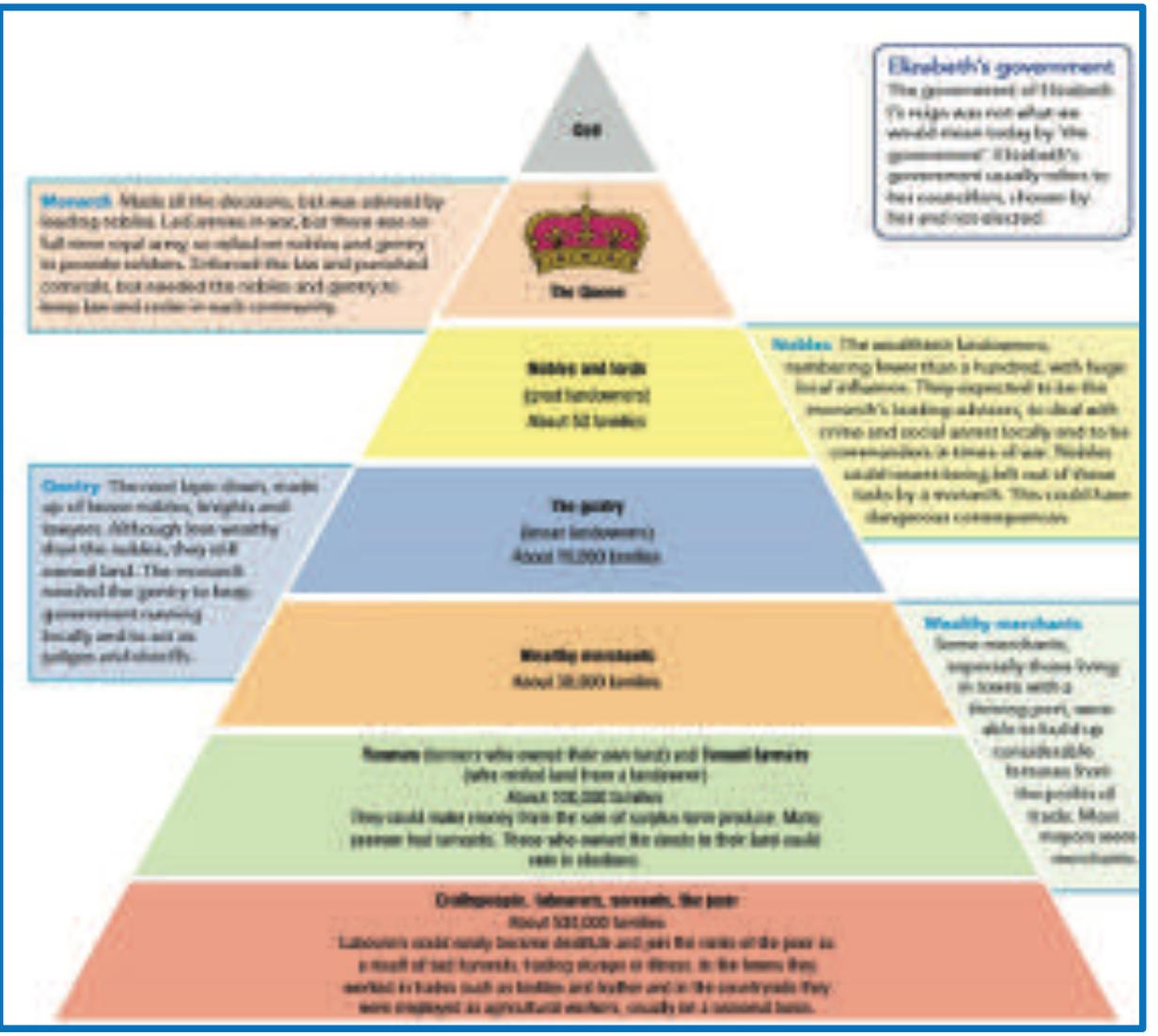
Her **Act of Uniformity** said that everyone needed to attend a Protestant church on a Sunday, or pay a **recusancy** fine of 1 shilling a week (most rich Catholics did this). The **Act of Supremacy** named Elizabeth as **Supreme Governor** instead of Head of the Church, so that she didn't challenge the authority of the Pope.

Elizabeth ruled and took advice from her Privy Council and Court. She had Archbishops and Bishops to assist in the running of the Church and Lords Lieutenant and Justices of the Peace to assist in enforcing laws.

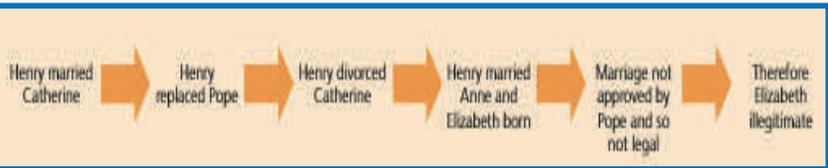
Scotland: Had been ruled by Mary, Queen of Scots (although she moved to France as she had married the heir to the French throne. There were French soldiers in Scotland so the danger of attack was always present.

France: In 1558 France was at war with England and Spain. They also wanted Mary, Queen of Scots to be Queen of England.

Spain: Was the most powerful country in Europe with a huge empire. They were devoutly Catholic. However, they had been friendly with England for most of the Tudor reign due to Mary I's marriage to Phillip II.



Illegitimacy



Opposition

Puritans felt that the Religious Settlement was too Catholic. They wanted her to get rid of Bishops and decoration in churches. Many poor **Catholics** accepted it straight away in order to avoid paying the fine however the rich were angry that she hadn't included **Mass**. English Catholics had lots of support from Spain, particularly once Mary, Queen of Scots had arrived in England.

13 Key Words for Education

bien équipé	well-equipped
le comportement	behaviour
le directeur	head teacher
dur / facile	hard / easy
l'élève	pupil
l'emploi du temps	timetable
le harcèlement	Bullying
la journée scolaire	school day
la langue	language
la matière	subject
le niveau	level
la note	mark, grade
la pression	pressure
la règle	rule
un voyage scolaire	a school trip



French Year 11

Autumn

Units 9 - 12
Education + Work

Si + present tense + future tense

if phrases to talk about possibilities in the future:

Si je n'entends pas, mon prof m'aidera.

If I don't understand, my teacher will help me.

Si j'ai des bonnes notes, je vais aller à l'université.

If I get good grades, I'm going to go to university.

Il faut, on peut, on doit, on a besoin de (+ infinitive)

What you must, can or have to do e.g.

Il faut faire les devoirs = You must do homework

On peut aider les amis = You can help your friends

On doit porter l'uniforme = You have to wear uniform

On a besoin de réviser = We need to revise

Key future phrases followed an infinitive:

Je voudrais être prof = I would like to be a teacher

J'aimerais travailler dans une banque = I'd like to work in a bank

Je vais voyager = I am going to travel

Je veux faire une année sabbatique = I want to take a gap year

Using a variety of tenses in your work – 7 tense challenge!

J'ai l'expérience du travail parce que j'ai travaillé dans un restaurant. J'ai travaillé dans un magasin caritatif. Je vais aider mon père dans son entreprise cet été. En juin j'ai passé mes examens et en septembre je voudrais étudier les maths. Je suis en train de penser à mon avenir et bien que je suis tenté(e) je veux aller à la fac parce que ça sera passionnant.

I have work experience because I have worked in a restaurant. Also, I want to work in a charity shop. I am going to help my dad in his business this summer. In June I sat my exams and in September I would like to study maths. I am thinking about my future and even though I am still young I want to go to university because it will be exciting.

1. Imperfect, 2. Perfect, 3. Present, 4. Present (what you are doing) 5. Imperfect Future, 6. Future, 7. Conditional, 8. Subjunctive

10 Key Jobs

avocat	lawyer
coiffeur / coiffeuse	hairdresser
comptable (m)	accountant
facteur	postman
fermier	farmer
infirmier / infirmière	nurse
informaticien(ne)	computer technician
ingénieur	engineer
médecin	doctor
vétérinaire	vet

10 Key Words for Work + Future Plans

une année sabbatique	gap year
l'apprenti(e)	apprentice
l'avenir	future
le bac	A levels
le boulot	work
l'entreprise (f)	firm, enterprise
la faculté	university, faculty
la licence	degree
le lycée	sixth form, college
le petit job	part time job

10 Key Verbs for Education

apprendre	to learn
demandeur	to ask
échouer	to fail
enseigner	to teach
lire	to read
oublier	to forget
passer	to sit (exam)
porter	to wear
réviser	to pass (exam)
savoir	to know (fact)

Expressing opinions

Je pense que - I think that

Je crois que - I believe that

Il me paraît que - It seems to me that

Je dirais que - I would say that

À mon avis - In my opinion

10 Key Verbs for Work + Future Plans

avoir envie de	to want to
avoir l'intention de	to intend to
étudier	to study
laisser tomber	to drop
espérer	to hope
gagner	to earn (money)
recevoir	to get, receive
rêver	to dream
travailler	to work
voyager	to travel



15 Key Words for Education

el acoso	bullying
el alumno	pupil
el campo de deportes	sports field
el comportamiento	behaviour
el director	head teacher
duro / fácil	hard / easy
la escuela	school
el éxito	success
el idioma	language
la lengua	language
el nivel	level
la nota	mark, grade
la prueba	test, proof
una regla / una norma	a rule
un viaje escolar	a school trip



Spanish Year 11 Autumn

Units 9 - 12 Education + Work

Si + present tense + future tense
W phrases to talk about possibilities in the future:
Si no entiendo, mi profesor me ayudará.
If I don't understand, my teacher will help me.
Si saco buenas notas, voy a ir a la universidad.
If I get good grades, I'm going to go to university.

