Year 9 – 100% Book 1 Autumn 2023

NAME	
FORM GROUP	

RETRIEVAL PRACTICE

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: Core knowledge

Term	Definition
1. Alliteration	The repetition of the same consonant sound, especially at the beginning of words.
2. Allusion	A reference to another event, person, place or work.
3. Ambiguity	Use of language where the meaning is unclear or has two or more possible meanings or interpretations.
4. Anaphora	Repetition at the start of a sentence or statement (Shylock's "Hath not a Jew...").
5. Antithesis	Opposites - direct contrast: "I had sworn thee fair and thought thee bright/ Who art as black as Hell as dark as night".
6. Assonance	Similar vowel sounds occurring together: Spoon the fool's food.
7. Caesura	A break in a line of verse, usually following enjambment (think of 'caesarean' or cut)
8. Colloquial	Ordinary everyday speech and language (slang or dialect)
9. Connotation	An implied meaning
10. Dramatic Irony	When the audience knows something the characters on stage do not (Birling saying how great The Titanic is in An Inspector Calls)
11. Direct Address	When the writer speaks directly to the reader.
12. Enjambment	(in verse only) A line of verse that flows on into the next line without a pause. . "One summer evening (led by her) I found / A little boat..."¬
13. Foreshadowing	A hint of what is to come - Marley's face on the door knocker in A Christmas Carol.
14. Hyperbole	Exaggeration (usually for comic effect)
15. Iambic Pentameter	10 syllables - Unstressed followed by stressed TeDUM TeDUM TeDUM TeDUM TeDUM
16. Imagery	The use of words to create a picture or "image" in your head. "The ******* in Blake's 'London' is dark".
17. Juxtaposition	Placing two contrasting ideas/statements/things near each other in order to compare and contrast. It is different to oxymoron.
18. Metaphor	Direct comparison saying one thing IS another (not 'like').
19. Narrative	A piece of writing that tells a story.
20. Onomatopoeia	Words which sound like the things they are describing: "bang", "crash", "squelch" etc .
21. Oxymoron	Two things which are generally incompatible put together, like "bitter sweet". Not to be confused with juxtaposition.
22. Pathetic fallacy	When surroundings or weather reflect the inner mood of a character or event (Frankenstein's stormy night)
23. Personification	Giving living (not necessarily 'human') attributes to inanimate or non-human things - is a type of metaphor. "Time must untie this knot".
24. Plot	The sequence of events in a poem, play, novel or short story that make up the main storyline.
25. Point of View	perspective from which we hear what is happening.
26. Protagonist	The main character.
27. Pun	A play on words: "Time must untie this knot, not I... (Shakespeare's Twelfth Night).
28. Rhyme scheme	The pattern of rhymes in a poem.
29. Rhythm	The beat as created through the meter
30. Simile	Direct comparison using like or as.
31. Soliloquy	Speech delivered directly to the audience (particularly in Shakespeare) in which the character says they are thinking and feeling.
32. Sonnet	A fourteen-line poem, usually with 10 syllables in each line ("Ozymandias").
33. Stanza	The blocks of lines into which a poem is divided - a 'verse'
34. Statistics	(in non-fiction) facts and figures
35. Structure	The way a poem or play or other piece of writing has been put together
36. Symbol	Like the use of images, symbols present things which represent something else.

Sentences Types and Parts of Speech

Term	Definition
37. Simple sentences	A simple sentence is one main clause with a full stop.
38. Compound sentences	A compound sentence consists of at least two main clauses joined together by a conjunction.
39. Complex sentences	A complex sentence consists of a main clause plus one or more subordinate clauses.
40. Interrogative	Essentially, a question (think of interrogate). Can be a Sentence or a word. "What?"
41. Declarative sentences	Simply statements that relay information.
42. Imperative sentences	Used to issue a command or instruction, make a request, or offer advice.
43. Adverb	Adds information to a verb.
44. Determiner	A word placed in front of a noun to specify quantity (e.g., "one dog," "many dogs") or to clarify what the noun refers to (e.g., "my dog," "that dog," "the dog")
45. Verb	A doing word (ran), or a state of being (is , was)
46. Noun	Labels person, place or thing
47. Adjective	Describes a noun
48. Preposition	Shows relation of one thing to another - on, at, in, by
49. Conjunction	Joins word and clauses: 'and' 'so' 'where' etc.
50. Present Participle	Verb ending in 'ing': Walking, talking and jumping and so on
51. A concrete noun	a noun you can experience physically with your senses.
52. An abstract noun	an idea of something. You cannot experience it physically with your senses.
53. A proper noun	the specific name of something, and always needs a capital letter.
54. An auxiliary verb	a helping word that the main verb needs to be complete.

WHO'S WHO? KEY CHARACTERS

1. Mr Jones	The drunk owner of Manor Farm. Does not look after the animals well. Represents Tsar Nicholas II
2. Mrs Jones	Mr Jones' wife. She is run out of Manor Farm with her husband when the animals rebel
3. Old Major	A wise and intelligent pig who inspires the rebellion. Represents Karl Marx and Vladimir Lenin
4. Napoleon	A menacing and intimidating pig, who takes control of the farm following the rebellion. Represents Joseph Stalin
5. Snowball	A brave and intelligent pig who initially stands beside Napoleon following the rebellion, but is eventually chased out of the farm. Represents Leon Trotsky
6. Boxer	A trusting and hardworking horse. Represents the working class within Russia
7. Squealer	A pig who is second-in-command to Napoleon. A clever speaker. Represents Stalin's propaganda machine (Pravda), specifically Vyacheslav Molotov
8. Clover	A good-hearted female cart-horse and Boxer's close friend
9. Moses	The tame raven who spreads stories of Sugarcandy Mountain, the paradise to which animals supposedly go when they die. Represents religious propaganda
10. Mollie	The vain, flighty mare who pulls Mr. Jones's carriage. Mollie craves the attention of human beings and loves being groomed and pampered. Represents the bourgeoisie who fled Russia after the revolution
11. Benjamin	The long-lived donkey who refuses to feel inspired by the Rebellion. Benjamin firmly believes that life will remain unpleasant no matter who is in charge
12. Muriel	The white goat who reads the Seven Commandments to Clover whenever Clover suspects the pigs of violating their prohibitions
13. Mr Frederick	The tough, shrewd operator of Pinchfield, a neighbouring farm. Represents Adolf Hitler
14. Mr Pilkington	The easygoing gentleman farmer who runs Foxwood, a neighbouring farm. Represents the capitalist governments of Britain and the United States
15. Mr Whymper	The human solicitor whom Napoleon hires to represent Animal Farm in human society
16. The dogs	Napoleon rears the dogs from puppies to 'protect' the farm. Represent the Russian secret police
17. Minimus	The poet pig who writes verse about Napoleon and pens the banal patriotic song "Animal Farm, Animal Farm" to replace the earlier idealistic hymn "Beasts of England," which Old Major passes on to the others
18. The hens	they bravely protest about their eggs being taken
19. The young pigs	they speak out against Napoleon and are executed as a result
20. The sheep	they interrupt debate on the farm with chants of "four legs good, two legs bad". They play a crucial role in Napoleon's rise to power. Represent the indoctrinated Russian working class

