



Year 10 – 100% Book 2 Spring 2024

NAME	
FORM GROUP	



The Science of Learning

How to do Retrieval Practice

1. Study the material you are trying to learn first. Take about 20 minutes the first time BUT this will get less and less each time as you get to know the material.

You can study the material by;

- Reading it again, over and over
- Look/cover/write/check
- Creating flashcards that you test yourself on

2. Pick up and use a **black pen**.
Put away all the answers and test yourself writing everything you remember in the blank spaces provided. Do not cheat!

3. Now pick up and use a **green pen**.

Check your answers:-

- Tick all of your correct answers
- Amend any incorrect answers (even if they are slightly wrong)
- Fill in any blank spaces with the correct answer copying the answer word for word
- Check all spellings are correct

4. Repeat the process as many times as you need to, pay special attention to your previous green pen answers (as these are the bits you need to learn!)

5. *Tip:- Lay blank pieces of paper over the answers in order to re-use the quiz again and again*

Tip: - Even if you think you know it test yourself a week or so later to check you do.

Tip: - Do not leave it until the last minute – do some every week in the summer holidays (this is called Spaced Practice)

Tip: - Once you think you know it test yourself on everything AGAIN

Retrieval practice feels hard but it is a really effective way to learn and commit knowledge to long term memory!

ENGLISH: Power and Conflict Poetry 1

Remains by Simon Armitage		Exposure by Wilfred Owen		Poppies by Jane Weir	
Themes: Conflict, Suffering, Reality of War		Themes: Conflict, Suffering, Nature, Reality of War, Patriotism		Themes: Bravery, Reality of War, Suffering, Childhood	
Tones: Tragic, Haunting, Anecdotal		Tones: Tragic, Haunting, Dreamy		Tones: Tender, Tragic, Dreamy, Bitter	
<p>Content, Meaning and Purpose</p> <ul style="list-style-type: none"> -Written to coincide with a TV documentary about those returning from war with PTSD. Based on Guardsman Tromans, who fought in Iraq in 2003. -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. 	<p>Context</p> <ul style="list-style-type: none"> -These are poems of survivors – the damaged, exhausted men who return from war in body but never, wholly, in mind." <i>Simon Armitage</i> -Poem coincided with increased awareness of PTSD amongst the military, and aroused sympathy amongst the public – many of whom were opposed to the war. 	<p>Content, Meaning and Purpose</p> <ul style="list-style-type: none"> -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. 	<p>Context</p> <ul style="list-style-type: none"> -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". -Despite highlighting the tragedy of war and mistakes of senior commanders, he had a deep sense of duty: "not loath, we lie out here" shows that he was not bitter about his suffering. 	<p>Content, Meaning and Purpose</p> <ul style="list-style-type: none"> -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 his death. -The narration covers her visit to a war memorial, interspersed with images of the soldier's childhood and his departure for war. 	<p>Context</p> <ul style="list-style-type: none"> -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 of the military: "a blockade of yellow bias" and "intoxicated".
<p>Language</p> <ul style="list-style-type: none"> -"Remains" - the images and suffering remain. -"Legs it up the road" - colloquial language = authentic voice -"Then he's carted off in the back of a lorry" – reduction of humanity to waste or cattle -"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" – alludes to Macbeth. Macbeth the warrior with PTSD and Lady Macbeth's bloody hands and guilt. 	<p>Form and Structure</p> <ul style="list-style-type: none"> -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. -Enjambment between lines and stanzas conveys his conversational tone and gives it a fast pace, especially when conveying the horror of the killing -Repetition of "Probably armed, Possibly not" conveys guilt and bitterness. 	<p>Language</p> <ul style="list-style-type: none"> -"Our brains ache" physical (cold) suffering and mental (PTSD or shell shock) suffering. -Semantic field of weather: weather is the enemy. -"the merciless iced east winds that knife us..." – personification (cruel and murderous wind); sibilance (cutting/slicing sound of wind); ellipsis (never-ending). -Repetition of pronouns "we" and "our" – conveys togetherness and collective suffering of soldiers. -"mad gusts tugging on the wire" – personification 	<p>Form and Structure</p> <ul style="list-style-type: none"> -Contrast of Cold>Warm>Cold imagery conveys Suffering>Delusions>Death of the hypothermic soldier. -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. -Pararhymes (half rhymes) ("nervous / knife us") only barely hold the poem together, like the men. 	<p>Language</p> <ul style="list-style-type: none"> -Contrasting semantic fields of home/childhood ("cat hairs", "play at being Eskimos", "bedroom") with war/injury ("blockade", "bandaged", "reinforcements") -Aural (sound) imagery: "All my words flattened, rolled, turned into felt" shows pain and inability to speak, and "I listened, hoping to hear your playground voice catching on the wind" shows longing for dead son. -"I was brave, as I walked with you, to the front door": different perspective of bravery in conflict. 	<p>Form and Structure</p> <ul style="list-style-type: none"> -This is an Elegy, a poem of mourning. -Strong sense of form despite the free verse, stream of consciousness addressing her son directly – poignant -No rhyme scheme makes it melancholic -Enjambment gives it an anecdotal tone. -Nearly half the lines have caesura – she is trying to hold it together, but can't speak fluently as she is breaking inside. -Rich texture of time shifts, and visual, aural and touch imagery.
Charge of the Light Brigade by Alfred, Lord Tennyson		Bayonet Charge by Ted Hughes		War Photographer	
Themes: Conflict, Suffering, Reality of War, Patriotism		Themes: Conflict, Power, Reality of War, Nature, Bravery, Patriotism		Themes: Conflict, Suffering, Reality of War	
Tones: Energetic, Tragic, Haunting		Tones: Bewildered, Desperate, Dreamy		Tones: Painful, Detached, Angry	
<p>Content, Meaning and Purpose</p> <ul style="list-style-type: none"> -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. 	<p>Context</p> <ul style="list-style-type: none"> -As Poet Laureate, he had a responsibility to inspire the nation and portray the war in a positive light: propaganda. -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". -This was a controversial point to make in Victorian times when blind devotion to power was expected. 	<p>Content, Meaning and Purpose</p> <ul style="list-style-type: none"> -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. -Hughes dramatises the struggle between a man's thoughts and actions. 	<p>Context</p> <ul style="list-style-type: none"> -Published in 1957, but most-likely set in World War 1. -Hughes' father had survived the battle of Gallipoli in World War 1, and so he may have wished to draw attention to the hardships of trench warfare. -He draws a contrast between the idealism of patriotism and the reality of fighting and killing. ("King, honour, human dignity, etcetera") 	<p>Content, Meaning and Purpose</p> <ul style="list-style-type: none"> -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. 	<p>Context</p> <ul style="list-style-type: none"> -Like Tennyson and Ted Hughes, Duffy was the Poet Laureate. -Duffy was inspired to write this poem by her friendship with a war photographer. She was intrigued by the challenge faced by these people whose job requires them to record terrible, horrific events without being able to directly help their subjects. -The location is ambiguous and therefore universal: ("Belfast. Beirut. Phnom Penh.")
<p>Language</p> <ul style="list-style-type: none"> -"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. -"shot and shell": sibilance creates whooshing sounds of battle. 	<p>Form and Structure</p> <ul style="list-style-type: none"> -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. -Dactylic dimeter (HALF-a league / DUM-de-de) mirrors the sound of horses galloping and increases the poem's pace. -Repetition of "the six hundred" at the end of each stanza (epistrophe) emphasises huge loss. 	<p>Language</p> <ul style="list-style-type: none"> -"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. -"his foot hung like statuary in midstride": he is frozen with fear/bewilderment. The caesura (full stop) jolts him back to reality. -"a yellow hare that rolled like a flame And crawled in a threshing circle": impact of war on nature – the hare is distressed, just like the soldiers 	<p>Form and Structure</p> <ul style="list-style-type: none"> -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. 	<p>Language</p> <ul style="list-style-type: none"> -"All flesh is grass": Biblical reference that means all human life is temporary – we all die eventually. -"He has a job to do": like a soldier, the photographer has a sense of duty. -"running children in a nightmare heat": emotive imagery with connotations of hell. -"blood stained into a foreign dust": lasting impact of war – links to Remains and 'blood shadow'. -"he earns a living and they do not care": 'they' is ambiguous – it could refer to readers or the wider world. 	<p>Form and Structure</p> <ul style="list-style-type: none"> -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.