Se debe, se puede, hay que, tener que (+ infinitive)
 What you must, can or have to do e.g.
Se debe hacer los deberes = You must do homework
Se puede apoyar tus amigos = You can support your friends
Hay que llevar uniforme = You have to wear uniform
Tengo que repasar = I have to revise

Key future phrases followed an infinitive:

Me gustaría ser profesor I would like to be a teacher
Quiero trabajar en un banco I would like to work in a bank
Voy a viajar I am going to travel
Quiero tomarme un año sabático I want to take a gap year

Using a variety of tenses in your work – 9 tense challenge!

Tengo experiencia de trabajo porque **trabajé** en un restaurante. También **trabajaba** en una tienda solitaria. **Voy a ayudar** a mi padre en la empresa este verano. En junio **hice** mis exámenes y en septiembre **he querido** estudiar las matemáticas. **Estoy pensando** sobre mi futuro y cuando **termine** derecho años quiero ir a la universidad porque **será** emocionante.

I have work experience because **I have worked** in a restaurant. Also, **I used to work** in a charity shop. **I am going to help** my dad in his business this summer. In June **I did** my exams and in September **I would like** to study maths. **I am thinking** about my future and when **I am** to go to university because **it will be** exciting.

1. Imperfect, 2. Perfect, 3. Preterite, 4. Present, 5. Present Continuous, 6. Immediate Future, 7. Future, 8. Conditional, 9. Subjunctive

10 Key Jobs

abogado	lawyer
contable (m)	accountant
granjero	farmer
enfermero	nurse
hombre de negocios	businessman
ingeniero	engineer
médico	doctor
peluquero	hairdresser
periodista (m)	journalist
veterinario	vet

10 Key Words for Work + Future Plans

un año sabático	gap year
el aprendiz	apprentice
el bachillerato	A-levels
el empleo	job, employment
una empresa	company
la formación	vocational training
el jefe	boss
el sueldo	wages, salary
el título	degree
la universidad	university

10 Key Verbs for Work + Future Plans

conseguir	to get, achieve
dejar	to leave
encontrar	to find
esperar	to hope
estar en paro	to be unemployed
ganar	to earn (money), win
obtener	to get, obtain
soñar	to dream
trabajar	to work
viajar	to travel



10 Key Verbs for Education

apoyar a	to support
aprender	to learn
aprobar	to pass (exam)
ayudar	to help
contestar	to answer
entender	to understand
enseñar	to teach
estar	to be absent
olvidar	to forget
repasar	to revise

Expressing opinions

Pienso que - I think that
Creo que - I believe that
Me parece - it seems to me
Creo que - I would say that
A mi modo de ver - From my point of



1. Key Christian beliefs

You cannot love both God and money
 We're all made in the image of God (So we shouldn't pre-judge people- prejudice)
 Only God can take life (Life is sacred- sanctity)
 Love your neighbour (Mark 12:31)
 We're all one in Christ
 Follow the example of Jesus



2. Key Buddhist beliefs

Keep the 5 Moral Precepts
 "Give even if you only have a little"
 Show karuna (compassion)
 Show metta (loving kindness)
 Produce good karma
 Avoid Greed, Hatred and Ignorance (the Buddhist 3 Poisons)
 eg do not harm life



3. Abortion

FOR-

- A woman should have the right to choose, it's her body.
- A foetus is not human until 24 weeks
- We shouldn't have unwanted babies



AGAINST-

- Life begins at conception (when the sperm fertilizes the egg)
- Adoption is better than abortion
- Only God can take life
- Abortion produces bad karma



4. Euthanasia

For

- People should die with dignity
- Why prolong pain?
- Quality of life is better than sanctity of life
- Show God's money

Against

- People can get pain relief
- The elderly will face pressure to be euthanised
- Life is a gift from God
- Life is sacred (sanctity)

5. Animal Rights

For using animals / Against using animals

- F-** Humans are more important
- A-** Meat is bad for the environment
- F-** Animals in experiments can have pain relief
- A-** Factory farms and experiments on animals are cruel
- F-** Love your ill neighbour (find cures experimenting on animals)
- A-** Be a good steward of God's animal kingdom

6. The Environment

No to Global Warming
 No to Pollution
 No to deforestation
 No to plastic waste
 Life is a gift from God

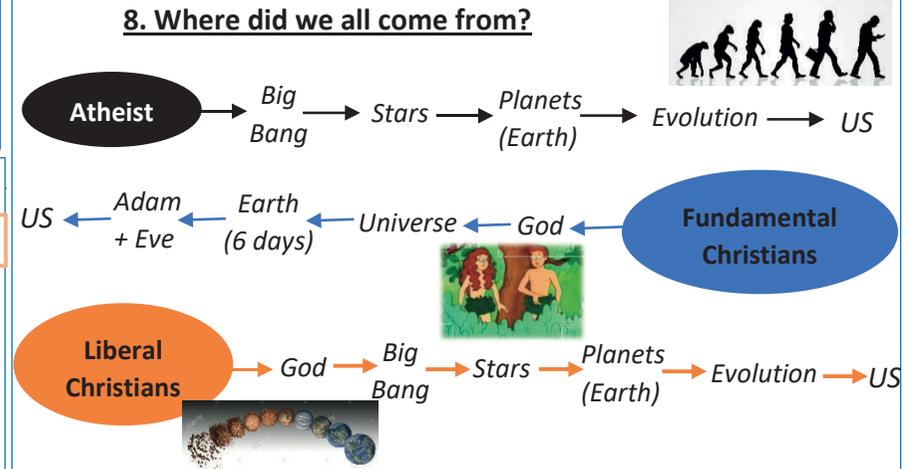
Yes to meat production
 Yes to clothes and fashion
 Yes to the economy
 Yes to being rich
 If it feels good do it



7. Religious Quotes

- Abortion-** "I formed you in your mother's womb" (Jeremiah 1:5- The Bible)
- Euthanasia-** "Blessed are the merciful" (Matthew 5:7- The Bible)
- Animal Rights-** "Be kind to all creations, this is the true religion" (The Buddha)
- The Environment-** "The Earth is the Lord's" (Psalm 24- The Bible)

8. Where did we all come from?



9. Key Words

What do the following mean?

Sanctity; sacred; steward; karuna; metta; enlightened; foetus; conception; euthanasia; deforestation; atheist; fundamental; liberal; evolution.

10. Key Questions

- a) Name 3 key Christian beliefs and 3 key Buddhist beliefs.
- b) Using Christian beliefs what would a Christian attitude be to **abortion; euthanasia; animal rights and the environment?**
- c) Using Buddhist beliefs what would a Buddhist attitude be to **abortion; euthanasia; animal rights and the environment?**

Theme D- Religion, Peace and Conflict

Christian Aid... Help victims of war providing food, medicines and protection to ease human suffering.

Martin Luther King- A Christian pacifist.

1. Key Christian beliefs

Only God can take life (Life is sacred- sanctity)

Be a good steward of God

Follow the example of Jesus

Follow the 10 Commandments

Love your neighbour (Mark 12:31)

Forgive your enemies



2. Key Buddhist beliefs

Keep the 5 Moral Precepts eg do not harm life

Become enlightened (know the truth)

Show metta (loving kindness)

Show karuna (compassion)

Produce good karma

Give up selfish cravings (4 Noble Truths/ 8 Fold Path)



3. Is it OK to use violence?

	YES	NO	MAYBE
To stop a child kidnap			
To fight as a soldier			
To get revenge			
To protest for a cause			
To do a combat sport			
To defend yourself			
To win an argument			
To punish prisoners			

“Forgive your enemies” (Jesus)

“Life is a gift from God” (The Bible)

“Do not repay evil with evil” (The Bible)

“Neither kill, nor get others to kill” (The Buddha)

“An eye for an eye, a tooth for a tooth” (Deuteronomy 19)

4. Terrorism

“One man’s terrorist is another man’s freedom fighter”

“Terrorists are soldiers fighting back”

“The cause justifies the means”




“Only God can take life”

“Follow the example of Jesus”

“10 Commandments- Do not murder”

Pacifists do not believe in any form of violence

AGAINST



- Forgiveness is better than revenge
- War= millions of deaths
- War= millions of injuries
- War= destruction of the planet
- War causes food rations
- War= a bankrupt country
- War= fear/ mental stress
- Let us reconcile enemies
- **“Those who live by the sword, shall die by the sword” (Matthew 26)**
- **“Follow the example of Jesus”**

FOR



Just Wars- War is OK if:

- It is good over evil
- Innocent people are not targets
- You use minimum force
- You get UN approval
- It is a last resort

- To defend our country
- To help other countries abroad
- A holy war to defend a religion

6. W.M.D s
(Weapons of Mass Destruction)

Should a country have nuclear missiles??



YES

- We need a nuclear deterrent (to warn off others)
- We need justice against bad countries who use a nuclear bomb ie ability to strike back
- Nuclear bombs have kept the world safe

NO Campaign for Nuclear Disarmament.

- WMDs can kill millions
- WMDs can get into the wrong hands (eg terrorists)
- They could be set off accidentally
- They would destroy the environment
- They cost billions of pounds



7. Key Words What do the following mean?

Pacifist; just; justifies; minimum; force; holy war; deterrent; WMD; reconcile.

8. Key Questions (Give reasons)

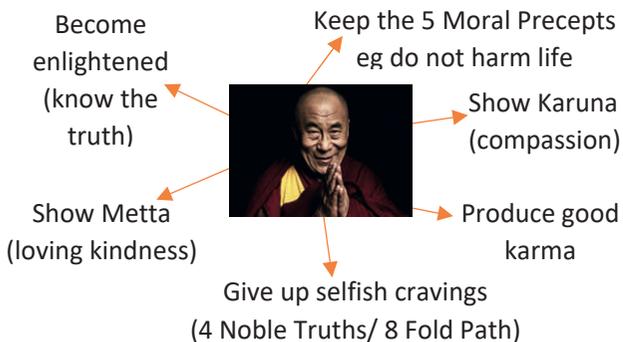
- Is it OK to use violence? Religious views?
- Are Christians/Buddhists against WMDs?
- Give 3 arguments for and against war.
- Should Britain have a nuclear deterrent?
- Would you become a pacifist?