KEY THEMES/CONCEPTS

21. communism	A classless society where all property is owned publicly
22. dictatorship	A country ruled by someone who has complete authority
23. exile	When someone is away from their home country and is refused permission to return
24. propaganda	Information, often biased or misleading, designed to persuade people to adopt a particular point of view
25. rhetorical device	The linguistic techniques used as part of persuasive speaking or writing
26. scapegoating	Irrationally putting the blame for something on a group or individual
27. tyrant	A cruel and oppressive ruler

KEY CONTEXT

28. The Russian Revolution	The Russian Revolution was a period of political and social revolution that took place in the former Russian Empire which began during the First World War. This period saw Russia abolish its monarchy and adopt a socialist form of government following two successive revolutions and a bloody civil war.
29. Stalinism	Stalinism is the means of governing and Marxist-Leninist policies implemented in the Soviet Union from 1927 to 1953 by Joseph Stalin
30. George Orwell	The writer of the novella. Experienced the benefits and fears of a communist society during his time spent during the Spanish Civil War
31. Allegory	a story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one

	WHAT HAPPENS?
32. Chapter One	Old Major calls a meeting of all the animals. We meet all the main characters as they enter the barn. Old Major, in his speech, points out that no animal knows the meaning of happiness and that all their hard work and produce goes to benefit man. If man was removed the animals would not have to work so hard and would have more to eat. He ends the meeting by assuring them that the revolution to remove man would come eventually and teaches them the song 'Beasts of England' which becomes their 'national anthem'.
33. Chapter Two	Old Major dies in his sleep in early March. The pigs are recognised as being the cleverest animals - particularly Snowball, Napoleon and Squealer. We also meet Moses, the tame raven, who says he knows the existence of a place called Sugarcandy Mountain (heaven). The revolution happened more quickly than expected. When Jones and 4 of his farmhands started whipping the animals to get them under control, they turned and butted and kicked, driving Jones off his farm. The animals destroy everything that reminds them of human domination. They celebrate and the pigs, who have learned to read and write, paint the 7 commandments on the wall of the barn. The pigs manage to milk the cows, who are rather uncomfortable by this time, and Napoleon guards it while they all go off to survey their farm. When they return the milk has disappeared.
34. Chapter Three	The pigs have taken charge of the farm which is now called Animal Farm rather than Manor Farm. The harvest is good and everyone works hard knowing that the produce is theirs. Boxer works harder than anyone. They fly a flag over the farm to symbolise their ownership. Meetings are held every week where the pigs outline their ideas and hold debates. Snowball and Napoleon never agree on what should be done. Snowball organises lots of committees to make everyone feel involved in the running of the farm but really the pigs are in control. 9 puppies are born and Napoleon takes them aside to rear them himself. It is announced that the milk and apples are to be reserved for the pigs alone. Squealer is sent to explain that the reason for this is because the pigs do all the brain work, without which Jones would probably return. This terrifies the animals and is used frequently to keep them from complaining about the preferential treatment for the pigs.
35. Chapter Four	Pigeons start to spread the word about the rebellion to other farms. We meet the owners of the two neighbouring farms - Foxwood owned by Mr. Pilkington and Pinchfield owned by Mr. Frederick. They fear that rebellion will spread to their farms so join with Jones to mount an attack on Animal Farm to regain control. The animals unite to defeat them in the Battle of the Cowshed. All the animals fight except for Mollie who hides. They later make medals to be presented for bravery. Snowball and Boxer receive Animal Hero 1st Class medals and a sheep who was killed is posthumously awarded an Animal Hero 2nd Class medal. Nobody seems to notice the irony of dividing animals into classes when they are all supposed to be equal.
36. Chapter Five	Mollie disappears. She cannot bear to live without her ribbons and sugar which the other animals regard as being the sweeteners used by man to control them. The winter is a hard one. Snowball puts forward the idea of a windmill to provide electricity to heat their stalls and ease their workload. Napoleon disagrees and trains the sheep to bleat '4 legs good, 2 legs bad.' every time Snowball tries to speak. These two pigs are obviously competing for leadership of the farm and Snowball is certainly the more popular. When he appears to be losing the argument, Napoleon calls up the 9 puppies he had taken away some months earlier. They chase Snowball off the farm and Napoleon assumes complete control. Squealer convinces the animals that Snowball has always been a traitor, that he was not brave in the Battle of the Cowshed and that he stole the idea of the windmill from Napoleon himself
37. Chapter Six	The animals work hard to build the windmill, Boxer being the one who did most of the heavy work. His 2 slogans are introduced - 'I will work harder' and 'Napoleon is always right.' Napoleon decides to start trading with the neighbouring farms, Foxwood and Pinchfield. He uses a middleman Whymper to conduct business with them. When the animals see Napoleon ordering Whymper around, it makes them forget that they are not supposed to deal with humans. The pigs move into the farmhouse and start to sleep in beds. Commandment 4 has 'with sheets' added to it and Squealer convinces the animals that they must have forgotten that bit. Because the other animals never learned to read properly, they believe Squealer and agree that the pigs must have more comforts than they do if they are to prevent Jones coming back. A violent storm destroys the windmill. Napoleon blames Snowball and tells the animals to rebuild it with stronger walls.
38. Chapter Seven	There is a severe food shortage but to convince the outside world that all is well, the food bins are filled with sand and merely topped up with grain. The hens are ordered to give up their eggs for the pigs to sell. When they stage a small protest by dropping their eggs from the rafters, Napoleon starves them until they give in. Napoleon is rarely seen in public any more and announcements are always made by Squealer. The animals are told that Snowball was always in league with Jones and that even now Snowball is plotting with Jones to overthrow the farm. To prove his point, he makes 4 pigs confess to having secret meetings with Snowball. They are immediately slaughtered. Then 3 hens, a goose and 3 sheep also confess to similar crimes and receive a similar fate. 'Beasts of England' is banned and Minimus composes another song in praise of Napoleon to replace it. Napoleon awards himself medals.
39. Chapter Eight	The 6th commandment is changed to 'No animal shall kill any other animal without cause.' The animals work harder than ever for less food though the pigs and dogs always have plenty. Napoleon decides to sell timber to Pilkington. The windmill is finished and called Napoleon Mill. When Napoleon discovers that Pilkington has paid for the timber with forged notes, he becomes friendly with Frederick instead. Pilkington then attacks the farm one night and blows up the windmill with dynamite. When Napoleon is seen in public, he always has a black cockerel walking in front of him like a trumpeter. A gun is fired on his birthday and he eats from the best china dinner service with a food taster to try his food to make sure it is not poisoned. He now behaves like a king or emperor.
40. Chapter Nine	Rations are reduced once again and work on the windmill starts for a third time. Boxer's ambition is to finish it before he retires so he works even harder than usual. A school is built for the piglets and they are encouraged to avoid the other animals who now have to step aside to let them pass. Despite the food shortage, produce is sold to provide machinery for the windmill and whisky for Napoleon's table. The barley is reserved to brew beer for the pigs. Moses returns to the farm with tales of Sugarcandy Mountain. The animals, now starving and desperate, are more inclined to listen - there may be a better world after death. The pigs view him as dangerous.. Boxer collapses through overwork. Napoleon assures the other animals that he is being taken to a hospital to be cared for but he sells him to a glue manufacturer in return for whisky. When Benjamin points out that the van in which he was taken away said 'Horse Slaughterer' on the side, Squealer replies that it used to belong to the horse slaughterer but now belongs to the vet.
41. Chapter Ten	Years later few of the animals are alive who remember the days before the rebellion. The windmill is finished but is used for milling corn to be sold at a profit rather than for electricity to make the animals' lives easier. Squealer takes away the sheep for a week. On their return, they bleat '4 legs good, 2 legs better' as the pigs appear walking on their back legs and carrying whips. The commandments are scrubbed off the barn wall and replaced with just one - 'All animals are equal but some are more equal than others.' The pigs start to wear clothes and the farm is called Manor Farm once again. One evening the animals look in the farmhouse window where the pigs and local farmers are drinking and playing cards. As they look from pig to man and back, it becomes hard to tell which is which.