ENGLISH: Power and Conflict Poetry 2

Kamikaze by Beatrice Garland Themes: Conflict, Power, Patriotism, Shame, Nature, Childhood Tones: Sorrowful, Pitiful		The Emigree by Carol Rumens Themes: Conflict, Power, Identity, Protest, Bravery, Childhood Tones: Mournful, Defiant, Nostalgic		Checking Out Me History by John Agard Themes: Power, Protest, Identity, Childhood Tones: Defiant, Angry, Rebellious, Cynical	
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.		Content, Meaning and Purpose -'Emigree' – a female who is forced to leave their country 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.		Content, Meaning and Purpose -Represents the voice of a man from the Caribbean colony of British Guiana, who was frustrated by the Eurocentric history 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.	
Context -Cowardice or surrender was a great shame in wartime Japan. -To surrender meant shame for you and your family, and rejection by society: "he must have wondered which had been the better way to die" .		Context -Emigree was published in 1993. The home country of the speaker is not revealed – this ambiguity gives the poem a timeless relevance. -Increasingly relevant to many people in current world climate		Context -John Agard was born in the Caribbean in 1949 and moved to the UK in the 1970s. -His poetry challenge racism and prejudice. -This poem may, to some extent, have achieved its purpose: in 2016, a statue was erected in London in honour of Mary Seacole, one of the subjects of the poem.	
Language -The Japanese word 'kamikaze' means 'divine wind' or 'heavenly wind', and has its origin in a heaven-sent storm that scattered an invading fleet in 1250. -"dark shoals of fish flashing silver": image links to a Samurai sword – conveys the conflict between his love for nature/life and his sense of duty. Also has sibilance. -"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.		Language -"I left it as a child": ambiguous meaning – either she left when she 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"		Language -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 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 jet 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. -Direct speech ("My mother never spoke again") gives the poem a personal tone.		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.		Form -Dramatic monologue, with a dual structure. -Stanzas concerning Eurocentric history (normal font) are interspersed with stanzas on black history (in italics 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 Themes: Power of Nature, Decay, Pride Tones: Ironic, rebellious		My Last Duchess by Robert Browning Themes: Power, Pride, Control, Jealousy, Status Tones: Sinister, Bitter, Angry		Tissue by Imtiaz Dharker Themes: Power of Nature, Control, Identity Tones: Gentle, Flowing, Ethereal	
Content, Meaning and Purpose -The narrator meets a traveller who tells him about a decayed statue 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 one big 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.		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. -He is now alone as a result of his need for control. -The visitor has come to arrange the Duke's next marriage, and the Duke's story is a subtle warning about how he expects his next wife to behave.		Content, Meaning and Purpose -Two different meanings of 'Tissue' (homonyms) 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.	
Context -Shelley was a poet of the 'Romantic period' (late 1700s and early 1800s). Romantic poets were interested in emotion and the power of nature. -Shelley also disliked the concept of a monarchy and the oppression of ordinary people. -He had been inspired by the French revolution – when the French monarchy was overthrown.		Context -Browning was a British poet, and lived in Italy. The poem was published in 1842. -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.		Context -Imtiaz Dharker was born in Pakistan and grew up in Glasgow. 'Tissue' is taken from a 2006 collection of poems entitled 'The Terrorist at My Table': the collection questions how well we know people around us. -This particular poem also questions how well we understand ourselves and the fragility of humanity.	
Language -'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.": 'Look' = imperative, stressed syllable highlights commanding tone; -ironic – he is telling other 'mighty' kings to admire the size of his statue and 'despair', however they should really despair because power is only temporary. -"The lone and level sands stretch far away.": the desert is vast, lonely, and lasts far longer than a statue.		Language -"Looking as if she was alive": sets a sinister tone. -"Will't please you sit and look at her?" rhetorical question to his visitor shows obsession with power. -"she liked white'er / She looked on, and her looks went everywhere.": hints that his wife was a flirt. -"as if she ranked / My gift of a nine-hundred-years-old name / With anybody's gift": she was beneath him in status, and yet dared to rebel against his authority. -"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.		Language -Semantic field of light: ("Paper that lets light shine through", "The sun shines through their borderlines", "let the daylight break through capitals and monoliths") emphasises that light is central to life, a positive and powerful force that can break through 'tissue' and even monoliths (stone statues). -"pages smoothed and stroked and turned": gentle verbs convey how important documents such as the Koran are treated with respect. -"Fine slips [...] might fly our lives like paper kites": this simile suggests that we allow ourselves to be controlled by paper.	
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. -The iambic pentameter rhyme scheme is also disrupted or decayed. -First eight lines (the octave) of the sonnet: the statue is described in parts to show its destruction. -Final two lines: the huge and immortal desert is described to emphasise the insignificance of human power and pride.		Form and Structure -Dramatic Monologue, in iambic pentameter. -It is a speech, pretending to be a conversation – he doesn't allow the other person to speak! -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" -Dramatic Irony: the reader can read between the lines and see that the Duke's comments have a much more sinister undertone.		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. -All stanzas have four lines, except the final stanza which has one line ("turned into your skin"): this line focuses on humans, and addresses the reader directly to remind us that we are all fragile and temporary. -Enjambment between lines and stanzas creates an effect of freedom and flowing movement.	

ENGLISH: Power and Conflict Poetry 3

Extract from The Prelude: Stealing the Boat by William Wordsworth		Storm on the Island by Seamus Heaney		London by William Blake					
Themes: Power of Nature, Fear, Childhood		Themes: Power of Nature, Fear		Themes: Power, Inequality, Loss, Anger					
Tones: Confident > Dark / Fearful > Reflective		Tones: Dark, Violent, Anecdotal		Tones: Angry, Dark, Rebellious					
Content, Meaning and Purpose -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. -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. -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.' -We should respect nature and not take it for granted.	Context -Published shortly after his death, The Prelude was a very long poem (14 books) that told the story of William Wordsworth's life. -This extract is the first part of a book entitled 'Introduction – Childhood and School-Time'. -Like Percy Shelley, Wordsworth was a romantic poet and so his poetry explores themes of nature, human emotion and how humans are shaped by their interaction with nature.	Content, Meaning and Purpose -The narrator describes how a rural island community prepared for a coming storm, and how they were confident in their preparations. -When the storm hits, they are shocked by its power: its violent sights and sounds are described, using the metaphor of war. -The final line of the poem reveals their fear of nature's power	Context -Seamus Heaney was Northern Irish, he died in 2013. -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. -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.	Content, Meaning and Purpose -The narrator is describing a walk around London and how he is saddened by the sights and sounds of poverty. -The poem also addresses the loss of innocence and the determinism of inequality: how new-born infants are born into poverty. -The poem uses rhetoric (persuasive techniques) to convince the reader that the people in power (landowners, Church, Government) are to blame for this inequality.	Context -The poem was published in 1794, and time of great poverty is many parts of London. -William Blake was an English poet and artist. Much of his work was influenced by his radical political views: he believed in social and racial equality. -This poem is part of the 'Songs of Experience' collection, which focuses on how innocence is lost and society is corrupt. -He also questioned the teachings of the Church and the decisions of Government.				
Language -'One summer evening (led by her)': 'her' might be nature personified – this shows his love for nature. -'an act of stealth / And troubled pleasure': confident, but the oxymoron suggests he knows it's wrong; forebodes the troubling events that follow. -'nothing but the stars and grey sky': emptiness of sky. -'the horizon's bound, a huge peak, black and huge': the image of the mountain is more shocking (contrast). -'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. -'There hung a darkness': lasting effects of mountain.	Form and Structure -First person narrative – creates a sense that it is a personal poem. -The regular rhythm and enjambment add to the effect of natural speech and a personal voice. -The extract can be split into three sections, each with a different tone to reflect his shifting mood: Lines 1-20: (rowing) carefree and confident Lines 21-31: (the mountain appears) dark and fearful Lines 32-44: (following days) reflective and troubled -Contrasts in tone: 'lustily I dipped my oars into the silent lake' versus 'I struck and struck again' and 'with trembling oars I turned'.	Language -'Nor are there trees which might prove company': the island is a lonely, barren place. -Violent verbs are used to describe the storm: 'pummets', 'exploding', 'spits'. -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). -This also reinforces the metaphor of war / troubles. -'spits like a tame cat turned savage': simile compares the nature to an animal that has turned on its owner.	Form and Structure -Written in blank verse and with lots of enjambment: this creates a conversational and anecdotal tone. -'We' (first person plural) creates a sense of community, and 'You' (direct address) makes the reader feel immersed in the experience. -The poem can split into three sections: Confidence: 'We are prepared': (ironic) The violence of the storm: 'It pummets your house' Fear: 'it is a huge nothing that we fear.' -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.	Language -Sensory language creates an immersive effect: visual imagery ('Marks of weakness, marks of woe') and aural imagery ('cry of every man') -'mind-forged manacles': they are trapped in poverty. -Rhetorical devices to persuade: repetition ('In every...'); emotive language ('infant's cry of fear'). -Criticises the powerful: 'each chartered street' – everything is owned by the rich; '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.	Form and Structure -A dramatic monologue, there is a first-person narrator ('I') who speaks passionately about what he sees. -Simple ABAB rhyme scheme: reflects the unrelenting misery of the city, and perhaps the rhythm of his feet as he trudges around the city. -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.				
Key themes and connections: poems that you might choose to compare		Language for comparison		Poetic Techniques					
		When poems have similarities Similarly, ... Both poems convey / address... Both poems explore / present... This idea is also explored in... In a similar way, ... Likewise, ...		Assessment Objectives Ensure that your answer covers all of these areas: AO1 <ul style="list-style-type: none"> Write a response related to the key word in the question. Use comparative language to explore both poems. Use a range of evidence to support your response and to show the meaning of the poems. AO2 <ul style="list-style-type: none"> Comment on the effect of the language in your evidence, including individual words. Identify any use of poetic techniques and explain their effects. AO3 <ul style="list-style-type: none"> What might the poet's intentions have been when they wrote the poem? Comment on the historical context – when was the poem published and what impact might it have had then, and today? 		LANGUAGE Metaphor – comparing one thing to another Simile – comparing two things with 'like' or 'as' Personification – giving human qualities to the non-human Imagery – language that makes us imagine a sight (visual), sound (aural), touch (tactile), smell or taste. Tone – the mood or feeling created in a poem. Pathetic Fallacy – giving emotion to weather in order to create a mood within a text. Irony – language that says one thing but implies the opposite eg. <i>sarcasm</i> . Colloquial Language – informal language, usually creates a conversational tone or authentic voice. Onomatopoeia – language that sounds like its meaning. Alliteration – words that are close together start with the same letter or sound. Sibilance – the repetition of <i>s</i> or <i>sh</i> sounds. Assonance – the repetition of similar vowel sounds Consonance – repetition of consonant sounds. Plosives – short burst of sound: <i>t, k, p, d, g, or b</i> sound.		STRUCTURE Stanza – a group of lines in a poem. Repetition – repeated words or phrases Enjambment – a sentence or phrase that runs onto the next line. Caesura – using punctuation to create pauses or stops. Contrast – opposite concepts/feelings in a poem. Juxtaposition – contrasting things placed side by side. Oxymoron – a phrase that contradicts itself. Volta – a turning point in a poem. FORM Speaker – the narrator, or person in the poem. Free verse – poetry that doesn't rhyme. Blank verse – poem in iambic pentameter, but with no rhyme. Sonnet – poem of 14 lines with clear rhyme scheme. Rhyming couplet – a pair of rhyming lines next to each other. Meter – arrangement of stressed/unstressed syllables. Monologue – one person speaking for a long time.	