Theme E- Religion, Crime and Punishment

1. Key Christian beliefs



2. Key Buddhist beliefs



3. Bad reasons for breaking the law

Greed	Hatred	Jealousy	Apathy (boredom)	Insecurity
Upbringing	Lust	Revenge	Vanity	Selfishness
Intolerance	Ignorance	Peer Pressure	Addiction	?

Other reasons for breaking the law...

- Fighting for justice
- Obeying God 'A higher law'
- Extreme poverty
- Mercy killing
- The effects of mental illness



4. Aims of Punishment

RETRIBUTION- Vengeance (revenge) for wrong doing. Justice for the victim (fairness). 

DETERRENCE- Sending out a warning to others. Detering them from committing crime. Protecting the public.

REFORMATION- Reforming the criminal. Helping them change for good. 

REPARATION- Repairing the damage you have done for example through community service.

5. Types of punishment

- Arguments **FOR** prison...
- It protects the public from danger
 - It teaches criminals a lesson
 - It gives offenders counselling
 - It gives education opportunities
 - Prisoners can find faith

- Arguments **AGAINST** prison...
- Bullying in prison leads to suicide
 - Offenders learn to become even worse than before they went in
 - Criminals become addicted to drugs
 - It doesn't work, 70% reoffend
 - Prisons are overcrowded
 - The prisoner's family suffers
 - Each prisoner costs the tax payer 40k plus
 - Many prisons are very old

6. Arguments FOR corporal punishment *(Giving prisoners physical pain)*

- ❖ It provides retribution to violent offenders and justice for the victim
- ❖ It acts as a deterrent (a warning)
- ❖ It may help prisoners to reform
- ❖ It can be used instead of expensive prison time



Arguments AGAINST corporal punishment

- ❖ It is inhumane to use violence/torture
- ❖ It makes society as bad as the criminal
- ❖ It might leave criminals wanting revenge



7. Arguments FOR capital punishment

(The death penalty)

- It provides retribution and justice for the victims
- The murderer will be dead, so the public is safe
- It can save prisons a life time of expense
- Utilitarian argument. Capital punishment may provide the maximum happiness for the greatest number of people

Arguments AGAINST the Death Penalty

- It is inhumane to kill someone
- The executioners become the murderer
- Innocent people are sometimes executed
- There is little evidence that it is a deterrent



8. Key words

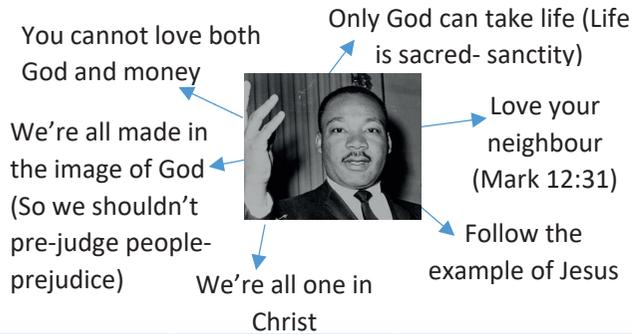
What do the following mean?

Sanctity; Steward; Karuna; Metta; Enlightenment; Apathy; Retribution; Vengeance; Justice; Deterrence; Reformation; Reparation; Corporal Punishment; Capital punishment; Inhumane; Utilitarian.

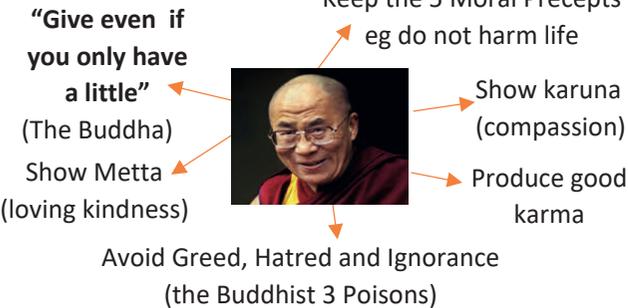
9. Key Questions

- Name 5 key Christian and 5 key Buddhist beliefs
- Using the Christian beliefs, what do you think Christian views might be on: breaking the law; prisons; corporal punishment and capital punishment?
- Using the Buddhist beliefs, what do you think Buddhist views might be on: breaking the law; prisons; corporal punishment and capital punishment?
- What are the 4 aims of punishment?
- Give 3 arguments for and against prison.
- Give 3 arguments for and against corporal punishment.
- Give 3 arguments for and against capital punishment.

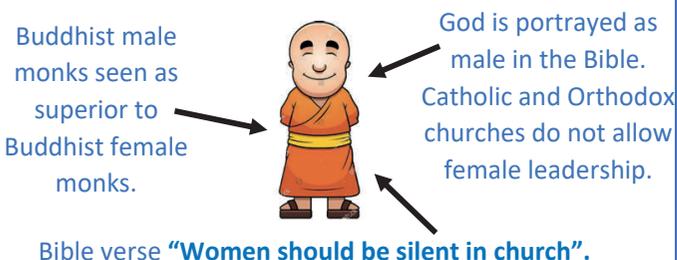
1. **Key Christian beliefs**



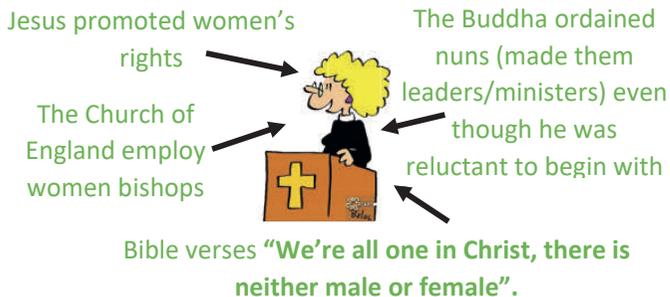
2. **Key Buddhist beliefs**



3. **Evidence of possible sexism in religion**



4. **Defence against accusation of sexism in religion**



5. **Evidence of possible homophobia in religion**

→ Many Christians think that God intended heterosexual relationships that lead to having children (*Genesis 1*).

→ Many Christians believe homosexual relationships are sinful.



Defence against accusations of homophobia in religion



→ Many Christians think we should love our gay neighbour, and some think homosexual relationships are acceptable.

→ Buddhists want to show metta to everyone, regardless of sexual orientation.

6. **Support of religious freedom**

→ Our government gives freedom of religious expression.

→ "Everyone has the right to freedom of thought, conscience and religion" (U.N.)

→ "Live at peace with everyone" (Romans 12)

→ Buddhist don't try to convert others.



Evidence of lack of religious freedom

→ Catholics fighting protestants in the past in Northern Ireland.

→ Christians in particular are persecuted for their faith.

→ Some Christians would see other religions as 'idols' (false gods).

→ Muslims have been persecuted by Buddhists in Myanmar and many have been killed or become refugees (homeless)



7. **Key Human rights- Right to...** Life; freedom from torture; freedom from slavery; equality; free movement; peaceful assembly; education; rest and leisure; shelter; free speech.

Human responsibilities- (To respect the rights of others)

8. **Racism**

Religion the Solution

- MLK- Civil rights movement
- Bishop Desmond Tutu (fight against apartheid in S.Africa)
- Jesus- parable of the good Samaritan

Religion part of the problem

- Few black leaders in Church of England
- Racist churches in 20th century South Africa
- Racist Buddhists in Myanmar

Negative discrimination- Acting against someone because they are different eg black.

Positive discrimination- Acting for someone because they are different eg disabled parking spaces.

9. **Religion and money**

Rich people should:

- Be a good steward
- Go the middle way
- Avoid greed (3 poisons)
- Avoid attachment to money
- Love their poor neighbour
- Not exploit the poor



Poor people should:

- Not be exploited (eg not have to pay huge loan interests)
- Be responsible eg look for work, not gamble
- 'Give even if you can only give a little'
- Not be jealous of others



10. **Key words**

What do the following mean?

Sanctity; Prejudice; Karuna; Metta; Ordained; Heterosexual; Homosexual; Orientation; Persecuted; Refugee; Negative/Positive Discrimination; Stewardship; Exploit; Equality; Social Justice.

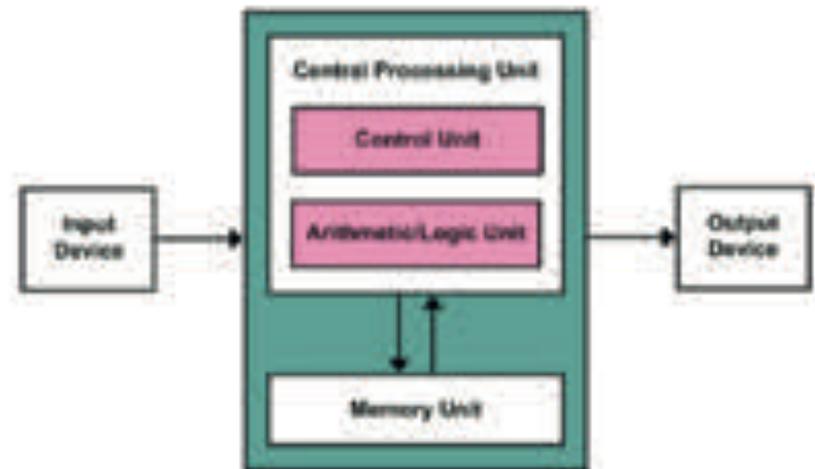
11. **Key Questions**

- Explain why Christians should be against all kinds of prejudice/discrimination eg against disabled people.
- Explain why Buddhists should also be against all kinds of prejudice/ discrimination.
- Religious people always support women; gay people; other religious people; black people. Do you agree?
- People should be able to do what they like with their money? Do you agree? (Give 2 detailed points of view)

GCSE OCR Computer Science 1.1 System Architecture

Key Vocabulary

CPU	Central Processing Unit
MAR	Memory Address Register: which holds memory addresses (locations) for data and instructions which the CPU needs
MDR	Memory Data Register
Program Counter	The address (location) of the instruction
Accumulator	Holds values for the ALU
ALU	Arithmetic Logic Unit: it is the part of the CPU which does all the calculations
CU	Control Unit: Controls the flow of data within the CPU
Cache	Stores frequently used instructions & data, that can be accessed faster than RAM.
Clock Speed	The number of processes a second the CPU can perform
Number of Cores	The number of processors in a CPU
Embedded System	A computer system with a dedicated function
General Purpose	A computer system which is not embedded system. i.e. A laptop



APPLIED

More than one core?