SCIENCE: 9B1 – Biological processes and systems

1. Where are blood cells made?	Bone marrow
2. Which part of the skeleton protects the lungs	The rib cage
3. Which mineral makes bones strong?	calcium
4. Name the 4 main functions of the skeleton	1. Support 2. Protect vital organs 3. Movement 4. Make blood cells
5. What is the purpose of white blood cells	To protect against infection
6. Which of the following is a hinge joint - shoulder>Hip>Knee	Knee
7. Name the smooth substance at the end of a bone	cartilage
8. What type of joint is a hip joint	Ball and socket
9. How are muscles attached to bone?	By strong tendons
10. Name the two muscles in the upper arm	biceps and triceps
11. How are bones linked together	Joints
12. What is a synovial joint	A freely movable joint
13. How do muscles work?	By getting shorter - contraction
14. What are antagonistic muscles?	A 'pair' of muscles that act on a joint. As one contracts, the other relaxes
15. Give an example of a pair of antagonistic muscles found in the legs	quadriceps and hamstrings
16. What is respiration?	A chemical reaction which uses glucose and oxygen to release energy
17. Give the equation for aerobic respiration	glucose + oxygen -> carbon dioxide + water
18. Outline the flow of air from the atmosphere into our lungs, starting from the nasal cavity.	Nasal cavity --> trachea --> bronchi --> bronchioles --> alveoli
19. What two structures change the pressure inside the chest cavity to ventilate lungs?	Intercostal muscles + Diaphragm
20. Describe the state of the diaphragm as we breathe in.	Contracts and flattens
21. Describe the state of the diaphragm as we breathe out.	Relaxes and return to dome shape
22. State the function of the ribcage.	Protect the heart and lungs
23. State one adaptation of the lungs for efficient gas exchange.	Lots of alveoli to increase surface area; Rich blood supply/Extensive capillary network; Thin walls (one cell thick)
24. What is the scientific name for the windpipe?	Trachea

SCIENCE: 9B1 – Biological processes and systems

|	
25. Why is it important for the lungs to have a rich blood supply?	Maintain steep concentration gradient for efficient diffusion
26. What is the name for respiration with oxygen?	Aerobic
27. What is ventilation?	Breathing
28. What are tiny air sacs in the lungs called?	Alveoli
29. Where does respiration happen	Mitochondria
30. Name the 6 main structures of the respiratory system	Mouth, nose, trachea, bronchus, bronchioles, alveoli
31. State three ways that the lungs are adapted for gas exchange	1) Thin walls, 2) good blood supply, 3) moist walls
32. Define "diffusion"	The moment of particles from a high concentration to a low concentration
33. Which gas diffuses from the alveoli (lungs) into the blood?	Oxygen
34. Which gas diffuses from the blood into the alveoli (lungs)?	Carbon dioxide
35. Which chemical in the red blood cells attaches to oxygen so that it can carry it around the body?	Haemoglobin
36. What happens to the diaphragm, ribs and lungs during inhalation?	Ribs = expand, diaphragm = contract, lungs = inflate
37. What happens to the diaphragm, ribs and lungs during exhalation?	Ribs = contract, diaphragm = relaxes, lungs = deflate
38. Which cells line the trachea to sweep the mucus and dust from the lungs?	Ciliated cells
39. Which disease destroys the alveoli?	Emphysema
40. What does the trachea divide into?	Two bronchi
41. What does exercise cause to increase?	breathing rate and tidal volume
42. What is tidal volume?	The volume of air breathed in or out in one breath
43. What is asthma?	A disease that affects the respiratory system
44. Which part of the gas exchange system does asthma affect	Bronchioles
45. What happens to the bronchioles during an asthma attack?	The muscles in the lining of the bronchioles contract. More fluid is produced
46. Name 3 harmful substances found in cigarettes	tar * nicotine * carbon monoxide
47. Define "genetic variation"	Differences caused by your DNA
48. Define "environmental variation"	Differences caused by the environment around you
49. State 2 examples of genetic variation	Eye colour and ear lobe shape