SCIENCE 1

C4 – Quantitative chemistry

1. What is the conservation of mass?	In a chemical reaction, atoms are not created or destroyed, just rearranged. Total mass before = total mass after the reaction.
2. When a metal forms a metal oxide, why does the mass increase?	Atoms from gaseous oxygen have been added.
3. When an acid reacts with a metal, why does the mass decrease?	A gas is produced and escapes.
4. What is relative formula mass?	The sum of the relative atomic masses of each atom in a substance.
5. What are the four state symbols and what do they stand for?	(s) Solid, (l) liquid, (g) gas, (aq) aqueous (meaning dissolved in water).
6. How can you tell when a symbol equation is balanced?	The number of atoms of each element is the same on both sides.
7. What is a mole?	Mass of a substance that contains 6.02×10^{23} particles.
8. Give the value for the Avogadro constant.	6.02×10^{23}
9. Which formula is used to calculate the number of moles from mass or M_r ?	$\text{moles} = \frac{\text{mass}}{M_r}$
10. Which formula is used to calculate the mass of a substance from number of moles and M_r ?	$\text{Mass} = \text{moles} \times M_r$
11. What is a limiting reactant?	The reactant that is completely used up in a chemical reaction.
12. What is a unit for concentration?	g/dm^3
13. Which formula is used to calculate concentration from mass and volume?	$\text{Concentration (g/dm}^3\text{)} = \frac{\text{mass (g)}}{\text{Volume (dm}^3\text{)}}$
14. Which formula is used to calculate volume from concentration and mass?	$\text{Volume (dm}^3\text{)} = \frac{\text{mass (g)}}{\text{Concentration (g/dm}^3\text{)}}$
15. Which formula is used to calculate mass from concentration in g/dm^3 and volume?	$\text{Mass (g)} = \text{concentration (g/dm}^3\text{)} \times \text{volume (dm}^3\text{)}$
16. How can you convert a volume reading in cm^3 to dm^3 ?	Divide by 1000
17. If the amount of solute in a solution is increased, what happens to its concentration?	Increases
18. If the volume of water in a solution is increased, what happens to its concentration?	Decreases

SCIENCE 2

C5 – Reactions of metals

1. What does reactivity mean?	How vigorously a substance chemically reacts
2. How can metals be ordered by their reactivity?	By comparing their reactions with water, acid, or oxygen
3. What name is given to a list of metals ordered by their reactivity?	Reactivity series
4. In terms of electrons, what makes some metals more reactive than others?	They lose their outer shell electron(s) more easily
5. Why are gold and silver found naturally as elements in the Earth's crust?	They are very unreactive
6. What is an ore?	Rock containing enough metal compound to be economically worth extracting
7. How are metals less reactive than carbon extracted from their ores?	Reduction with carbon
8. In terms of oxygen, what is oxidation?	Addition of oxygen
9. In terms of oxygen, what is reduction?	Removal of oxygen
10. Why can metals like potassium and aluminium not be extracted by reduction with carbon?	They are more reactive than carbon
11. How are metals more reactive than carbon extracted from their ores?	Electrolysis
12. What is a displacement reaction?	When a more reactive substance takes the place of a less reactive substance in a compound
13. What is an ionic equation?	Equation which gives some substances as ions and has spectator ions removed
14. What type of substance is given as ions in an ionic equation?	Ionic compounds in solution (or liquid)
15. What is a spectator ion?	Ion that is unchanged in a reaction
16. What is a half equation?	Equation that shows whether a substance is losing or gaining electrons
17. In terms of electrons, what is oxidation?	Loss of electrons
18. In terms of electrons, what is reduction?	Gain of electrons

SCIENCE 3

C6 – Reactions of acids

1. In terms of pH, what is an acid	A solution with a pH of less than 7
2. In terms of pH, what is a neutral solution?	A solution with a pH of 7
3. In terms of H ⁺ ions, what is an acid?	A substance that releases H ⁺ ions when dissolved in water
4. What are the names and formulae of the three main acids?	Hydrochloric acid, HCl Sulfuric acid, H ₂ SO ₄ Nitric acid, HNO ₃
5. How do you measure the pH of a substance?	Universal indicator or pH probe
6. What is a strong acid?	An acid where the molecules completely ionise in water
7. What is a weak acid?	An acid where the molecules partially ionise in water
8. What is a salt?	A compound formed when a metal ion takes the place of a hydrogen ion in an acid
9. Which type of salts do hydrochloric acid, sulfuric acid and nitric acid form?	Chlorides, sulfates and nitrates, respectively
10. What are the products of a reaction between a metal and an acid?	Salt + hydrogen
11. What are the products of a reaction between a metal hydroxide and an acid?	Salt + water
12. What are the products of a reaction between a metal carbonate and an acid?	Salt + water + carbon dioxide
13. What is a base?	A substance that reacts with acids in neutralisation reactions
14. What is an alkali?	A substance that dissolves in water to form a solution above pH 7
15. What is a neutralisation reaction?	A reaction between an acid and a base to produce water
16. What is the ionic equation for a reaction between an acid and an alkali?	$H^+ (aq) + OH^- (aq) \rightarrow H_2O (l)$
17. How can you obtain a solid salt from a solution?	Crystallisation
18. When an acid reacts with a metal, which species is oxidised?	The metal
19. When an acid reacts with a metal, which species is reduced?	Hydrogen

SCIENCE 4

C7 – Electrolysis

1. What is electrolysis?	The process of using electricity to extract elements from a compound
2. What is the name of the positive electrode?	Anode
3. What is the name of the negative electrode?	Cathode
4. What is an electrolyte?	A liquid or solution that contains ions and so can conduct electricity
5. Where are metals formed?	Cathode
6. Where are non-metals formed?	Anode
7. How can ionic substances be electrolysed?	By melting or dissolving them, and then passing a direct current through them
8. Why can solid ionic substances not be electrolysed?	They do not conduct electricity, or the ions cannot move
9. In the electrolysis of solutions, when is the metal not produced at the cathode?	When the metal is more reactive than hydrogen
10. In the electrolysis of a metal halide solution, what is produced at the anode?	Halogen gas
11. In the electrolysis of a metal sulfate solution, what is produced at the anode?	Oxygen
12. What is the half equation for the ionisation of water?	$\text{H}_2\text{O} (\text{l}) \rightarrow \text{H}^+ (\text{aq}) + \text{OH}^- (\text{aq})$
13. What metals are extracted from ionic compounds by using electrolysis?	Metals that are more reactive than carbon
14. In the electrolysis of aluminium oxide, why is the aluminium oxide mixed with molten cryolite?	To lower the melting point
15. In the electrolysis of aluminium oxide, what are the anodes made of?	Graphite
16. In the electrolysis of aluminium oxide, why do the anodes need to be replaced?	They react with the oxygen being formed

SCIENCE 5

C8 – Energy Changes

1. What is an exothermic energy transfer?	Energy transfer to the surroundings
2. What is an endothermic energy transfer?	Energy transfer from the surroundings
3. What is a reaction profile?	A diagram showing how the energy changes in a reaction
4. What is activation energy?	The minimum amount of energy required before a collision will result in a reaction
5. What is a bond energy?	The energy required to break a bond or the energy released when a bond is formed
6. In terms of bond breaking and making, what is an exothermic reaction?	Less energy is required to break the old bonds than is released when making the new bonds
7. In terms of bond breaking and making, what is an endothermic reaction?	More energy is required to break the old bonds than is released when making the new bonds

SCIENCE 6

B10 – Photosynthesis

1. Where does photosynthesis occur?	Chloroplasts in the leaves of a plant
2. What is the name of the green pigment in the leaves?	Chlorophyll
3. What type of reaction is photosynthesis?	Endothermic
4. What type of energy is used in photosynthesis?	Light energy
5. Give the work equation for photosynthesis.	Carbon dioxide + water → glucose + oxygen
6. Give the balanced symbol equation for photosynthesis.	$6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
7. Define the term limiting factor.	Anything that limits the rate of a reaction when it is in short supply.
8. Give the limiting factors of photosynthesis.	<ul style="list-style-type: none"> • Temperature • Carbon dioxide concentration • Light intensity • Amount of chlorophyll
9. Describe how light intensity affects the rate of photosynthesis.	Increasing carbon dioxide concentration increases the rate of photosynthesis until another factor becomes limiting.
10. Describe how carbon dioxide concentration affects the rate of photosynthesis.	Increasing carbon dioxide concentration increases the rate of photosynthesis until another factor becomes limiting.
11. Describe how temperature affects the rate of photosynthesis.	Increasing temperature increases the rate of photosynthesis as the reaction rate increases – at high temperatures enzymes are denatured so the rate of photosynthesis quickly decreases.
12. Give the equation for the inverse square law for light intensity.	light intensity $\propto \frac{1}{\text{distance}^2}$
13. Why are limiting factors important in the economics of growing plants in greenhouses?	Greenhouses need to produce the maximum rate of photosynthesis whilst making profit
14. How do plants use the glucose produced in photosynthesis?	<ul style="list-style-type: none"> • Respiration • Convert it into insoluble starch for storage • Produce fat or oil for storage • Produce cellulose to strengthen cell walls • Produce amino acids for protein synthesis

SCIENCE 7

B11 – Respiration

1. Define the term cellular respiration.	An exothermic reaction that occurs continuously in the mitochondria of living cells to release energy from glucose.
2. What do organisms need energy for?	<ul style="list-style-type: none">• Chemical reactions to build larger molecules• Muscle contraction for movement• Keeping warm
3. What is the difference between aerobic and anaerobic respiration?	Aerobic respiration uses oxygen, anaerobic respiration does not.
4. Write the word equation for aerobic respiration.	Glucose + oxygen → carbon dioxide + water
5. Write the word equation for anaerobic respiration in muscles.	Glucose → lactic acid
6. Write the balanced symbol equation for aerobic respiration.	$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$
7. Why does aerobic respiration release more energy per glucose molecule than anaerobic respiration?	Oxidation of glucose is complete in aerobic respiration and incomplete in anaerobic respiration.
8. What is anaerobic respiration in yeast cells called?	Fermentation
9. Write the word equation for anaerobic respiration in yeast cells.	Glucose → ethanol + carbon dioxide
10. How does the body supply the muscles with more oxygenated blood during exercise?	Heart rate, breathing rate and breath volume increases
11. What substance builds up in the muscles during anaerobic respiration?	Lactic acid
12. What happens to muscles during long periods of activity?	Muscles become fatigued and stop contracting efficiently
13. What is oxygen debt?	Amount of oxygen the body needs after exercise to react with the accumulated lactic acid and remove it from cells.
14. How is lactic acid removed from the body?	Lactic acid in muscles → blood transports to the liver → lactic acid converted back to glucose
15. What is metabolism?	Sum of all the reactions in a cell of the body.