When describing the cores of a Computer System; you need to talk about:

1. The notion of the processors acting **at the same time**
2. More Cores means more **parallel processing**
3. **State exactly how many cores** are there, i.e. a dual core has 2 cores a quad core has 4 cores
4. Each core can work **independently** of each other

Have you applied?

Definitions **must** be applied to the scenario otherwise you will receive 0 marks.

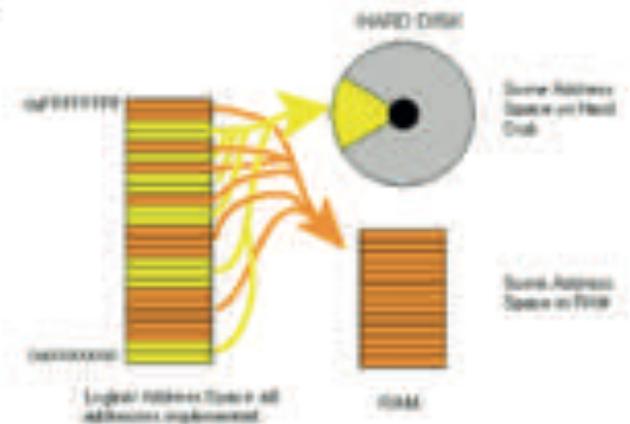
Example: Is a Smart watch an embedded system? 2 Marks

Yes it is because it is not a general purpose computer and it has a dedicated function which is to **tell the time**.

GCSE OCR Computer Science 1.2 Memory

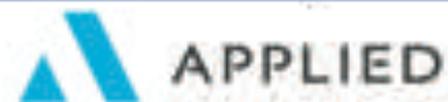
Key Vocabulary

Volatile	Data is lost when there is no power to the storage
RAM	Random Access Memory—it stores currently running programs and a small piece of the operating system. Can store data
ROM	Read only memory—it holds the BIOS which allows the computer to boot up. It cannot be edited. Can store data.
BIOS	Basic input output system—Another name for the boot up sequence program.
Virtual Memory	Memory which is used when RAM is full. This is taken from secondary storage.
Disk Thrashing	Overusing the hard drive with virtual memory—which over time damages the disk.
Flash Memory (non-volatile)	Memory which retains data in the absence of power. USB drive.



Ram VS Rom

RAM	ROM
Volatile memory	Non-volatile memory
Stores data	Stores data
Stores running programs & part of the operating system	Used to store the BIOS and bootstrap
Memory can be written to or read from	Memory can only be read from and not written to



Have you applied?

Definitions **must** be applied to the scenario otherwise you will receive 0 marks.

Example: How can John increase the performance of his computer? (3)
 Answer: They could increase the number of cores, as this will increase parallel processing. He could also increase the RAM as this will allow more temporary storage for running programs and allow the processor more time to process data, and will reduce disk thrashing.



The CPU will first search for data in the Cache memory and then move further away until it finds what it is looking for. The further away from the CPU, the longer data will take to transfer.



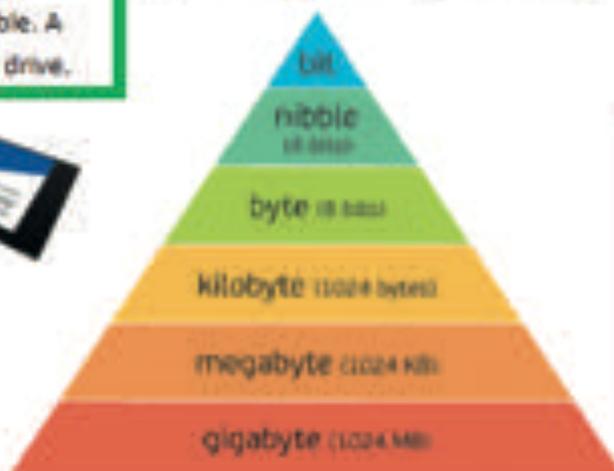
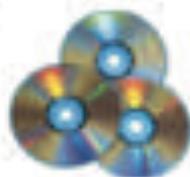
Flash Memory

USB is not accepted—it has to be USB drive; USB pen drive; Flash drive.

GCSE OCR Computer Science 1.3 Storage

Key Vocabulary	
Secondary Storage	Storage which is not directly connected to the motherboard. Non-volatile. Needed to store persistent data.
Primary Storage	Storage which is connected to the motherboard.
Magnetic Storage	Storage which is cheap per MB; not very durable as it has moving parts, not very portable. A hard drive.
Optical Storage	Storage which is cheap per MB, not very durable as it can be damaged by scratches, is portable. A CD
Solid State Storage	Storage which is expensive per MB, very durable as they are shock resistant and have no moving parts., very portable. A USB drive, or a solid state drive.

Device	Capacity	Speed	Portability	Durability	Reliability	Cost
Magnetic	High > 1TB	Medium data access	Not very; it is not easy to move a hard drive	Not very durable, it has moving parts and is easy to break	Mid reliability due to moving parts being easy to break.	Cheap per MB
Optical	Low <1GB	Slow data access	Very portable. It's a disk	Not very, it is easy to scratch and snap	Mid reliability as it is fairly robust but can be damaged and prevents reading data	Very cheap per MB
Solid State	Medium <1TB	Fast data access	Very, solid state drives have no moving parts and are fairly small	Very durable, as they are just microchips on a board.	High—although they do have a limited number of read and writes	Very expensive per MB
Cloud Storage	Within reason unlimited	Dependant on network access speed	Very portable, as long as you have internet access	Very durable, can be accessed on any device with internet access	It is not possible to break cloud storage	Mid range expensive. Depends on how much space you have.



Have you applied?

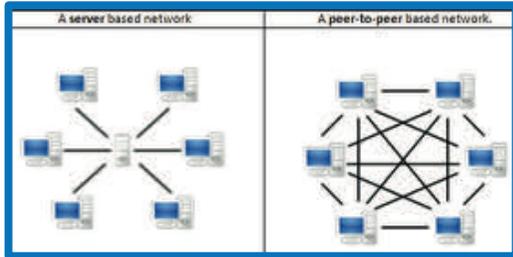
Definitions must be applied to the scenario otherwise you will receive 0 marks. Here the photos have been mentioned.

Example: John is transferring camera files from one computer to another. Discuss the advantages and disadvantages of using a flash drive.

Answer: A flash drive has high transfer speeds, and is very robust however has limited storage when compared to a hard drive, or cloud storage. So to move the photos I would recommend cloud storage.

GCSE OCR Computer Science: 1.4 Wired and Wireless Networks

Network Organisation	
Client – Server	One or more computers are designated as servers, providing a service to clients on a network.
Peer-to-peer	A distributed system where functionality can be divided among the nodes on the network. All computers have an equal status and may partially act as a server to other devices. Peers are both suppliers and users of network data and services.

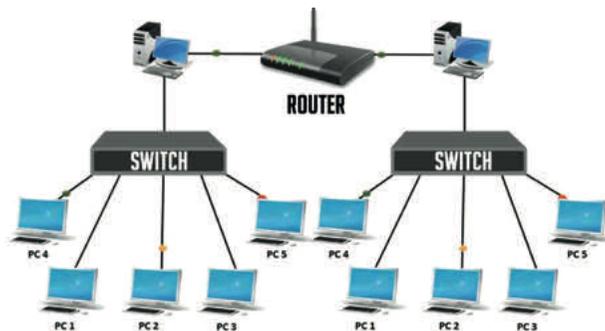


Key vocabulary	
Network	A collection of computer systems that are linked together and can share data.
Node	A device connected to a network via a link.
Links	The interface on which multiple devices can communicate. Such as a cable or wireless.
Client	A client is a piece of computer hardware or software that accesses a service made available by a server.
Server	A server is an instance of a computer program that accepts and responds to requests made by another program, known as a client.

Connection Type	
Ethernet	Sometimes called twisted copper pair – this is the “normal” cable you would use to connect a computer to a router. Speeds are up to 100 MB/s.
Coaxial	These contain a single solid copper centre cable. The most common use for these are for cable broadband, or satellite connections for Sky.
Fibre	Also known as fibre-optic cable. It contains lots of threads of glass which carry electrical impulses in the form of light. Speeds are measured in GB/s and are improving all the time.



Network Scale	
LAN	A local Area Network. All devices are connected on one site. The network may be in a single building or campus. A small geographical area. Usually maintained by a group of network administrators.
WAN	A Wide Area Network. Covers a large geographical area, this could be cities or world-wide. Connections are provided by large companies such as Virgin or BT. The largest example of a WAN you use is the internet. Your mobile phone network is another example of a WAN.
VPN	A Virtual Private Network. Requires a username and password to access this network. It can be accessed anywhere in the world; and is generally secure and or an encrypted connection. It is not a physical network.