50. State 2 examples of environmental variation	Scars and tattoos
51. State 3 examples of variation caused by environmental and genetic variation	Weight, height, skin colour
52. Define "continuous variation"	A range of differences
53. Define "discontinuous variation"	Differences limited to categories
54. Give 2 examples of "continuous variation"	Skin colour, weight
55. Give 2 examples of "discontinuous variation"	Shoe size, sex
56. Why are we not genetically identical to our parents?	Inherit half of our DNA from each parent
57. Name the diagram that is predict genetic characteristics of an organism	Punnett square
58. Define "genotype"	The combination of alleles
59. Define "phenotype"	The characteristic shown e.g., blue eyes
60. Define "heterozygous"	Two different alleles
61. Define "homozygous"	Two of the same alleles
62. Define "offspring"	The organisms produced in reproduction
63. Define "allele"	A form of a gene
64. Define "gene"	A section of DNA coding for a protein
65. Define "dominant allele"	Define "recessive"
66. The allele that is always expressed	The allele that is expressed only if two copies are present

SCIENCE: 9C1 – Reactivity

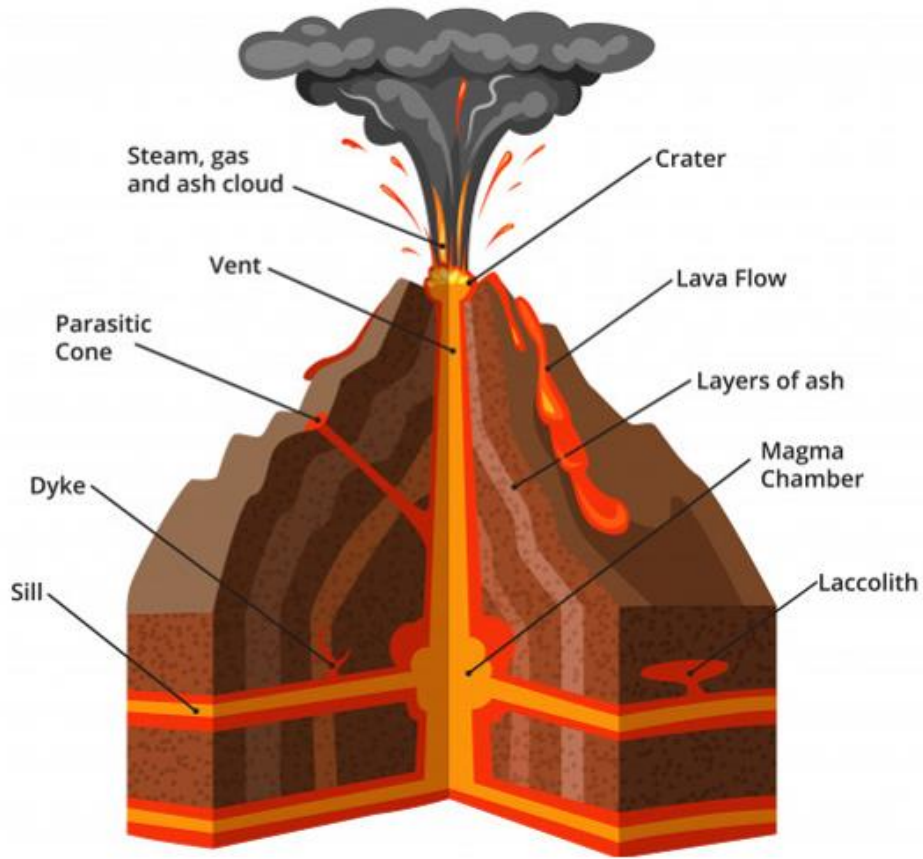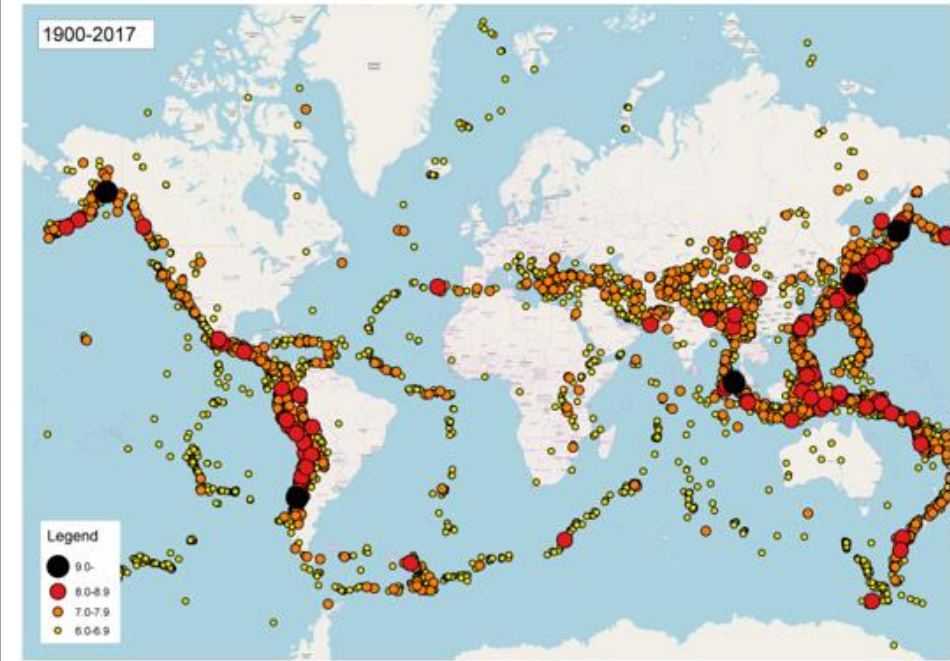|	
1. Which gas is produced when a metal reacts with acid?	Hydrogen
2. What is the general equation for an oxidation reaction?	Metal + acid -> salt + hydrogen
3. What is an oxidation reaction?	A substance combining with oxygen
4. What is the general equation for an oxidation reaction?	Metal + oxygen -> metal oxide
5. What type of reaction is an acid + metal hydroxide reaction?	Neutralisation reaction
6. Recall the general equation for an acid + metal hydroxide reaction	Acid + metal hydroxide -> metal salt + water
7. Recall the general equation for an acid + metal carbonate reaction	Acid + metal carbonate -> metal salt + water + carbon dioxide
8. What is the state symbol for a solid?	(s)
9. What is the state symbol for a liquid?	(l)
10. What is the state symbol for a gas?	(g)
11. Which salt is produced when hydrochloric acid is used?	Metal chloride
12. Which salt is produced when sulphuric acid is used?	Metal sulphate
13. What is the state symbol for a solution?	(aq) = aqueous
14. What is the reactivity series?	A list of elements ordered by their reactivity
15. Recall the reactivity series of metals from high to low reactivity	Potassium, sodium, lithium, calcium, magnesium, zinc, iron, copper
16. How can metals be placed in order of their reactivity?	Add the metals to water or acid and see which ones react the most (by how much fizzing there is)
17. What is the name for a reaction where oxygen is removed from a compound?	Reduction
18. Explain why zinc can be extracted from zinc oxide with carbon but magnesium cannot be extracted from magnesium oxide with carbon	Magnesium is more reactive than carbon (1), Zinc is less reactive than carbon (1), Carbon can therefore remove oxygen from zinc oxide but not magnesium oxide (1)
19. Define oxidation in the context of loss and gain of electrons	Oxidation is the loss of electrons
20. Define reduction in the context of loss and gain of electrons	Reduction is the gain of electrons
21. Define a displacement reaction	A reaction in which a more reactive element takes the place of a less reactive element in one of its compounds or in solution
22. Explain why gold and silver can be found naturally in the Earth's crust	It is very unreactive
23. What process is used to extract metals more reactive than carbon	Electrolysis
24. Define an ore	A material containing enough metal in it for it to be economically worthwhile to extract the metal.