SCIENCE 8

B12 – The nervous system and homeostasis

1. What is homeostasis?	Maintenance of a constant internal environment.
2. Why is homeostasis important?	Maintains optimal conditions for cell and organ function and enzyme activity.
3. Give three internal conditions controlled in homeostasis?	Body temperature Blood glucose concentration Water levels
4. Give three things that all control systems include.	Receptors, coordination centres, effectors
5. Name three coordination centres.	Brain, spinal cord, pancreas.
6. Name two types of effector.	Muscles and glands.
7. What is the function of the nervous system?	Enables organisms to react to their surroundings and coordinates behaviour.
8. What are the two parts of the central nervous system?	Brain and spinal cord.
9. Why are reflex actions rapid and automatic?	They do not involve the conscious part of the brain.
10. Why are reflex actions important?	For survival and to prevent damage to the body.
11. Give the pathway of a nervous response.	Stimulus → receptor → coordinator → effector → response.
12. What is a stimulus?	A change in the internal or external environment.
13. What is a synapse?	A junction between two neurones where chemicals are released, allowing impulses to cross.
14. What is the function of neurones?	Carry electrical impulses around the body.

SCIENCE 9

B13 – Hormonal coordination

1. What is the endocrine system?	A system of glands that secrete hormones into the bloodstream.
2. How do the effects of the endocrine system compare to those of the nervous system?	Endocrine system effects are slower, but act for longer.
3. Where is the pituitary gland located?	The brain.
4. Which organ monitors and controls blood glucose concentration?	The pancreas.
5. Which hormones interact to regulate blood glucose levels?	Insulin and glucagon
6. What is the cause of Type 1 diabetes?	Pancreas does not produce enough insulin.
7. What is the cause of Type 2 diabetes?	Body cells no longer respond to insulin.
8. What is the function of FSH?	Causes eggs to mature in the ovaries and stimulates the ovaries to produce oestrogen.
9. What is the function of LH?	Stimulates the release of an egg.
10. What is the function of oestrogen?	Causes the lining of the uterus wall to thicken.
11. What are the methods of hormonal contraception?	Oral contraceptives, injection, implant, skin patch, IUD.
12. What are the methods of non-hormonal contraception?	Barrier methods, copper IUD, spermicidal agents, sterilisation, abstinence.
13. State the disadvantages of IVF treatment.	Emotionally and physically stressful. Low success rate. Can lead to risky, multiple births.
14. What is the function of adrenaline in the body?	Increases heart rate and boosts delivery of oxygen and glucose to the brain and muscles to prepare the body for "fight or flight".
15. What is the function of thyroxine in the body?	Stimulates basal metabolic rate, so is important for growth and development.
16. Name one hormone controlled by negative feedback.	Thyroxine.
17. Which endocrine glands control secondary sexual characteristics?	Ovaries in females, testes in males.

What is Urbanisation?

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

Where is Urbanisation happening?

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

Year	World	High Income Economies (HICs)	Newly Emerging Economies (NEEs)	Africa	Asia	Latin America and the Caribbean
1950	~30	~60	~20	~15	~25	~35
2000	~45	~70	~30	~20	~35	~45
2050	~60	~80	~50	~30	~45	~55

Causes of Urbanisation

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

Push	Pull
<ul style="list-style-type: none"> Natural disasters War and Conflict Mechanisation <ul style="list-style-type: none"> Drought Lack of employment 	<ul style="list-style-type: none"> More Jobs Better education & healthcare Increased quality of life. Following family members.

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

Increase in birth rate (BR)	Lower death rate (DR)
<ul style="list-style-type: none"> High percentage of population are child-bearing age which leads to high fertility rate. Lack of contraception or education about family planning. 	<ul style="list-style-type: none"> Higher life expectancy due to better living conditions and diet. Improved medical facilities helps lower infant mortality rate.

Types of Cities

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

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

Sustainable Urban Living

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

Water Conservation	Energy Conservation
<p>This is about reducing the amount of water used.</p> <ul style="list-style-type: none"> Collecting rainwater for gardens and flushing toilets. Installing water meters and toilets that flush less water. Educating people on using less water. 	<p>Using less fossil fuels can reduce the rate of climate change.</p> <ul style="list-style-type: none"> Promoting renewable energy sources. Making homes more energy efficient. Encouraging people to use energy.
Creating Green Space	Waste Recycling
<p>Creating green spaces in urban areas can improve places for people who want to live there.</p> <ul style="list-style-type: none"> Provide natural cooler areas for people to relax in. Encourages people to exercise. Reduces the risk of flooding from surface runoff. 	<p>More recycling means fewer resources are used. Less waste reduces the amount that eventually goes to landfill.</p> <ul style="list-style-type: none"> Collection of household waste. More local recycling facilities. Greater awareness of the benefits in recycling.

Unit 2a AQA Urban Issues & Challenges

Sustainable Urban Living Example: Freiburg

Background & Location	Sustainable Strategies
<p>Freiburg is in west Germany. The city has a population of about 220,000. In 1970 it set the goal of focusing on social, economic and environmental sustainability.</p>	<ul style="list-style-type: none"> The city's waste water allows for rainwater to be retained. The use of sustainable energy such as solar and wind is becoming more important. 40% of the city is forested with many open spaces for recreation, clean air and reducing flood risk.

Integrated Transport System

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

Brownfield Site

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

Traffic Management

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

Environmental problems	Social Problems
<ul style="list-style-type: none"> Traffic increases air pollution which releases greenhouse gases that is leading to climate change. 	<ul style="list-style-type: none"> There is a greater risk of accidents and congestion is a cause of frustration. Traffic can also lead to health issues for pedestrians.
Economic problems	Congestion Solutions
<ul style="list-style-type: none"> Congestion can make people late for work and business deliveries take longer. This can cause companies to loose money. 	<ul style="list-style-type: none"> Widen roads to allow more traffic to flow easily. Build ring roads and bypasses to keep through traffic out of city centres. Introduce park and ride schemes to reduce car use. Encourage car-sharing schemes in work places. Have public transport, cycle lanes & cycle hire schemes. Having congestion charges discourages drivers from entering the busy city centres.

Traffic Management Example: Bristol

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

Greenbelt Area

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

Urban Regeneration

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

Urban Change in a Major UK City: Sheffield Case Study 

Location and Background	City's Importance
<p>Sheffield is a city in South Yorkshire in the North of England. The population of the city is 575,000, making it the fifth largest in the UK. The city grew during the industrial revolution.</p> 	<ul style="list-style-type: none"> The city enjoys a large sporting heritage with famous athletes and football clubs. Sheffield is famous for being described as the greenest city in Europe. Sheffield has a thriving community of international students. Sheffield has two major UK universities popular with young students. Fastest growing city outside of London.

Migration to Sheffield **City's Opportunities**

<p>During the industrial revolution, the population dramatically increased with people migrating from nearby rural communities.</p> 	<p>Social: Sheffield has various cultural attractions such as the Crucible Theatre & museums. Also Meadowhall is very popular with shoppers.</p>
<p>With the attraction of working in the large steelworks or mines, international migrants from Ireland, Pakistan and the Caribbean came to work in Sheffield from 1900-1960.</p>	<p>Economic: The retail sectors contribute to thousands of jobs. The Universities and advanced manufacturing contributes to the city's economy.</p>
<p>More recently, refugees have arrived from Syria and Iraq. Also Sheffield has attracted thousands of students from the UK & abroad.</p>	<p>Environmental: Sheffield is described as being the greenest city in Europe. It's close to the Peak District and has various open spaces (i.e. the Peace Garden) for residents to enjoy.</p>

City Challenges **Sheffield City Centre Regeneration Projects**

<p>Social: House prices have increased along with greater house shortages. A third of households live in the 10% of the most deprived wards in the UK.</p>	<p>Aims: Sheffield wanted to attract investment in more businesses and job opportunities. Also the projects aim to improve public spaces with more green urban environments.</p>
<p>Economic: Closure of the steelworks and factories caused large scale unemployment. Poor transport connections to large economic hubs such as London and Manchester.</p>	<p>Main features: Brownfield sites and derelict buildings pulled down, £50 million invested on its train station to improve connections, £120 million on green open spaces with the construction of the Winter Gardens and Peace Gardens, £430m to improve the retail quarter and attract shoppers away from Meadowhall.</p>
<p>Environmental: Urban sprawl has led to increased pressure and decline of greenfield sites around the city.</p>	



Urban Change in a Major NEE City: RIO DE JANEIRO Case Study 

Location and Background	City's Importance
<p>Rio is a coastal city situated in the South East region of Brazil within the continent of South America. It is the second most populated city in the country (6.5 million) after Sao Paulo.</p> 	<ul style="list-style-type: none"> Has the second largest GDP in Brazil It is headquarters to many of Brazil's main companies, particularly with Oil and Gas. Sugar Loaf mountain is world heritage site One of the most visited places in the Southern Hemisphere. Hosted the 2014 World Cup and 2016 Summer Olympics. Christ the Redeemer is a new 7 wonder.