Routers Vs Switches	
Routers	If you have access to the internet in your house; you will have a router. It routes traffic around your network. It assigns IP addresses to all devices on the network, and knows all devices connected to the network. It can provide wireless and wired connections
Switches	Extends a network by allowing more devices to connect to it. This device uses MAC addresses to send packets around the network; it is not aware of how many devices are on the network. Usually wired only.

GCSE OCR Computer Science: 1.5 Network Topologies and Protocols

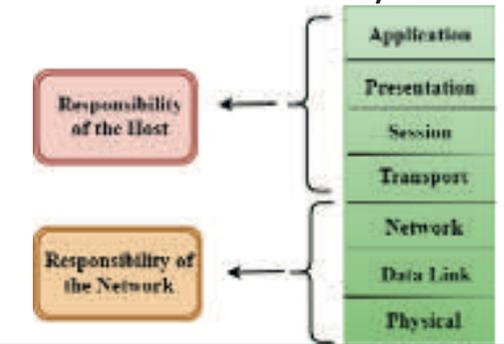
Protocols

Protocols are a set of rules which govern how data is transmitted around a network

Protocol names and purposes		
TCP/IP	Transmission Control Protocol / Internet Protocol	Provides a way for two routers to communicate without any errors. Involves packet switching.
HTTP	Hyper Text Transfer Protocol	Used to send and view webpages over the internet usually within a browser such as chrome.
HTTPS	Hyper Text Transfer Protocol Secure	Used to send and view secure webpages over the internet and to create a secure encrypted connection between the client and server.
FTP	File Transfer Protocol	Used when transmitting a file from a client to a server.
POP	Post Office Protocol	Used to download an email to your computer.
IMAP	Internet Messaging Application Protocol	Used to download an email to your computer.
SMTP	Simple Mail Transfer Protocol	Used to send an email from one mail server to another.

Layers

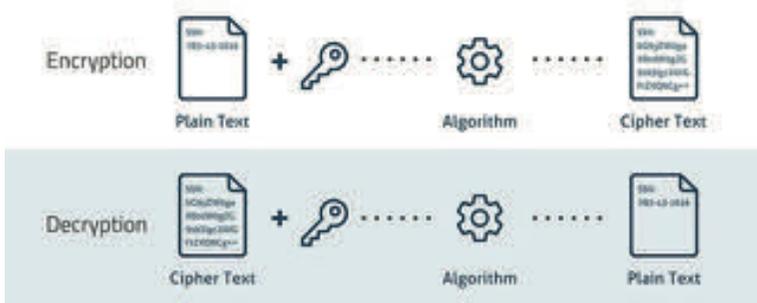
- Layers exist so:
- A layer can be removed without affecting other layers
 - Each layer has its' own purpose and is self-contained
 - It does not need to consider the other layers
 - Different layers interact with different hardware
 - **You do not need to know the layer names**



Encryption

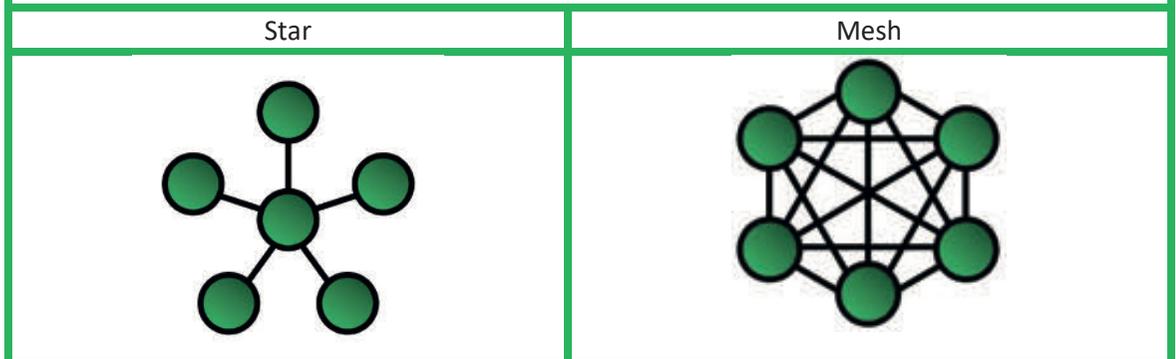
Uses an algorithm to jumble /scramble the data. It cannot be understood without a key. A specific key is used to decrypt it.

SAMPLE ENCRYPTION AND DECRYPTION PROCESS



Network Topologies

Two exist you need to be able to draw / recognise:



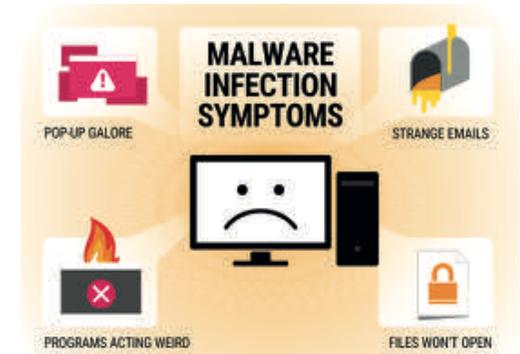
Factors which affect network performance

Number of devices connected	Bandwidth available	Hardware specifications and types of cable	Wired or Wireless	Interference such as walls for wifi
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GCSE OCR Computer Science: 1.6 System Security

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Security Threats To Computer Systems		
Threat	Explanation	How to prevent
Social Engineering / Phishing	This is where information is given freely usually over the phone or by email by someone pretending to be a company or someone else	Staff training and having appropriate spam filters on email inboxes.
Computer Virus	This is where a computer program is installed onto a computer which causes the data on the computer to be damaged.	Anti-virus software and scanning email attachment software.
Weak & default passwords	This is where passwords are left unchanged and potentially very easy to guess	Staff Training and Network Policy.
Brute Force Attack	This is where every possible combination of password is attempted to gain access to a system.	Limit the number of attempts at a password.
Malware	Short for Malicious Software. This is where software which looks genuine is installed and can be used to take control over the computer or cause it to malfunction.	Anti-Malware software Staff Training
Hacker	This is where an unauthorised internet user attempts to gain access to a computer system.	Firewall – which blocks unwanted incoming and outgoing connections to the internet.
SQL injection	This is where SQL structured Query Language is inserted into a website which can be used to damage the database running the website.	SQL sanitation and appropriate access rights on the database.



Types of malware



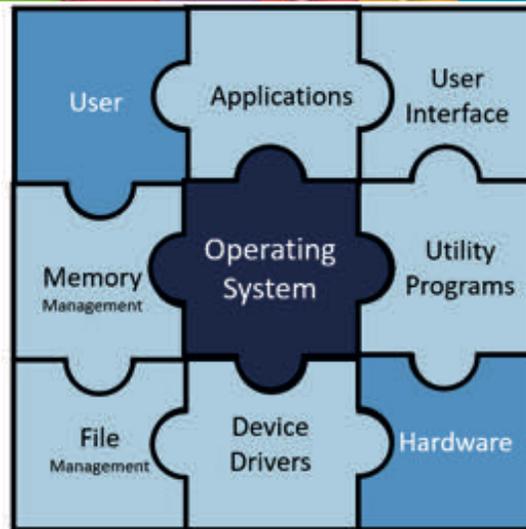
Identifying and Preventing Vulnerabilities	
Threat	Explanation
Penetration Testing	This is where a computer system is tested to see if it can be “broken into” by a computer user in order to help identify weaknesses in the system
Network Forensics	This is where traffic on a network is closely monitored and captured in order to ascertain what data has been sent over a specific network. This could be restricted to a LAN or could include internet traffic (WAN) as well.
Network Policies	This is a set of rules which everyone who uses the network must abide by. These have to be built well and will outline the penalties of breaking the rules in place.
Firewalls	A piece of software used to block and incoming or outgoing connections to a computer system which could be harmful to it.
Anti-Virus	A piece of software which is used to scan for and remove viruses from a computer system.
User Access Levels	This is a security settings which prevents users at certain levels accessing information. Some Examples are: Standard User, Admin, Super Admin
Passwords	Need to be a set length, contain special characters, can contain two step verification

GCSE OCR Computer Science: 1.7 Systems Software

Hardware Vs Software	
Hardware	Is a physical part of a computer system and its related devices both internal and external. Anything you can “touch” is hardware; motherboard, RAM, monitors etc
Software	Term used to cover computer programs, most software falls into either an application, system or utility software.



2 Types of Systems Software



Utility programs

Utility software helps maintain or configure a computer. Many of these are installed at the same time as the OS but they can also be added afterwards. Some examples are:

44 COMPUTING

Utility Programs	
Disk defragmentation	Re-organises files on a hard drive to put fragments of files back together. This reduces the time needed for a disk head to locate data. You do not need to defragment a SSD; this will actually reduce their life expectancy.
Backup Software	Does what it says on the tin. It is used to take a copy of files to help prevent loss of data. Backups can be full or incremental. Full = everything backed up Incremental = only recently updated files are backed up
Encryption	Uses an algorithm to scramble text so that it is not understood; and requires a key to decrypt.
Compression Software	Reduces the size of a file so it takes up less disk space, and is quicker to download over the internet. Compressed files must be extracted before they can be read. Within sound Lossless – Is how youtube works! It can compress a file without losing any of the information and is reversible. Not all files can be compressed with this. Lossy – It can compress a file but will permanently lose some of the data. It can produce much smaller files than lossless.

Music Unit 1

Venues

- Small and medium sized venues
- Large multi-use venues
- Health and safety
 - Risk assessment – the process you go through to ensure an event is safe.
 - Capacity – maximum number of audience members
 - Fire precautions
 - Policies and procedures – that all venues should have
- Performance roles

Production and Promotion:

- Record labels
 - Major – sponsored and more money.
 - Independent – going it alone and on a budget.
- Music Publishing – anything involving the distribution of music to an audience.
- Promoting (marketing)
- Broadcasting – TV, Radio, Internet
- Marketing and distribution

Commonly Confused Job Roles:

Producer – have artistic overview of a project

Promoter – is responsible for advertising of a product.