Tectonic Hazards
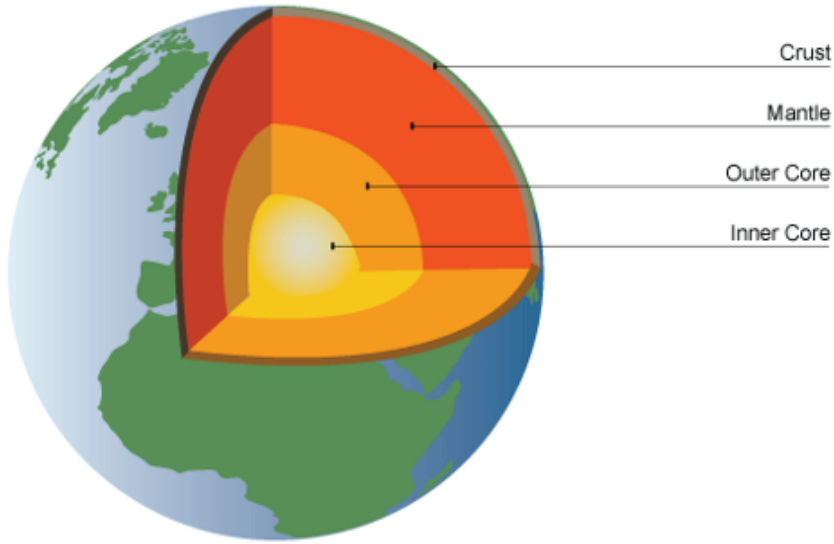
Continental Crust	Oceanic Crust
Located beneath the Earth's continents.	Located beneath the Earth's oceans.
Thick – Average thickness of between 20 and 50 miles.	Thin – Average thickness of between 3 and 5 miles.
Less dense – Air can get into the crust.	Dense – Water can get into the crust.
Made from granite and other sedimentary and metamorphic rocks.	Made of basalt and other igneous rocks.
Older – Millions/billions of years old	New – Always being made. Hours/days old.

1. Inner Core	The inner most layer of the Earth. Hot (6000°C), solid iron, under very high pressure.
2. Outer Core	The layer that surrounds the outer core. Hot (5000°C), liquid iron and nickel.
3. Mantle	The thickest layer at 2000 miles. Hot (1200°C - 4000°C) Silicon Oxide and Magnesium Oxide.
4. Crust	The outer most layer. Cool (30°C on average). Oceanic and continental. Made from basalt and granite.
5. Tectonic Plates	The smaller subdivides of the Earth's crust. There are 14 main tectonic plates.
6. Convection Currents	The process by which tectonic plates are moved. Hot, less dense magma in the mantle rises towards the crust, cools becoming denser, then sinks.
7. Continental Drift	Alfred Wegener's theory that the tectonic plates moved. Used world map, rock type and fossil evidence to prove his theory.
8. Pangea	The supercontinent, where all of the Earth's landmass was joined together.
9. Conservative Boundary	2 tectonic plates, either oceanic or continental, move in opposite directions past each other, or in the same direction but at different speeds.
10. Collision Boundary	2 tectonic plates of the same density, usually both continental, move in opposite directions towards each other. Fold mountain form here.
11. Constructive Boundary	2 tectonic plates of different densities, though usually 2 oceanic plates, move in opposite directions away from each other. New rock is created. Ocean ridges form here.
12. Destructive Boundary	2 tectonic plates of different densities, 1 continental and 1 oceanic move in opposite directions towards each other. The denser, oceanic plate is subducted beneath the less dense continental plate. Ocean trenches are formed here.
13. Subduction	The movement of the denser, oceanic plate beneath the less dense, continental plate. Only occurs at destructive plate boundaries.
14. Volcano	An opening in the Earth's crust through which magma can be erupted.
15. Volcanologist	A scientist that studies volcanoes.
16. Composite Volcano	A steep sided, conical volcano that erupts viscous lavas.
17. Shield Volcano	A shallow sided, hill shaped volcano that erupts non-viscous lavas.
18. Viscous	Sticky, less fluid
19. Non-Viscous	Runny. More fluid
20. Pyroclastic Flow	Volcanic material erupted in an eruption column, pulled back down the sides of the volcano under gravity.
21. Lahar	A mix of water and volcanic material.
22. Explosive Eruption	A violent eruption caused by viscous lavas trapping gas and blocking the vent of the volcano.
23. Effusive Eruption	An eruption of lava only.
24. Phreatic Eruption	An eruption caused by a build of steam in the volcano.
25. Earthquake	Violent shaking of the Earth's crust, caused by the release of energy at plate boundaries.
26. Focus	The point in the crust where the energy is released.
27. Epicentre	The point on the surface, directly above the focus.
28. P Wave	Primary waves released by earthquakes. Move through solids and liquids. Very fast.
29. S Wave	Secondary waves released by earthquakes. Move on the surface and cause the shaking. Move much slower.
30. Hazard Map	Identifying and mapping areas of increased risk and vulnerability to a hazard.
31. Tsunami	Giant waves formed in a large body of water, usually in the sea or ocean.
32. Megathrust	An earthquake caused by the 'bouncing back' of the continental plate at a destructive plate boundary.