Migration to Rio De Janeiro **City's Opportunities**

<p>The city began when Portuguese settlers with slaves arrived in 1502. Since then, Rio has become home to various ethnic groups.</p> 	<p>Social: Standards of living are gradually improving. The Rio Carnival is an important cultural event for traditional dancing and music.</p>
<p>However, more recently, millions of people have migrated from rural areas that have suffered from drought, lack of services and unemployment to Rio. People do this to search for a better quality of life.</p>	<p>Economic: Rio has one of the highest incomes per person in the country. The city has various types of employment including oil, retail and manufacturing.</p>
<p>This expanding population has resulted in the rapid urbanisation of Rio de Janeiro.</p>	<p>Environmental: The hosting of the major sporting events encouraged more investment in sewage works and public transport systems.</p>

City Challenges **Self-help schemes - Rocinha, Bairro Project**

<p>Social: There is a severe shortage of housing, schools and healthcare centres available. Large scale social inequality, is creating tensions between the rich and poor.</p>	<ul style="list-style-type: none"> The authorities have provided basic materials to improve peoples homes with safe electricity and sewage pipes. Government has demolished houses and created new estates. Community policing has been established, along with a tougher stance on gangs with military backed police. Greater investment in new road and rail network to reduce pollution and increase connections between rich and poor areas.
<p>Economic: The rise of informal jobs with low pay and no tax contributions. There is high employment in shanty towns called Favelas</p>	
<p>Environmental: Shanty towns called Favelas are established around the city, typically on unfavourable land, such as hills.</p>	



HISTORY 1

Reformation knowledge organiser

	Question	Answer
1	Why was the Church so powerful?	It was incredibly wealthy, everyone believed in God, and bishops were often influential ministers
2	What was a tithe?	A payment to the Church of 10% of someone's earnings
3	What was an indulgence?	Where people paid for the forgiveness of sins or for less time in purgatory
4	Who were the Lollards?	The Lollards were an early group who criticised the Church, arguing priests were not important aspects of religion
5	What was Humanism?	A movement that focused on studying ancient and classical texts. Humanists studied the Bible in its earliest forms.
6	Who started to criticise the Catholic Church in the 1520s?	European reformers such as Martin Luther and Huldrych Zwingli
7	What were Luther's criticisms of the Church?	He thought salvation came from faith alone, the Bible was the only religious authority, the Bible should be written in English, and that the Church should not be wealthy
8	How did Tyndale fund the publication of a Bible in English?	He received donations from wealthy London drapers
9	What institutions became hotbeds of ideas for Church reform?	The University of Oxford, The University of Cambridge and the Inns of Court
10	What was anticlericalism?	Hostility towards priests and other members of the clergy
11	What was pluralism?	Holding multiple church offices at once
12	Why is it difficult to tell how far ideas about Church reform affected ordinary people?	Because many would not have even been aware of the idea, and those who were would have feared being punished for heresy
13	Why did Henry want to divorce Catherine of Aragon?	He wanted a son, and fell in love with Anne Boleyn
14	Who blocked Henry's plan to divorce Catherine?	Pope Clement VII
15	Why did Henry accuse the priests of praemunire?	He claimed that they were appealing to a foreign power (i.e. the Pope) instead of him
16	What was the Act of Supremacy?	An act of Parliament confirming Henry's status as head of the Church of England
17	Why did the court oppose Henry in the 1530s?	Some nobles, such as Reginald Pole, sympathised with Catherine of Aragon. Most of those who opposed Henry, however, were executed
18	Why did the monasteries oppose Henry in the 1530s?	Monasteries opposed Henry because they were predominantly Catholic. The story of Elizabeth Barton inspired further opposition.
19	What was the oath of allegiance?	An oath of allegiance to Henry VIII as the Head of the Church
20	What was Valor Ecclesiasticus?	A survey of the wealth of the Church organised by Cromwell
21	What were the Visitations?	A survey of the spiritual health of the Church organised by Cromwell (he sent commissioners to uncover corruption)
22	Which monasteries did Henry VIII close first?	He first closed the smallest monasteries with an income of less than £200
23	How did Cromwell persuade the larger monasteries to 'voluntarily' dissolve?	He offered a generous pension to monks in monasteries that did dissolve, and accused the leaders of monasteries that would not dissolve of treason
24	How did Cromwell close the friaries?	He introduced strict rules that were impossible to follow. Those who could not reach the standards were fined.

HISTORY 2

25	What impact did the dissolution have on ordinary people?	Many people did not like the dissolution because monks could no longer pray for them or offer them charity
26	What impact did the dissolution have on the gentry?	Many gentry supported the dissolution as they were able to buy church lands for low prices, making them extremely wealthy
27	What were the Ten Articles?	The first official doctrine of the Church of England, it attacked purgatory but approved the cult of saints and religious images
28	What was the Lincolnshire Rising?	A rising of 40,000 men in northern England against the suppression of the monasteries
29	What was the Pilgrimage of Grace?	A protest led by Robert Aske in response to the dissolution of monasteries and unemployment
30	What were the Pontefract Articles?	A list of concerns drawn up by the leaders of the Pilgrimage of Grace to give to Henry VIII
31	What impact did the Pilgrimage of Grace have on monasticism?	The way Henry brutally crushed the protest put many people off of defending the monasteries, meaning they all eventually closed
32	Why did reforms to the Church slow down in the 1530s?	Anne Boleyn's fall from grace meant that Henry was no longer under the influence of the Protestant Boleyns
33	How did Henry's Church change in the 1540s?	It turned back towards Catholicism, reintroducing transubstantiation, confession and private masses
34	What was the Chantry Act of 1547?	An act that closed private chantries across England
35	What were the Royal Proclamations of 1548?	An act that ordered the removal of altars, sculptures and images from churches
36	What was the Book of Common Prayer?	A prayer book written by Thomas Cranmer that contained common prayers to be used in church services
37	How did Henry and Edward enforce their reforms to the Church?	They used a combination of propaganda and fear to ensure that their reforms were followed
38	What was iconoclasm?	The destruction of religious images
39	Why were members of the clergy cross-examined in the 1540s?	To check that their beliefs were in line with the reforms
40	What impact did Edward's reforms have on the Church?	Chantries were closed, images destroyed, saints were increasingly ignored
41	What caused the Prayer Book Rebellion?	People disliked the new Church services and wanted to return to Henry's practices
42	Which religious changes mattered most to ordinary people?	Those that affected their lives directly, such as changes to services or their local church
43	Why was preaching so important during the Reformation?	Preaching changed people's views more effectively than government propaganda
44	What was absenteeism?	People not attending church on Sundays
45	Why did the dissolution of the chantries impact ordinary people?	Chantries played an important role in contributing to the poor in local communities

SPANISH 1

Vocabulary 7 – SCHOOL SUBJECTS AND TEACHERS

01 ¿Qué asignaturas te gustan?	01 What subjects do you like?	21 Mi profesor de ciencias es	21 My science teacher (m) is
02 ¿Te interesa el español?	02 Are you interested in Spanish?	22 Mi profesora de inglés es	22 My English teacher (f) is
03 Me encanta el español	03 I love Spanish	23 más paciente que	23 more patient than
04 Me encantan los idiomas	04 I love languages	24 menos impaciente que	24 less impatient than
05 Me gusta el inglés	05 I like English	25 tan interesante como	25 as interesting as
06 Me gustan las ciencias	06 I like science	26 joven	26 young
07 Odio el arte dramático	07 I hate drama	27 viejo/a	27 old
08 Prefiero las matemáticas	08 I prefer maths	28 severo/a	28 strict
09 el dibujo	09 art / drawing	29 tolerante	29 easy-going
10 la biología	10 biology	30 aburrido/a	30 boring
11 la educación física	11 PE	31 gracioso/a	31 funny
12 la física	12 physics	32 serio/a	32 serious
13 la geografía	13 geography	33 simpático/a	33 nice / kind / friendly
14 la historia	14 history	34 antipático/a	34 unkind / unfriendly
15 la informática	15 ICT	35 divertido/a	35 fun
16 la lengua	16 language	36 creativo/a	36 creative
17 la química	17 chemistry	37 mejor que	37 better than
18 la religión	18 RE	38 peor que	38 worse than
19 la tecnología	19 technology	39 explica bien	39 he/she explains well
20 las empresariales	20 business studies	40 tiene buen sentido del humor	40 has a good sense of humour

Vocabulary 8 – SCHOOL UNIFORM

01 Llevo	01 I wear	21 amarillo/a	21 yellow
02 No llevo	02 I don't wear	22 blanco/a	22 white
03 Llevamos	03 We wear	23 negro/a	23 black
04 No llevamos	04 We don't wear	24 rojo/a	24 red
05 Tengo que llevar	05 I have to wear	25 morado / violeta	25 purple
06 Tenemos que llevar	06 We have to wear	26 naranja	26 orange
07 un jersey	07 a sweater	27 rosa	27 pink
08 un vestido	08 a dress	28 azul claro	28 light blue
09 una camisa	09 a shirt	29 azul oscuro	29 dark blue
10 una chaqueta	10 a jacket	30 verde	30 green
11 una corbata	11 a tie	31 gris	31 grey
12 una falda	12 a skirt	32 marrón	32 brown
13 unos pantalones	13 trousers	33 El uniforme	33 The uniform
14 unos calcetines	14 socks	34 mejora la disciplina	34 improves discipline
15 unos zapatos	15 shoes	35 limita la individualidad	35 limits individuality
16 unos vaqueros	16 jeans	36 da una imagen positiva	36 gives a positive image
17 unas medias	17 tights	37 ahorra tiempo por la mañana	37 saves time in the morning
18 una camiseta	18 a t-shirt	38 Mi amiga piensa que	38 My friend (f) thinks that
19 a rayas o a cuadros	19 striped or checked	39 pero a mí me gusta porque	39 but I like it because
20 cómodo o incómodo	20 comfortable or uncomfortable	40 pero a mí no me gusta porque	40 but I don't like it because