Mastering Engineer – Puts the finishing touches to a recording once it is all finished.

Manager – NEVER write this without clarifying the type of manager (tour manager, venue manager, band manager etc.)

Employment:

Freelance – working for yourself.

Contracted – Having a boss, a monthly salary, and terms to work to.

Short Term – a short amount of time (one gig or one day)

Long Term – months or years.

Tax / National Insurance – the amounts you have to pay to the government regardless of whether you are freelance or contracted.

Unions

- Musicians Union (MU) – for performers, instrumental teachers and composers.
- Equity – For actors, dancers, and choreographers.
- BECTU (Broadcasting Entertainment Cinematograph and Theatre Union). – for media and production roles.
- Monitor employment conditions
- Give advice on employment and contracts
- Support in relation to fair working conditions
- Handling of disputes

Services, Companies, and Agencies

- Royalty Collection Agencies
 - Performing Rights Society (PRS) – collects for composers
 - Phonographic Performance Limited (PPL) – collects for performers
- Artist Representation
 - Management – deals with finances, bookings, organisation.
 - Agent – books gigs.
 - Public Relations (PR) – marketing.
 - Stylist
- Hire companies – for equipment.

Relationships within the industry:

- How promoters match acts to venue, e.g. location and type of venue, size and scale of performance area, facilities, technical equipment/support available, audience capacity, type and intention of performance, timing and availability, financial considerations
- The importance of effective communication between those working in the industry
- How promoters and musicians evaluate the advantages and disadvantages of hiring and buying equipment
- How promoters and musicians find and select suppliers and installers of equipment
- How trade bodies such as the Music Producers Guild (MPG), the Association of Professional Recording Services (APRS), PRS for Music and PLASA support their members and their industries
- How promoters and musicians find and select transport companies for touring
- How promoters secure funding for and market events.

Instrumental and Vocal Techniques

- Accuracy of pitch/intonation (*that you are playing in tune*)
- Rhythm and timing (*that you can play the correct patterns of notes in time with others*)
- Technical exercises to improve technique relevant to the voice type or instrument in question, e.g. scales and arpeggios, lip slurs and paradiddles (*these can be easily searched for on Youtube*).
- Expression (*musically expressing a story*) and dynamics (*volumes*)
- Phrasing (*like musical sentences and how well you express them*)
- Range (*from lowest to highest note*)
- Sight reading/singing
- Improvisation (*making a part up on the spot*)
- Breath control
- Vibrato (*when a note wobbles*)
- Confidence
- Tuning (*of your instrument*)
- Following an accompaniment (*following a backing track of the rest of the band*)
- Learning repertoire (*how well you learn the piece you are working on*)
- Musical interaction (*looking at and responding to others*)
- Stage presence (*performing bit!*)

Music Unit 5



Personal management skills

- Independent practice (*this is the practice you do outside of the lesson*)
- Attendance
- Time management (*adhering to rehearsal schedules*)
- Readiness to work (*including bringing correct equipment, if necessary*)
- Listening to instruction/direction
- Observing safe working practices
- Willingness to try things out
- Concentration and focus within the tasks
- Appropriate interaction with others – trust and cooperation
- Rehearsal discipline
- Showing sensitivity towards others

Interpretive skills

- Emphasis (*stressing a particular part*)
- Accurate interpretation and reproduction of style
- Awareness and appreciation of accompaniment
- Physical expression
- Communication in performance – with other musicians and the audience
- Use of timing and rhythm
- Intonation (*this is overall tuning*)
- Projection (*this is as much about noise as projecting an image on stage*)
- Focus (*commitment to the performance*)
- Musicality/sensitivity
- Stage presence.

Rehearsal skills

- Warm-ups
- Physical preparation, e.g. relaxation and breathing techniques and technical exercises (as appropriate)
- Learning repertoire
- Rehearsing with accompanist/band (as appropriate)
- Musical interaction with other performers (as appropriate)
- Receiving and giving constructive and positive feedback.

A **'brief'** is an explanation of the purpose of your piece of drama. The brief will tell you who your piece of drama is for and what it needs to do.

A **'stimulus'** is a starting point to trigger a creative process; it could be a picture, a poem, a phrase or word even a piece of music. Where you go from your stimulus is up to you as long as it fits the brief and you can name the steps you took to get from the stimulus to your finished piece of drama.

Devising techniques

- Freeze frame – A single static image created by actors
- Marking the moment – Using slow motion or a freeze to highlight an important moment
- Mime – Acting out something that isn't there
- Monologue - A long speech by one character
- Flashback – A scene set earlier in time
- Flash Forward – A scene from the future that appears in a narrative out of chronological order
- Narration – Telling the audience what is happening in a scene
- Physical Theatre – A form of theatre in which your body is the main tool to communicate with the audience.
- Conscience Alley – dividing your group into for and against in a dilemma that a character is facing.
- Spontaneous Improvisation – creating or performing something on the spot.
- Verbatim theatre – When you take words that other people have spoken and use them to create a script for your piece
- Blocking – Organisation of the movements on stage
- Voice over – One performer speaks over the top of a scene that the other performers act out in silence

Activity 1

Your **first written controlled assessment** is about your **'initial response'**. You will complete this after you have seen the brief and stimulus you must tell us about:

- the concept and style of performance
- your selection of target audience
- the resources needed (during development and performance) for the exploration and development of ideas
- how the ideas meet the requirements of the brief
- how the work of practitioners has influenced your ideas
- ideas you have contributed

Activity 2:

Your second written controlled assessment is about your Skills Log. You should work within your performance group to develop skills related to the performance idea based on the stimulus. You must tell us about:

- information on the following:
- your role in the group
- the skills and techniques you selected
- how you developed your skills and techniques
- your individual contribution to the rehearsal/development process
- how the work of practitioners has influenced your development of skills and techniques.

Activity 3: Is a performance of the piece of drama you have created.

Activity 4:

Your final written controlled assessment is your Evaluation Report You must tell us about:

- how the outcome met the requirements of the brief
- the development process
- the performance/design outcome
- the key strengths of your work
- areas for further development

PHYSICAL SKILLS

Actions – moves that dancers do

Accuracy – the correct movements

Alignment – the correct positioning of body parts in relation to each other

Balance – Holding yourself steady

Coordination – being in control of multiple body parts

Control – ability to efficiently start, stop and change movements rapidly

Contraction – the shortening of a move

Characterisation – showing a character when you dance

Communication – showing meaning to the audience

Dynamic – The quality of a move

Energy – the effort put into a performance

Expression – demonstrating meaning through dance.

Extension – Lengthening a move/limb

Facial Expression – using your face to show meaning or character

Focus – Using your eyes to direct the energy in a performance

Flexibility – range of movement in the joints

Gesture – movement of a single body part to convey meaning

Interaction with others – Awareness of other dancers and how you communicate

**Dance****BTEC Technical Award in
Performing Arts****Component 2****Knowledge Organiser****PERFORMANCE AND INTERPRETIVE
SKILLS**

Awareness of performance space – using the whole stage

Awareness of audience – making sure you face the front as much as possible

Interaction with others – using eye contact with others

Focus – your attention during performances.

Energy and Commitment – your level of focus

Handling and use of set and costume

Projection – how well you project the meaning of the performance to the audience

Awareness of accompaniment – your use of the song you are dancing to.

Facial Expression

Stage Presence

PHYSICAL SKILLS

Mobility – ability to move smoothly/fluently

Movement memory – Remembering the sequence of moves.

Pace – the speed of a move

Phrasing – How the energy is distributed in a sequence of moves

Projection – Energy the dancer uses to connect with the audience

Posture – the way you hold your body

Rhythm – patterns in moves / sounds

Relaxation – when the body is free from tension

Spatial Awareness – being conscious of the spacing around you

Strength – muscular power

Stamina – maintaining physical and mental energy for periods of time

Suspension – adding delay to a move

Swing – moving back and forth

Trust – relying on others in a cooperative move

Use of breath – when preparing for moves, the inhaling and exhaling of air

Use of weight – using the downward force of the body.



Cooking Skills Key words: accompaniment, main course/dessert, portion control, food waste, presentation techniques, coulis, gelatine, garnish, glaze, pipe.

Knowledge Key words:

Kitchen operation: layout work, workflow, operational activities, equipment and materials, stock control, documentation and administration, staff allocations, dress code, safety and security.

Personal safety in the workplace: employer/employee, health & safety at work act, RIDDOR, COSHH, manual handling, PPER, health, security level of risk to employees, suppliers and customers.

Unit: Hospitality and Catering

Commercial Catering Equipment

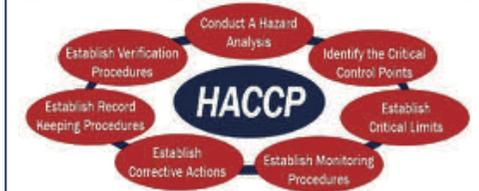


Workplace Legislation:

- Food Safety Act 1990
- HACCP
- Food Safety regulations (1995)
- Food labelling regulations (2006)
- Fair Trade & description standards
- H&S at Work Act (1974)
- HSE

What is HACCP?