Steam, gas and ash cloud
Crater
Vent
Lava Flow
Parasitic Cone
Layers of ash
Magma Chamber
Dyke
Sill
Laccolith

Earthquake Distribution

1900-2017

Legend
9.0-
8.0-8.9
7.0-7.9
6.0-6.9

Computer-controlled weights on roof to reduce movement
'Birdcage' interlocking steel frame
Steel frames that can sway during earth movements
Outer panels flexibly attached to steel structure
Automatic window shutters to prevent falling glass
Fire-resistant building materials
Roads to provide quick access for emergency services
Open areas where people can assemble if evacuated
Foundations sunk into bedrock, avoiding clay
Rubber shock-absorbers to absorb earth tremors
Earthquake-proofed building

Year 9 History Autumn knowledge organiser- WW1

1) Timeline
1914-1918: First World War
1914: Battle of Mons; Battle of the Marne; First Battle of Ypres
1915: Second Battle of Ypres; first use of poison gas
1916: Battle of Verdun; July-Nov Battle of the Somme; conscription introduced
1917: Battle of Arras; 3rd Battle of Ypres, including Battle of Passchendaele; Battle of Cambrai;
1918: German Spring Offensive; Hundred Days' Offensive by Allies, including Battle of Amiens, drives Germany back
11th November 1918: armistice day

Key terms
1) **Empire:** countries ruled by another country e.g British Empire- countries ruled by Britain
2) **Western Front:** area of northern France and Belgium where British and French troops fought Germans in trenches. Most of the fighting took place here.
3) **India:** The country in the British Empire that contributed the most troops, after Britain
4) **Alliance:** an agreement between two or more countries to work together, making them allies.
5) **Central Powers:** Germany, Austria-Hungary and Turkey
6) **Allied Powers:** France, Britain and Russia
7) **Armistice:** agreement to stop fighting, ending the war
8) **Trench:** a ditch in the ground, dug and reinforced by soldiers, for protection

Armed forces
9) **recruit:** to persuade someone to enlist (to join the army)
10) **conscription**: made it compulsory for men aged 18-45 to join the army
11) **conscientious objector:** someone who refuses to fight because of their principles or beliefs
12) **casualty:** someone killed or wounded

Individuals/ groups
13) **Alhaji Grunshi:** *the first British soldier to fire a shot in the war, in* **West Africa**
14) **General Haig:** *commander of British Expeditionary Force*
15) **'Tommies':** *informal word for ordinary British soldiers*
16) **Pals Battalion:** *battalion (section) of the army into which men were recruited with their friends, to encourage them to enlist*
17) **WAAC** – *Women's Army Auxiliary Corps, created in 1917 to allow women to serve in a supporting role in the army*
18) **VAD** – *Voluntary Aid Detachment, an organisation in which women could serve supporting nurses and medical staff*

Causes of the First World War

Timeline
1882: Germany made the Triple Alliance with Austria-Hungary and Italy
1907: France, Britain and Russia formed an alliance: the Triple Entente
1908: A-H annexed [took over] Bosnia
1914
28 June: Serb nationalists assassinated Archduke Franz Ferdinand in Sarajevo, Bosnia
23 July: A-H declared war on Serbia
1 August: GER declared war on Russia
3 August: Germany declared war on France and attacked through Belgium
4 August: Britain declared war on GER
6 August: Austria-Hungary declared war on Russia

Countries and alliances
1) Triple Alliance: Germany, Austria-Hungary and Italy
2) Triple Entente: France, Britain and Russia
3) Austria-Hungary: ruled a large empire in central and eastern Europe; wanted control in the Balkans and access to the Mediterranean
4) Russia: ruled a large empire in the east and across Asia; wanted access to the Mediterranean from the Black Sea, and influence in the Balkans
5) The Balkans: south-east Europe: *Serbia, Bulgaria, Romania, Greece, Albania, Montenegro*
6) Germany: unified as a state/empire in 1871, wanted to extend power/empire in Europe and beyond; *building a powerful navy*
7) Great Britain: ruled a large empire *including India, Canada, Australia and parts of Asia and Africa*; relied on navy for security through control of sea routes
8) France: defeated by Germany in 1871 and lost (Alsace-Lorraine); *empire in Africa, extended control of Morocco 1905 and 1911*
9) Bosnia: a small country ruled by Austria-Hungary
10) Serbia: wanted control of Bosnia

People with power
11) Emperor Franz Josef: emperor of Austria-Hungary
12) Kaiser Wilhelm: emperor of Germany
13) Tsar Nicholas: emperor of Russia

July 1914
14) Archduke Franz Ferdinand: heir to the throne of Austria-Hungary
15) Gavrilo Princip: a Bosnian student, member of the Black Hand, a gang who hated Austrian rule of Bosnia
16) Schlieffen Plan: Germany's plan to fight and win a war against France and Russia, by defeating France first

Ideas and attitudes
17) Imperialism: pride in empire, a desire to expand
18) Nationalism: pride in one's country, possibly leading to
- A desire for independence
- Hostility to rival countries
- Competition between 'races'/ peoples/nations to survive and thrive

19) Militarism: Pride in and admiration for the armed forces and military values
20) Pacifism: a commitment to peace and rejection of war

Russia under Stalin's rule

Timeline

1914-1917: Russia fought Germany and Austria-Hungary in the First World War

February 1917: revolution in Russia overthrew the Tsar's government

October 1917: another revolution, Lenin and the Bolsheviks seized power, intending to introduce Communism in Russia

1921: Russia renamed the USSR *(Union of Soviet Socialist Republics) [Socialist ≈ Communist]*

1924: Lenin died

1927: Stalin consolidated his position as leader of the USSR

1928: First Five Year Plan introduced to modernise agriculture and industry in the USSR

1932-3: a serious famine in the USSR kills millions

1936-8: Great Terror – millions arrested and killed

Key people

1) **Karl Marx**: philosopher who suggested the idea of Communism
2) **Tsar Nicholas II**: emperor of Russia, lost control in the revolution of February 1917
3) **Vladimir Lenin**: leader of the Bolshevik group in the Russian Communist party, took power in Russia in October 1917
4) **Joseph Stalin**: became leader of the USSR after Lenin's death in 1924