Vocabulary 9 – SCHOOL FACILITIES

01 En mi insti hay	01 In my school there is	21 nuevos	21 new
02 Mi insti tiene	02 My school has	22 antiguos	22 old
03 un salón de actos	03 a hall	23 amplios	23 spacious
04 un comedor	04 a canteen	24 pequeños	24 small
05 un campo de fútbol	05 a football pitch	25 feos	25 ugly
06 un patio	06 a playground	26 Lo mejor es que	26 The best thing is that
07 un gimnasio	07 a gym	27 Lo peor es que	27 The worst thing is that
08 una piscina	08 a swimming pool	28 En mi escuela primaria	28 In my primary school
09 una biblioteca	09 a library	29 no había exámenes	29 there weren't any exams
10 una pista de tenis	10 a tennis court	30 no había deberes	30 there wasn't any homework
11 unos laboratorios	11 some laboratories	31 instalaciones deportivas	31 sport facilities
12 muchas aulas	12 lots of classrooms	32 actividades extraescolares	32 extracurricular activities
13 Mi instituto es mixto	13 My school is mixed	33 No hay nada	33 There isn't anything
14 Mi instituto es masculino	14 My school is all boys	34 No tenemos ni tabletas	34 We don't have either tablets
15 Mi instituto es femenino	15 My school is all girls	35 ni ordenadores	35 or computers
16 Mi colegio es público	16 My school is state/public	36 Tampoco hay piscina	36 There isn't a pool either
17 Mi colegio es privado	17 My school is private	37 Voy al insti a pie	37 I go to school on foot
18 Lo bueno es que	18 The good thing is that	38 Voy al insti andando	38 I go to school walking
19 Lo malo es que	19 The bad thing is that	39 Voy al insti en bici	39 I go to school by bike
20 Los edificios son	20 The buildings are	40 Voy al insti en autobús	40 I go to school by bus

SPANISH 2

Vocabulary 10 – SCHOOL RULES AND PROBLEMS

01 ¿Cuáles son las normas?	01 What are the rules?	21 ¿Hay problemas en tu insti?	21 Are there p. in your school?
02 Está prohibido	02 It is forbidden	22 el estrés de los exámenes	22 exam stress
03 No se permite	03 You are not allowed	23 la presión del grupo	23 peer pressure
04 No se debe	04 You must not	24 el acoso escolar	24 bullying
05 Se debe	05 You must	25 Estoy estresado/a	25 I am stressed out
06 comer chicle	06 to chew chewing gum	26 Tengo miedo de	26 I am scared of
07 usar móvil en clase	07 to use your phone in class	27 suspender mis pruebas	27 failing my assessments
08 llevar uniforme	08 to wear a uniform	28 aprobar mis exámenes	28 passing my exams
09 ser agresivo	09 to be aggressive	29 Hay algunos alumnos que	29 There are some pupils who
10 ser grosero	10 to be rude	30 intimidan	30 (they) intimidate
11 correr en los pasillos	11 to run in the corridors	31 abusan	31 (they) abuse
12 llevar piercings	12 to wear piercings	32 sienten pánico	32 (they) feel panic
13 ser puntual	13 to be on time	33 hacen novillos	33 (they) skip lessons
14 salir del instituto	14 to leave the school	34 son una mala influencia	34 (they) are a bad influence
15 durante el día escolar	15 during the school day	35 Las normas son buenas	35 The rules are good
16 Estoy de acuerdo	16 I agree	36 Las normas son malas	36 The rules are bad
17 No estoy de acuerdo	17 I disagree	37 Las normas son necesarias	37 The rules are necessary
18 Pienso que	18 I think that	38 Las normas son severas	38 The rules are strict
19 Creo que	19 I believe that	39 Es justo	39 It's fair
20 En mi opinión	20 In my opinion	40 Es injusto	40 It's unfair

Vocabulary 11 – WHAT ARE YOU GOING TO DO IN THE NEAR FUTURE

01 ¿Qué vas a hacer?	01 What are you going to do?	21 Voy a comprar	21 I'm going to buy
02 Voy a viajar con mi clase	02 I'm g. to travel with my class	22 Voy a jugar	22 I'm going to play
03 Vamos a visitar Zaragoza	03 We're going to visit Zaragoza	23 Voy a nadar	23 I'm going to swim
04 participar en un intercambio	04 to participate in an exchange	24 Voy a tocar la guitarra	24 I'm going to play the guitar
05 conocer a mi compañero	05 to meet my partner	25 Voy a montar en bici	25 I'm going to ride my bike
06 llegar al aeropuerto	06 to arrive to the airport	26 Voy a escuchar música	26 I'm going to listen to music
07 estar en un hotel	07 to be in a hotel	27 Voy a comer	27 I'm going to eat
08 asistir a clases	08 to attend lessons	28 Voy a descansar	28 I'm going to relax
09 ir a pie	09 to walk / to go on foot	29 Voy a sacar fotos	29 I'm going to take photos
10 llevar ropa de calle	10 to wear your own clothes	30 Voy a ir de compras	30 I'm going to go shopping
11 comer juntos	11 to eat together	31 Vamos a ir al acuario	31 We're g. to go to the aquarium
12 ir de excursión	12 to go on a trip	32 Vamos a hacer submarinismo	32 We're g. to do diving
13 hacer turismo	13 to see the sights	33 Vamos a ir de paseo	33 We're g. to go for a walk
14 hacer una visita guiada	14 to do a guided tour	34 Vamos a estar al aire libre	34 We're g. to be outdoors
15 ver los edificios	15 to see the buildings	35 Vamos a pasear	35 We're g. to walk
16 practicar el español	16 to practise Spanish	36 Vamos a cocinar	36 We're g. to cook
17 ir a una churrería	17 to go to a churro shop	37 Vamos a salir con mis amigos	37 We're g. to go out with my f.
18 ver una película	18 to watch a film	38 Vamos a hacer una barbacoa	38 We're g. to have a barbecue
19 Va a ser guay	19 It's going to be cool	39 Vamos a llegar tarde	39 We're g. to arrive late
20 Va a ser fácil	20 It's going to be easy	40 Vamos a tomar el sol	40 We're g. to sunbathe

Vocabulary 12 – SCHOOL CLUBS

01 ¿Qué actividades haces?	01 What activities do you do?	21 ¡Fue un éxito!	21 It was a success!
02 actividades extraescolares	02 extracurricular activities	22 Este trimestre	22 This term
03 ¿Desde hace cuánto tiempo?	03 For how long?	23 El próximo trimestre	23 Next term
04 Practico el judo	04 I do judo	24 El próximo año	24 Next year
05 Toco la trompeta	05 I play the trumpet	25 El año que viene	25 Next year
06 Canto en el coro	06 I sing in the choir	26 voy a continuar con	26 I'm going to continue with
07 Voy al club de ajedrez	07 I go to chess club	27 voy a ir al club de	27 I'm going to go to the club of
08 Soy miembro del	08 I am a member of the	28 voy a hacer una prueba	28 I'm going to do a test
09 club de teatro	09 drama club	29 voy a hacer una película	29 I'm going to do a film
10 club de periodismo	10 journalism club	30 ¡Va a ser un éxito!	30 It's going to be a success!
11 club de fotografía	11 photography club	31 Los clubs extraescolares	31 Extracurricular clubs
12 desde hace tres años	12 for three years	32 son divertidos	32 (they) are fun
13 El trimestre pasado	13 Last term	33 son geniales	33 (they) are great
14 El año pasado	14 Last year	34 son interesantes	34 (they) are interesting
15 participé en un maratón	15 I took part in a marathon	35 Te ayudan a	35 They help you to
16 participé en un torneo	16 I took part in a tournament	36 aprender cosas interesantes	36 learn interesting things
17 participé en un concierto	17 I took part in a concert	37 hacer nuevos amigos	37 make new friends
18 participé en un campeonato	18 I took part in a championship	38 desarrollar tus talentos	38 develop your talents
19 gané un trofeo	19 I won a trophy	39 olvidar las presiones del colegio	39 forget the pressures of school
20 ganamos un premio	20 we won a prize	40 tener más confianza	40 have more confidence

COMPUTING 1

Year 10 – 2.2 Programming Fundamentals

Questions:	Answers:
1. What is the purpose of a variable in programming?	A variable in Python is used to store and manipulate data.
2. How are variables used to store data in Python?	You assign a values to them using the “=” assignment operator and perform operations on them.
3. Explain the role of indentation in Python programming, and why is it crucial for code readability?	Indentation in Python defines blocks of code. It is crucial for code readability and is used to signify the beginning and end of loops, functions, and conditional statements.
4. How does the 'if' statement work in Python, and why is it essential for implementing decision-making in programs?	The 'if' statement in Python allows conditional execution of code. It is essential for implementing decision-making, where code is executed based on a specified condition.
5. What is the purpose of a loop in programming, and how does the 'for' loop differ from the 'while' loop in Python?	A loop repeats a set of instructions. In Python, the 'for' loop is used for iterating over a sequence, while the 'while' loop continues iterating as long as a condition is true.
6. How are lists used in Python, and what advantages do they offer for storing multiple values?	Lists in Python store multiple values in a single variable. They are versatile and allow easy manipulation, iteration, and indexing of elements.
7. What is the purpose of a function in Python	A function is a block of reusable code in Python. It allows developers to organise and reuse specific tasks.
8. Explain the concept of a parameter in Python functions?	Parameters in Python functions are placeholders for values. They enable the passing of values to functions, allowing them to perform tasks with different inputs.
9. What is the purpose of the 'import' statement in Python?	The 'import' statement in Python allows the use of external modules and libraries. It brings functionality from external sources into the current program.
10. What is a while loop in Python?	A while loop in Python repeats a block of code <u>as long as</u> a specified condition is true.
11. What is the role of a translator in the context of programming languages?	A translator converts high-level programming code into machine code or an intermediate representation.