Hazard Analysis Critical Control Point

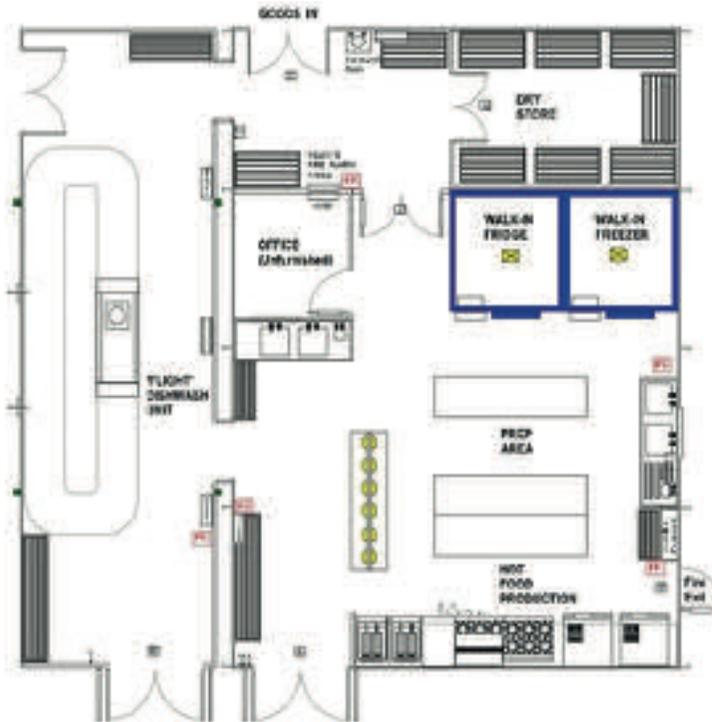


An internationally recognized system for reducing the risk of safety hazards in food

First in First out – stock control, to reduce waste and poor food hygiene standards



Kitchen Layout and Workflow



49 CATERING

Safety in the Workplace

RIDDOR – Reporting of injuries, disease and dangerous occurrences regulations

COSHH – Control of Substances Hazardous to Health



EPOS – Electronic Point of Sale (food)



- Dress Code**
1. White skull cap
 2. Chef's jacket
 3. Checkered chef's pants,
 4. White apron and/or apron
 5. Leather clogs non-slip with closed backs.



Women can wear a skirt or trouser suit with heels
 While men may wear a blazer or suit jacket, shirt, suit trousers, tie



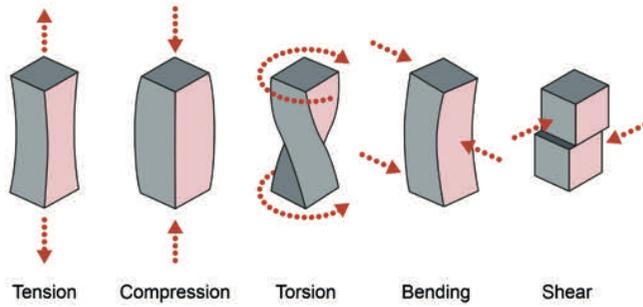
Unit 4 – Common Specialist Technical Principles

50 TECHNOLOGY

Key vocabulary

- Resistant
- Perpendicular
- Stiffness
- Twisting
- Similarities
- Difference
- Functionality
- CNC Router
- Robotics
- Renewable
- Finite
- Non-finite

Forces & Stresses



Static and Dynamic Loads



Acceleration

A static load does not move and will exert far less stress than a dynamic load

$$\text{Force} = \text{Mass} \times \text{Acceleration}$$

Improving Functionality

Materials can be reinforced, stiffened or made more flexible

Techniques include:

- Folding
- Bending
- Webbing
- Lamination
- Fabric interfacing



Lamination – Plywood

Involves bonding 2 or more layers together.

Fabric Interfacing

Fabric Interfacing is added to textile products to make them more rigid.

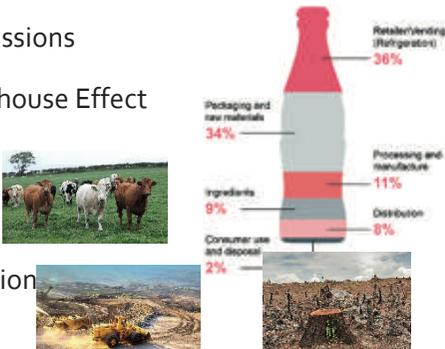


Key vocabulary

- Enhanced
- Rigidity
- Jigs
- Patterns
- Templates
- 3D Printing
- Automation
- Laser Cutting
- Injection Moulding
- Handmade
- Sustainable

Ecological & Social Footprint

- Global Emissions
- The Greenhouse Effect
- Mining
- Drilling
- Deforestation
- Farming



The 6 Rs



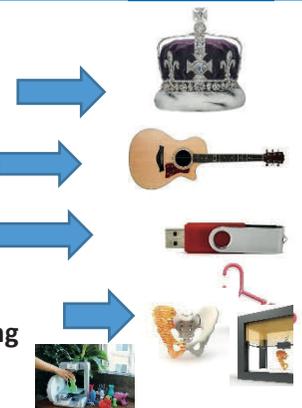
Tertiary Recycling – reprocessing material from a product e.g. pulping paper & card.

Upcycling – products are diverted from landfill and reduce the demand on new products.

Scales of Production

- One off Production
- Batch Production
- Mass Production
- Continuous Production

Prototypes & 3D Printing



This GCSE is about presenting visual and written evidence of my personal investigation on this topic. I don't need to memorise or revise, I just need to produce, make and connect my ideas using the visual language.

- No evidence = no marks
- A little evidence = a few marks
- I do what teacher says = grade 4
- I lead, I know what I want to do and I get on with it producing lots of evidence = top marks



Independent tasks and HW

1 I do research to know the work of artists, world cultures and styles. My chosen artists have worked on a theme similar to mine. I use this knowledge to inspire my creative work. I have proof of my critical understanding in my book.

Artists pages, including:

- Copies of artists' work
- Description of work- *
- Explanation of how it's put together and what it means **
- My research making contextual links***

2 I prove that I can make visual work, I prove that I can also refine my work to make it more meaningful to the theme. I show off what I do well. I can also experiment and take risks trying new ways of mixing techniques and processes.

Test pieces:

- My personal response to artists' work
 - My mixing of two artists' styles
- Refined test pieces:
- two solutions for each test piece using techniques learnt since yr 7

3 I can spot how things could link to my project. I record them using cameras and drawing. Nobody else sees and feels like I do. As an artist I pick what I focus on and my ideas allow me to link these items together with new meaning.

- photo shoots
- drawings
- notes: my links, descriptions and ideas

4 I can produce and present a visual solution to the "Theme". This is my final piece for the project. It conveys my ideas, my connections and my investigations.

- my final piece
- my whole investigation is well presented and easy to follow in my book
- my final piece /project evaluation

Must have techniques and processes: photography, experimental drawing, graffiti, printing, card construction, photomontage, acrylic painting, collage, chiaroscuro.

Year 11 Art & Design. REFINE AND BOOST Portfolio Topics 2+3

Life Events Close-Up

- All visual investigations started in year 10 must be completed.
- Add a new artist to each topic.

- Rhythm:** the placement of repeated elements to cause a tempo or beat.
- Balance:** combining elements to add a feeling of equilibrium or stability.
- Emphasis:** combining elements to stress the differences between them.
- Proportion:** the relationship of certain elements to the whole and to each other.
- Movement:** a sense of direction, it creates the look and feeling of action to guide the viewer's eye through the piece.

- **I see **I think ***I wonder
- Creative investigation:** my project.
- Critical understanding:** I can explain the ideas carried by a work of art.
- Contextual links:** I can explain the historical, political and cultural circumstances in which a work of art is created or used.
- To refine:** to change something in order to improve it.
- To speculate:** to explain something without being 100% sure.
- My personal response to a work of art:** I use the artist's visual language, but using my own images as starting point.
- To convey meaning:** to communicate.
- A technique:** a way to do something.
- A process:** a sequence of techniques.
- Composition:** the layout, it uses the principles of art to carry meaning.



Graven Perry - Narrative



Graven Perry - Close-up

This GCSE is about presenting visual and written evidence of my personal investigation on this topic. I don't need to memorise or revise, I just need to produce, make and connect my ideas using the visual language.



- No evidence = no marks
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Independent tasks and HW

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Artists pages, including:

- Copies of artists' work
- **Description of work: ***
- **Explanation of how it's put together and what it means ****
- **My research making contextual links*****

2 I prove that I can make visual work. I prove that I can also refine my work to make it more meaningful to the theme. I show off what I do well. I can also experiment and take risks trying new ways of mixing techniques and processes.

Test pieces:

- My personal response to artists' work
 - My mixing of two artists' styles
- Refined test pieces:
- two solutions for each test piece using techniques learnt since yr 7

3 I can spot how things could link to my project. I record them using cameras and drawing. Nobody else sees and feels like I do. As an artist I pick what I focus on and my ideas allow me to link these items together with new meaning.

- photo shoots
- drawings
- notes: my links, descriptions and ideas

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- my final piece
- my whole investigation is well presented and easy to follow in my book
- my final piece /project evaluation

Must have techniques and processes: studio, outdoors and experimental photo shoots, photomontage, double exposure, mixed media, black and white, expressive control of depth of field, expressive control of shutter speed.

Year 11 Photography. REFINE AND BOOST Portfolio Topics 2+3

Identity Reflection

- All visual investigations started in year 10 must be completed.
- Add a new photographer to each topic.

- Rhythm:** the placement of repeated elements to cause a tempo or beat.
- Balance:** combining elements to add a feeling of equilibrium or stability.
- Emphasis:** combining elements to stress the differences between them.
- Proportion:** the relationship of certain elements to the whole and to each other.
- Movement:** a sense of direction, it creates the look and feeling of action to guide the viewer's eye through the piece.