Places

5) **Moscow**: capital city of Russia/the USSR after 1917

6) **Leningrad**: major city formerly (and now) called St Petersburg

7) **Siberia**: remote region of Russia, partly in the Arctic; many **gulags** (labour prison camps) were located here

8) **USSR**: the Russian empire after 1921

9) **Soviet**: Russian/belonging to Russia after 1921

shutterstock.com · 1742608364

10) **Bolshevik Revolution**: Lenin and the Bolsheviks promised 'peace, bread and land'

11) **Communism**: the ideal of abolishing private property to create equality and govern in the interests of working people

12) **Five Year Plan**: a plan to create large collective farms and build lots of factories to modernise the USSR

13) **Collectivisation**: small family farms were grouped together to create one large farm owned by the government and worked by the peasants

14) **Kulak**: farmers accused of being 'rich and selfish', anyone who opposed collectivisation

15) **Kommunalka**: communal apartments where many families lived together sharing kitchens and bathrooms

16) **Great Terror**: suspected opponents of the regime from the Communist party, *the government, writers, musicians, artists, scientists, army officers, and many others* were arrested; many were shot without trial; some trials were rigged; some were taken to gulags

17) **NKVD**: the secret police, responsible for arresting anyone suspected of opposing the Soviet government

18) **Gulag**: prison/slave labour camp system in the USSR; *anyone thought to be an opponent or enemy of the government or causing problems was deported to work in these*

Extension

19) *Deaths in the famine*: estimated between 5m and 9m across the USSR

20) *Prisoners in the gulags by 1938*: 2 million

21) *Deaths in the gulags*: 1-3 milion

22) *Arrests during the Terror*: 1.3 million or more

SPANISH 1

Vocabulary 1 – HOLIDAYS

01 ¿Adónde fuiste?	01 Where did you go?
02 de vacaciones	02 on holidays
03 El año pasado	03 Last year
04 El verano pasado	04 Last summer
05 Fui a España	05 I went to Spain
06 Fuimos a Francia	06 We went to France
07 ¿Con quién fuiste?	07 Who did you with?
08 Fui con mis amigos/as	08 I went with my friends
09 Fui con mi clase	09 I went with my class
10 Fui en avión	10 I went by plane
11 Fuimos en autocar	11 We went by coach
12 Fui en barco	12 I went by boat
13 Fuimos en coche	13 We went by car
14 Fui en tren	14 I went by train
15 No fui de vacaciones	15 I didn't go on holidays
16 ¡Qué bien!	16 How great!
17 ¡Qué mal!	17 How bad!
18 ¡Qué suerte!	18 How lucky!
19 ¡Qué horror!	19 How horrible
20 ¡Qué lástima!	20 What a shame!

Vocabulary 2 – ACTIVITIES I

01 ¿Qué hiciste?	01 What did you do?
02 Bailé	02 I danced
03 Compré una camiseta	03 I bought a T-shirt
04 Saqué fotos	04 I took photos
05 Monté en bicicleta	05 I rode my bike
06 Descansé en la playa	06 I relaxed on the beach
07 Mandé SMS	07 I sent text messages
08 Visité monumentos	08 I visited monuments
09 Nadé en el mar	09 I swam in the sea
10 Tomé el sol	10 I sunbathed
11 el primer día	11 the first day
12 más tarde	12 later
13 después	13 afterwards
14 normalmente	14 normally
15 cada año	15 every year
16 siempre	16 always
17 generalmente	17 generally
18 nunca	18 never
19 todos los días	19 every day
20 de vez en cuando	20 from time to time

Vocabulary 3 – ACTIVITIES II

01 Comí paella	01 I ate paella
02 Salí con mi hermana	02 I went out with my sister
03 Salí con mi hermano	03 I went out with my brother
04 Escribí SMS	04 I wrote text messages
05 Vi un castillo	05 I saw a castle
06 Bebí una limonada	06 I drank a lemonade
07 Conocí a un chico	07 I met a boy
08 Conocí a una chica	08 I met a girl
09 ¿Cuándo?	09 When?
10 por la mañana	10 in the morning
11 por la tarde	11 in the afternoon / evening
12 por la noche	12 at night
13 el último día	13 on the last day
14 Salimos con mi hermana	14 We went out with my sister
15 Escribimos SMS	15 We wrote text messages
16 Vimos un castillo	16 We saw a castle
17 Bebimos una limonada	17 We drank a lemonade
18 Comimos paella	18 We ate paella
19 Fuimos al bar	19 We went to the pub
20 Fuimos a la cafetería	20 We went to the café

Vocabulary 4 – OPINIONS

01 ¿Cómo te fue?	01 How was it?
02 Fue guay	02 It was cool
03 Fue raro	03 It was weird
04 Fue regular	04 It was okay
05 Fue un desastre	05 It was a disaster
06 Fue horrible	06 It was horrible
07 Fue divertido	07 It was fun
08 Fue flipante	08 It was awesome
09 Fue genial	09 It was great
10 Fue horroroso	10 It was terrible
11 ¿Por qué?	11 Why?
12 porque	12 because
13 hizo buen tiempo	13 it was good weather
14 hizo mal tiempo	14 it was bad weather
15 llovió	15 it rained
16 perdí mi pasaporte	16 I lost my passport
17 perdí mi móvil	17 I lost my mobile phone
18 comí algo malo	18 I ate something bad
19 vomité	19 I vomited
20 Me encantó	20 I loved it

GRAMMAR

-AR VERBS (Past Tense)

Visitar	To visit
Visité	I visited
Visitaste	You (sg.) visited
Visitó	He/She visited
Visitamos	We visited
Visitasteis	You (pl.) visited
Visitaron	They visited

-ER VERBS (Past Tense)

Comer	To eat
Comí	I ate
Comiste	You (sing.) ate
Comió	He/She ate
Comimos	We ate
Comisteis	You (pl.) ate
Comieron	They ate

-IR VERBS (Past Tense)

Escribir	To write
Escribí	I wrote
Escribiste	You (sing.) wrote
Escribió	He/She wrote
Escribimos	We wrote
Escribisteis	You (pl.) wrote
Escribieron	They wrote

ir	to go		
fui	I went	fuimos	we went
fuiste	you went	fuisteis	you (pl) went
fue	he/she went	fueron	they went

me gusta	I like (it)	me gustó	I liked (it)
me encanta	I love (it)	me encantó	I loved (it)