COMPUTING 2

Year 10 – 2.3 Producing robust programs

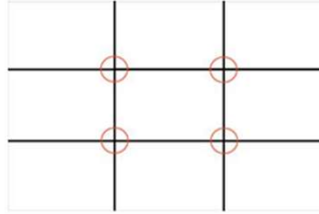
Questions:	Answers:
1. What is meant by the term "robust program," and why is it essential in software development?	A robust program is one that can handle unexpected inputs or conditions without crashing. It is essential for ensuring the reliability and stability of software.
2. What is the importance of validation when taking user input in a program?	Validation ensures that user inputs meet specific criteria.
3. How can the use of constants enhance the robustness of a program?	Constants make code more readable and maintainable, and they allow for easy updates.
4. What is the role of comments in programming?	Comments provide explanations about the code's purpose and functionality. They make code more maintainable by aiding understanding, especially for developers who didn't write the code.
5. Why is testing an integral part of producing robust programs?	Testing helps identify and fix issues in a program.
6. What is the purpose of exception handling in programming?	Exception handling allows a program to gracefully handle errors. It prevents crashes by providing an alternative course of action when an error occurs.
7. What is the role of pseudocode in the development of robust programs?	Pseudocode is a high-level description of a program's logic written in plain English usually with no specific syntax.
8. Why is proper indentation important in programming?	Proper indentation in programming enhances code readability and structure by visually indicating the hierarchy of code blocks.
9. What are the potential consequences of incorrect indentation in a program?	Incorrect indentation can lead to syntax errors and impact the logical flow of a program.
10. Explain the role of robust validation in preventing common security vulnerabilities?	Robust validation helps prevent security vulnerabilities by ensuring that user inputs adhere to specific criteria.
11. What is meant by a syntax error?	Syntax errors occur when the code violates the programming language's rules.
12. What are logic errors in programming?	Logic errors are mistakes in the program's algorithm or logic, leading to unexpected behaviour. Unlike syntax errors, they don't cause the program to fail during compilation.
13. What is the purpose of testing in software development?	The purpose of testing is to identify and fix defects in a program.

ART 1

Key Words – Spring Term

Composition

1. **Composition:** How the formal elements are laid out to create a visually effective artwork
2. **Context:** the historical, political and social conditions in which an artwork is made
3. **Subject Matter:** the object(s) or topic being represented in the artwork
4. **Rule of Thirds:** a compositional device where the artwork is divided equally into nine boxes. Helps create pleasing asymmetry when organising visual elements.



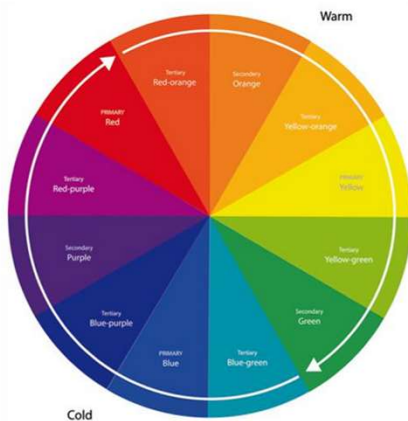
5. **Stylised:** Non-realistic (for example, a cartoon is stylised)
6. **Abstract:** does not represent visual reality (uses formal elements in a non-representational way)

Painting Specific

1. **Ground:** the very first layer of paint (or other wet medium) applied to an artwork
2. **Wash:** very thin layer of paint (generally used just to stain the canvas with key tones or a ground)
3. **Impasto:** the use of thick paint to create texture
4. **Gesture:** a movement of the hand to create a mark/marks that express an idea or meaning
5. **Optical Blending:** placing small amounts of unmixed colour side by side to create a visual illusion where the colours blend together when viewed at a distance.

Colour Theory

1. **Hue:** the name of a colour (e.g red, blue, or yellow)
2. **Tone:** How light or dark a colour is
3. **Saturation:** How vibrant a colour is
4. **Tint:** A colour + white
5. **Shade:** A colour + black



The Colour Wheel

You must know the position of:

1. Primary, secondary and tertiary colours
2. Warm and cool colours
3. Harmonious colours (adjacent)
4. Complementary colours (opposite)

ART 2

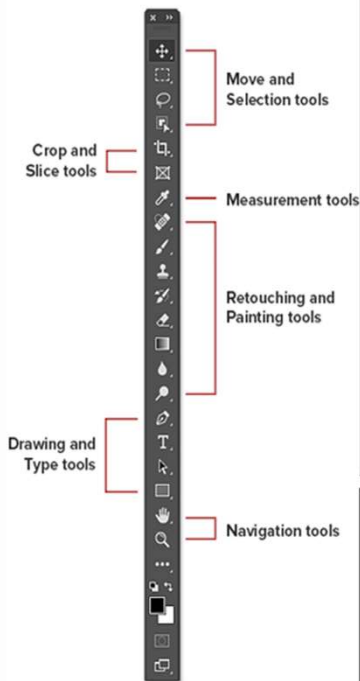
Photography

1. **Lens:** a tool used to bring light to a fixed focal point. It sends light to the sensor.
2. **Focus:** the sharpest area of the image
3. **Exposure:** how light or dark a photograph is
4. **ISO:** How sensitive the camera's image sensor is to light
5. **Shutter Speed:** how long the camera shutter remains open
6. **Aperture:** the size of the lens opening (also known as f stop)
7. **Depth of Field:** determines how much of your image is sharp, giving you control over which elements are in focus
8. **Shutter release:** The button you press to take a photo or semi-press to bring objects in to focus



Left: A diagram to show the effect of ISO/ aperture/ shutter speed on focus
 Right: Two photos showing the effect of aperture on **depth of field**

Photoshop tools layout



Photoshop/ Photopea

1. **Layer:** An image or adjustment that is "stacked" on top of the background. (This makes it easy to change or delete edits easily)
2. **Move:** Classic arrow tool used to reposition imagery
3. **Crop:** Makes the canvas bigger or smaller
4. **Free Transform:** lets you apply transformations (rotate, scale, skew, distort, and perspective)
5. **Blend Mode:** an effect you can add to a layer to change how the it blends with lower layers
6. **Dodge:** Lightens areas of an image
7. **Burn:** Darkens areas of an image
8. **Curves:** allows you to brighten, darken, add contrast, and adjust colours
9. **Magic Wand:** selects pixels based on **tone and colour**
10. **Quick Selection:** selects pixels based on colours and edges

Keyboard Shortcuts (PC)

Ctrl + C = copy
 Ctrl + V = paste
 Ctrl+Z = step back once
 Ctrl + shift + z = step back multiple times
 Ctrl + T = transform

GCSE PE Knowledge Organiser - CARDIOVASCULAR SYSTEM

Key terms and definitions

1. Heart Rate (HR)	The number of times the heart beats per minute
2. Stroke Volume (SV)	The amount of blood leaving the heart each beat
3. Vasodilation	blood vessels are dilated to make them bigger
4. Vasoconstriction	blood vessels are constricted (squeezed) to make them smaller
5. Cardiac Output	$HR \times SV = \text{Cardiac Output}$
6. Maximum Heart Rate (MHR)	the highest number of beats your heart makes when you exercise. $220 - \text{age} = \text{MRH}$
7. Resting Heart Rate (RHR)	Your heart rate at rest

SECTION 1 - FUNCTIONS OF THE CARDIOVASCULAR SYSTEM

8	Transports oxygen, carbon dioxide and nutrients
9	Helps blood to clot
10	Controls body temperature

SECTION 2 - BLOOD VESSELS & THE BLOOD

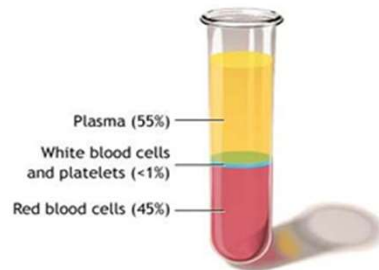
11	Arteries - Thick elastic walls - Carry blood at high pressure away from the heart - Mainly carry oxygenated blood (exception: pulmonary)
12	Capillaries - Very thin walls (1 cell thick) - Carry blood at low pressure - allow gaseous exchange
13	Veins - Contain valves - Carry blood at low pressure - carry deoxygenated blood from muscles

SECTION 4 - EFFECTS OF EXERCISE

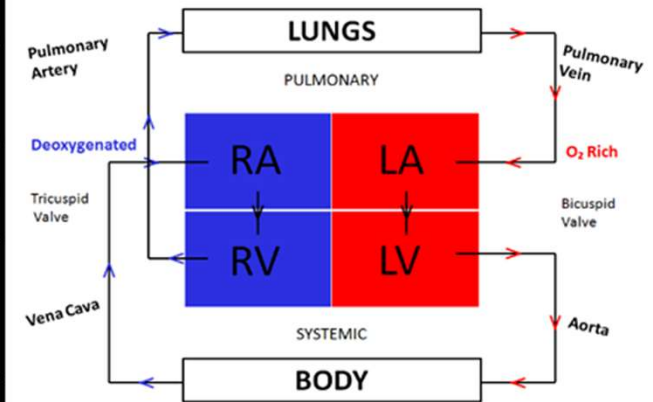
18	Short term effects of exercise - Increased heart rate (HR) - Increased stroke volume (SV) - Increased blood pressure - Cardiac output increases ($HR \times SV = \text{Cardiac Output}$)
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SECTION 3 - THE BLOOD

14	Plasma - transports the blood cells, platelets and nutrients to the different parts of the body
15	Red Blood Cells - Carry oxygen and remove Carbon dioxide
16	Platelets - help prevent bleeding as they can stick to each other and to the walls of the blood vessels
17	White blood cells - help fight infection - They travel around the body in the plasma and fight any infections or diseases that may be there.



BOX HEART

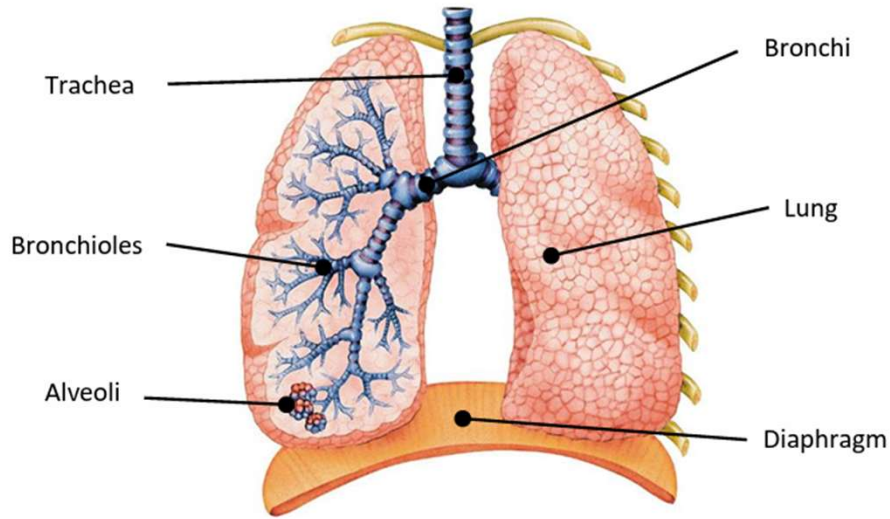


SECTION 5 - VASCULAR SHUNTING

19	Vascular shunting is when blood is diverted away from inactive areas to the working muscles.
20	Blood can be shunted away from the stomach. This is why it is important that digestion is complete before exercise begins.