Martin Parr, Harbhejan Singh, Hothell, England, 2011

• ***I see **I think ***I wonder**

- Creative investigation:** my project.
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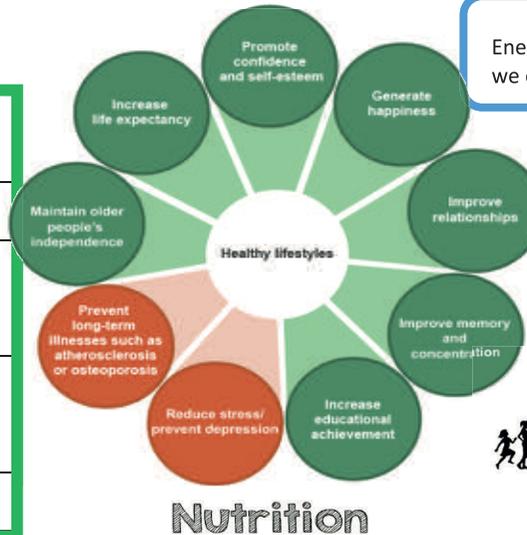


Alexander Rodchenko, Fire escape, 1925

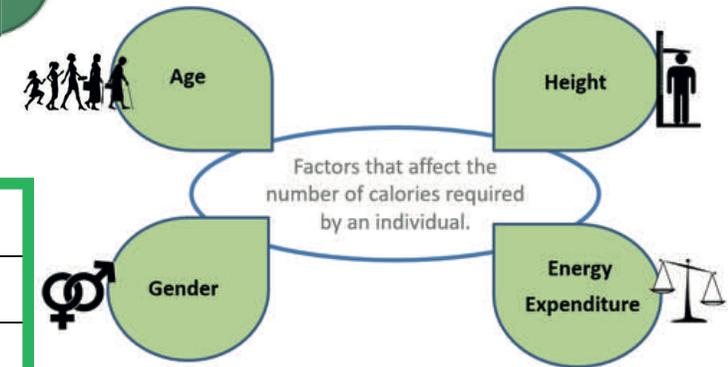
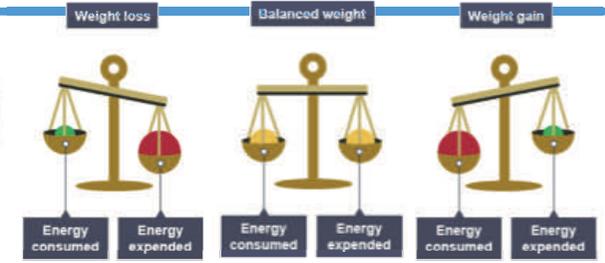
Health, Fitness and Well-being

Key definitions:

Health	A state of complete mental, physical and social well-being, and not merely, the absence of disease or infirmity
Physical Health	All body systems work, free from illness and injury. Ability to carry out everyday tasks
Mental Health	A state of mental well-being in which the person realises their own potential, can cope with normal stressful life, work productively, and able to contribute to their community
Social Health	Basic human needs met. The individual has friendship and support, some value in society, socially active and has little stress in social circumstances.
Fitness	The ability to meet/cope with the demands of the environment



Energy is measured in calories (Kcal) and are provided through the food we eat. The average male requires 2500 Kcal per day and females 2000.



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Consequences of a Sedentary Lifestyle

Increased risk of heart disease	High levels of salt in the diet can lead to increased blood pressure. High levels of saturated fats in the diet lead to a build of cholesterol in the arteries, causing a plaque and narrowing of the arteries.
Weight Gain & Obesity	On average a physically active man needs around 2,500 calories per day, while a woman needs 2,000. If we eat any more, the extra energy is stored for later use, mostly as fat. A lack of exercise will increase the chances of becoming overweight.
Poor self esteem	A lack of regular exercise decreases self esteem as body shape will change and may affect how you feel about your body.
Poor sleep	Studies have indicated that those who were living a sedentary lifestyle expressed poorer resting habits and sleeping patterns. A vigorous workout means the body relaxes into a deeper state.
Diabetes	A sedentary lifestyle means individuals do not get a good daily dose of physical activity. This increases the risk of obesity and developing type 2 diabetes.
Lethargy	A lack of physical activity will leave a feeling of a lack of energy and enthusiasm and continued lethargy can result in forms of depression.

Protein	Used for repair and growth of muscles
Carbohydrates	Primary source of long lasting energy
Fats	Fast Energy. Secondary form of energy when carbohydrates run out
Water	Key to staying hydrated
Vitamins & Minerals	General health of the body including blood, hair, skin and nails



"A balanced diet contains lots of different types of food to provide the suitable nutrients, vitamins and minerals we require."

Ectomorph (Tall)	-An individual with narrow shoulders and narrow hips -Very thin and often very tall -Very light weight - Large forehead -Often described as rectangular
Endomorph (Dumpy)	-An individual with wide hips and shoulders - High Percentage of body fat -Often described as pear shaped
Mesomorph (Muscular)	-An individual with wide shoulders and narrow hips -High percentage of muscle - Strong and powerful athletes -Often described as an upside down triangle

Learning Outcome 1 -
Understand the issues, which affect participation in sport

SPORT STUDIES

RO51 - Contemporary Issues in Sport

Learning Outcome 2 -
Know about the role of sport in promoting values

User groups



The different groups of people who face barriers to participation in sport and physical activity

- Ethnic minorities
- Retired people
- Families with young children
- Single parents
- Children
- Teenagers
- Disabled
- Unemployed
- Working singles and couple

Barriers



Factors that may make participation difficult. Many barriers to participation are common to all user groups

- Lack of time
- Work commitments
- Lack of facilities
- Cost of equipment
- Lack of role models
- Lack of transport
- Lack of motivation
- Lack of awareness of activities
- Lack of disposable income
- Lack of childcare

Solutions



Solutions to for various user groups are often similar and be solutions to many user groups

- Free or subsidised sessions
- Promote role models
- Free or subsidised transport
- Provide childcare (crèche)
- Provide equipment
- Promotion of activities
- Arrange sessions during the day

Team spirit



You can gain the feeling of pride and loyalty from being a member of a team, which makes you want your team to do well/be the best.

Fair Play



Allows you to show polite behaviour, which involves respect for fellow competitors and playing by the rules.

Citizenship



Allows performers to act in a way that citizens of a country should. This can involve getting involved in the local community through sport

Inclusion



Sport allows people to be included within teams and competitions. This can be to encourage under-represented social groups to get involved in sport

Tolerance & Respect



Helps you to tolerate and understand others and show respect to opponents. This could be respecting different cultures and countries through respecting the national anthem

National Pride



Sport develops a sense of pride in the name, culture and practices of a country. National pride is shown when supporters and performers unite behind their country when singing the national anthem or wearing country colours

Excellence



Sport helps to encourage and develop excellence. Performers strive to be the best that they can.

Acceptability



Many people believe boxing should be banned as it's dangerous

Spectatorship



The more people are viewing sports will increase participation rates of those sports

Media coverage



Some sports channels show sport 24/7; this increases participation in the sports that the media show

Environment



Weather in the UK can affect participation. There is a lack of snow in the UK for skiing

Success for teams



Sporting success inspires people to take part in the sports such as GB cycling

Participation



More people participate in sports that have widespread mass participation

Provision



Provision varies in the UK. People cannot participate with little/no provision or access to facilities

Roles models



Positive Roles models increase participation. A lack of role models has a negative impact

Symbol



Five interlocking rings to represent the union of the five continents of the world, which take part. The symbol is closely linked with all aspects of the Olympics and Paralympics and reminds everyone that the brand logo for the sporting event involves all areas of the world

Values



3 Olympic values

- Friendship
- Respect
- Excellence

4 Paralympic values

- Determination
- Inspiration
- Courage
- Equality

Olympic and Paralympics



The Paralympics are games for people with a disability, which run in parallel with the Olympic games. They are both held once every four years in the same host city. Both Olympic and Paralympic movements aim to represent similar core values

The Creed



"The most important thing in the Olympic Games is not to win but to take part, just as the most important thing in life is not the triumph, but the struggle. The essential thing is not to have conquered, but to have fought well."



General

Childline—www.childline.org

0800 1111

Offers information and advice, 1-2-1 confidential chat (text, email, phone) and support from message boards on a wide range of issues.

This website is one of the most useful you will find and can direct you to help or information about all the other topics mentioned here, and

Safety, bullying and abuse

Child Exploitation and Online Protection (CEOP) - www.ceop.police.uk

Report inappropriate online contact, any unlawful misuse of social media, or a child protection concern to a trained police officer. You can also click this button on your platform:



NSPCC—www.nspcc.org.uk 0800 1111

Information and help about on- and offline abuse

**National Bullying Helpline—
www.nationalbullyinghelpline.co.uk 0845 22
55 787**



Health

School nurse—07520 631722

Text only for confidential advice

National Health Service—www.nhs.uk

Research and useful information on health issues

Walk-In Centre, RD&E Hospital—01392 411611

Non-urgent and sexual health needs

**Walk-In Centre, 31 Sidwell Street—01392
276892**



Healthy relationships

Thinkuknow—www.thinkuknow.co.uk

Age-related help and advice about on- and offline relationships and consent.



Drugs and alcohol

YSmart—ysmart.org.uk 01271 388162

Information about substance misuse, advice, recovery and treatment

Homeless, skills, advice, getting your voice heard

**Young Devon—www.youngdevon.org 01392
331 666**



Mental Health and well-being

Samaritans—www.samaritans.org

Call 116 123 for emergency help

Email jo@samaritans.org (response within 24 hours)

Papyrus—papyrus-uk.org 0800 068 41 41

Urgent help for you or someone you know

YoungMinds—youngminds.org.uk

Text YM to 85258 for urgent help

Happy Maps—www.happymaps.co.uk

Advice on everything from sleep problems to anxiety, bullying, self-harm, coping with divorce, autism, ADHD, gender dysphoria and more

Kooth—www.kooth.com



LGBT

X-PLORE—www.lgbtqyouthdevon.org.uk

Local support and groups for LGBTQ young people

If someone's life is at risk, you should always dial

999