GCSE Physical Education – The structure and functions of the respiratory system

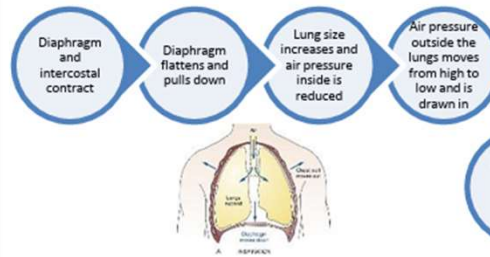
Structure of the respiratory system



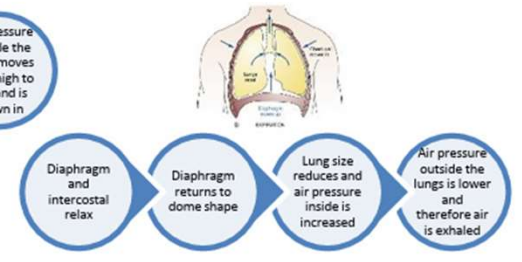
Composition of inhaled and exhaled air

Gas	Inhaled air	Exhaled air
Oxygen	21%	16%
Carbon dioxide	0.04%	4%
Nitrogen	78%	78%

Inhalation/Inspiration



Exhalation/Expiration



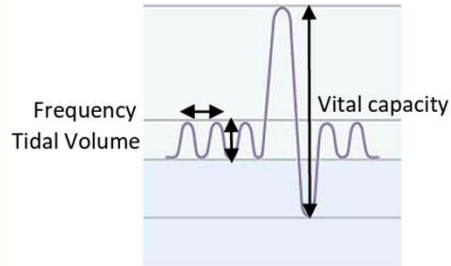
Respiratory values

Tidal Volume – the amount of air inhaled and exhaled per breath. Resting value = 500ml

Vital Capacity – The maximum amount of air exhaled following a maximal breath in.

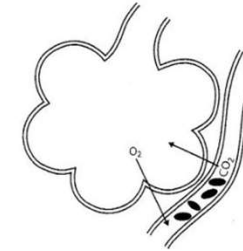
Frequency – The number of breaths taken per minute. Resting value – 12-20 breaths.

Minute Ventilation – The amount of air inhaled and exhaled per minute. Measured in litres.



Gaseous exchange at the alveoli

- Diffusion is the movement of molecules from an area of high concentration to a low one.
- The alveoli have thin moist walls to allow diffusion to occur.
- Capillaries are closely wrapped around the alveoli to reduce the distance of diffusion and increase efficiency.



During inhalation:

- The concentration of **oxygen** in air is higher than the alveoli.
- The concentration of **carbon dioxide** in the blood is higher than that in the air.

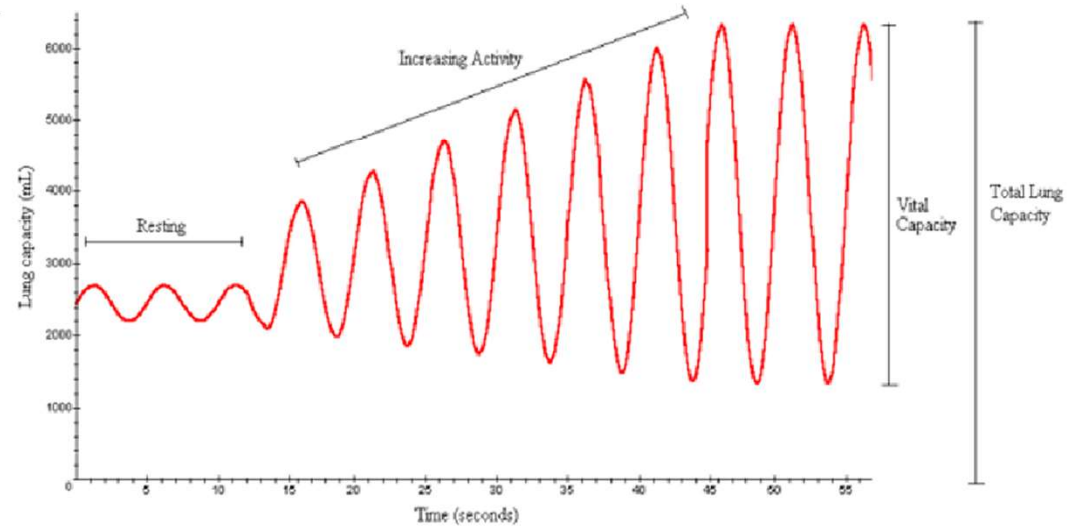
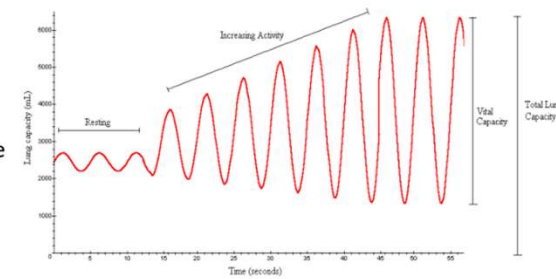
During exercise

Gaseous exchange increases as the intensity of the activity increases to cope with:

- An increase demand for oxygen at working muscles
- An increase in carbon dioxide production and the need to rid this waste product.

Frequency ↑ + Tidal Volume ↑

Training increases total lung capacity and vital capacity readings.



RE 1

Key definitions

1. benevolent	Well-meaning and kindly
2. omniscient	All knowing
3. omnipotent	All powerful
4. monotheistic	Belief in one God
5. eternal	Lasts forever
6. transcendent	Going beyond the range of normal human experience.
7. immanent	Being contained within the boundaries of a person or world.
8. forgiving	Willing to let go of anger
9. Messiah	The anointed saviour
10. Son of God	Jesus' status as the divine son of God the Father.
11. Lord	Title given to Jesus Christ
12. Saviour	God or Jesus Christ redeeming sin.
13. the incarnation	God in human form as Jesus.
14. the crucifixion	The death of Jesus described in the Gospels.
15. the resurrection	The raising of Jesus from the dead.
16. the ascension	The return of Jesus to heaven.
17. salvation	The saving of mankind from their sins
18. atonement	The forgiving of sin through the suffering of Jesus
19. sin	An immoral act in the eyes of God.
20. grace	Favour from God

Sources of wisdom and authority

21. Genesis 1 – 3	“In the beginning, God created the heavens and Earth...”
22. John 1	“In the beginning was the Word, and the Word was with God, and the Word was God.”
23. Exodus 20:2-17	The first four of the ten commandments: 1 – You shall have no other God's before me. 2 – Thou shall not make unto thee any graven images. 3 – Though shall not take the name of the Lord they God in vain. 4 – Remember the sabbath and keep it Holy.
24. The Nicene Creed	“We believe in...”
25. The Apostle's Creed	“I believe in...”
26. Matthew 6:9–15	“Then this is how you should pray...Our Father in heaven...”
27. John 14:16–17	“But you know him, for he lives with you and will be in you.”
28. Romans 1:20	“For since the creation of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that people are without excuse.”

RE 2

29. Matthew 5-7	"Blessed are the poor in spirit, for theirs is the kingdom of heaven.
30. Genesis 3:1-19	"He said to the woman, "Did God really say, 'You must not eat from any tree in the garden'?"
31. John 3:16-18	"For God so loved the world, that he gave his only begotten Son"
32. Luke 1:26-35	The angel answered, "The Holy Spirit will come on you, and the power of the <u>Most High</u> will overshadow you. <u>So</u> the holy one to be born will be called the Son of God.
33. Romans 3:23	"For all have sinned and fall short of the glory of God"
34. Corinthians 1	I always thank my God for you because of his grace given you in Christ Jesus
35. Matthew 25: 31-46	"When the Son of Man comes in His glory, and all the holy angels with Him, then He will sit on the throne of His glory"
36. Romans 3:24	"And all are justified freely by his grace through the redemption that came by Christ Jesus."
37. Ephesians 2:8-9	For it is by grace you have been saved, through faith—and this is not from yourselves, it is the gift of God
38. Matthew 22:36-39	"Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind. This is the first and great commandment. And the second is like unto it, <u>Thou shalt love thy neighbour as thyself.</u> "
39. Phillipians 2:5-8	"In your relationships with one another have the same mindset as Jesus Christ."
40. Matthew 5:48	"Therefore, you shall be perfect, just as your Father in heaven is perfect."
41. Luke 15:20-24	" <u>So</u> he got up and went back to his father. While he was still a long way off, his father <u>caught sight of him, and was filled with compassion.</u> "
42. Luke 10:25-37	The expert in law replied, "The one who had mercy on him." Jesus told him, "Go and do likewise".
43. Matthew 8:1-3	Jesus reached out his hand and touched the man. "I am willing," he said. "Be clean!" Immediately he was cleansed of his leprosy.
44. Mark 5: 21-42	"Daughter, your faith has healed you. Go in peace and be freed from your suffering."
45. Matthew 28:1-10	"Then Jesus said to them, "Do not be afraid. Go and tell my brothers to go to Galilee; there they will see me."
46. Acts 1:9-11	"This same Jesus, who has been taken from you into heaven, will come back in the same way you have seen him go into heaven."
47. Matthew 5:29-30	"It is better for you to lose one part of your body than for your whole body to go into hell."
48. John 14:1-3	"Do not let your hearts be troubled. You believe in God; believe also in me.