SPANISH 2

Vocabulary 5 – HIGH FREQUENCY WORDS

01 bastante	01 quite		
02 no	02 no/not		
03 muy	03 very		
04 pero	04 but		
05 también	05 also, too		
06 un poco	06 a bit		
07 y	07 and		
08 algo	08 something		
09 donde	09 where		
10 hay	10 there is/are		
11 o	11 or		
12 ¿por qué?	12 why?		
13 porque	13 because		
14 tampoco	14 neither		
15 ni	15 nor/neither		
16 además	16 in addition, moreover		
17 mi/mis	17 my		
18 tu/tus	18 your		
19 su/sus	19 his/her		
20 con	20 with		

Vocabulary 6 – HIGH FREQUENCY ADJECTIVES I

01 divertido/a	01 fun, funny, amusing
02 estupendo/a	02 brilliant
03 fenomenal	03 fantastic
04 generoso/a	04 generous
05 genial	05 great
06 guay	06 cool
07 listo/a	07 clever
08 serio/a	08 serious
09 simpático/a	09 nice, kind
10 sincero/a	10 sincere
11 tímido/a	11 shy
12 tonto/a	12 silly
13 tranquilo/a	13 quiet, calm
14 aburrido/a	14 boring
15 difícil	15 difficult
16 fácil	16 easy
17 importante	17 important
18 interesante	18 interesting
19 práctico/a	19 practical
20 útil	20 useful

Vocabulary 7 – HIGH FREQUENCY ADJECTIVES II

01 blanco/a	01 white
02 amarillo/a	02 yellow
03 negro/a	03 black
04 rojo/a	04 red
05 verde	05 green
06 gris	06 grey
07 marrón	07 brown
08 azul	08 blue
09 rosa	09 pink
10 naranja	10 orange
11 antiguo/a	11 old
12 bonito/a	12 nice, pretty
13 bueno/a	13 good
14 malo/a	14 bad
15 feo/a	15 ugly
16 grande	16 big
17 horrible	17 horrible
18 moderno/a	18 modern
19 pequeño/a	19 small
20 inteligente	20 intelligent

Vocabulary 8 – HIGH FREQUENCY VERBS

01 Me llamo	01 I am called
02 Vivo	02 I live
03 Bailo	03 I dance
04 Canto	04 I sing
05 Hablo	05 I talk, I speak
06 Escucho	06 I listen
07 Escribo	07 I write
08 Leo	08 I read
09 Monto en bici	09 I ride my bike
10 Toco la guitarra	10 I play the guitar
11 Hago	11 I do
12 Juego	12 I play
13 Estudio	13 I study
14 Como	14 I eat
15 Bebo	15 I drink
16 Voy	16 I go
17 Salgo	17 I go out
18 Quiero	18 I want
19 Llevo	19 I wear
20 Mando	20 I send

GRAMMAR

Irregular verb SER = to be (permanent)

Soy	I am
Eres	You (sing.) are
Es	She/He is
Somos	We are
Sois	You (pl.) are
Son	They are

Irregular verb ESTAR = to be (temporary)

Estoy	I am
Estás	You (sing.) are
Está	She/He is
Estamos	We are
Estáis	You (pl.) are
Están	They are

Irregular verb TENER = to have

Tengo	I have
Tienes	You (sing.) have
Tiene	She/He has
Tenemos	We have
Tenéis	You (pl.) have
Tienen	They have

	singular	plural
my	mi hermano	mis hermanos
your	tu hermano	tus hermanos
his/her	su hermano	sus hermanos

Opinions (Singular vs Plural)

Me encanta / Me encantan	I love
Me gusta / Me gustan	I like
Me gusta mucho / Me gustan mucho	I like a lot
No me gusta / No me gustan	I don't like
No me gusta nada / No me gustan nada	I don't like at all
Odio	I hate

COMPUTER SCIENCE 1

What is Cyber Security

Is protecting networks, computers, programs and data from attack, damage or unauthorised access through the use of technologies, processes and practices.

The difference between Data and Information

Data is raw facts and figures. For example, a lists of test results for a class. Without any context or analysis, the data may be of limited use on its own.

Information is created when that data has been processed and becomes meaningful: For example, these are scores from a test where the pass mark was 35.

Social Engineering

Manipulating individuals so they give away personal information (e.g. bank account).

Blagging - inventing a scenario to target someone into divulging info. Companies can give employees security training.

Phishing - fraudulently obtaining personal info (using e.g. email or SMS). Beware of links in emails!

Pharming - Cyber-attack to redirect a website's traffic to another, fake site. Check the http address has http's'

Shouldering - observing a person's private info over their shoulder (e.g. ATM)

Name Generator Attacks

These are attacks in which the victim is asked in an app or a social media post to combine a few pieces of information or complete a short quiz to **produce a name.** Attackers do this to find out key pieces of information that can help them to answer the security questions that protect people's accounts.

Protection methods

Measures can used to make it more difficult for attackers.

Firewalls

A firewall checks incoming and outgoing network traffic. It scans the data to make sure it doesn't contain anything malicious and that it follows the rules set by the network.

Anti-malware

The anti-malware will have a list of **definitions** of sequences of code that they are aware are malicious. If the code in your files matches the definitions, the files are quarantined.

Auto-Updates

Software that automatically checks for available updates

Malicious code and attacks

Malware - umbrella term to describe a variety of hostile or intrusive software. **Six categories: Virus, Trojans, Worms, Adware, Spyware and Ransomware.**

• **Computer virus** - installed on your computer without your permission with the intention to do harm. Viruses spread through email attachments or IM services OR through files/programs downloaded

• **Trojan** - pretends to have a legitimate purpose. Spread by email

• **Spyware** - gathers info without user knowing (e.g. bank account details).

• **Adware** - internet usage analysed and then advertising targeted.

• **Hacking** – Gaining unauthorised access of a computer.

• **Script kiddie** – Are hackers who use tools downloaded from the internet that allow them to hack with little technical knowledge.

• **Denial of Service Attack (Dos)** – Floods a targeted computer or website with lots of requests and internet traffic in an attempt to overload the system.

• **Distributed Denial of Serve Attack. (DDos)**– This uses the same concept as a DoS attack but this time it is multiple computers making the attack at the same time.

• **Brute Force Attack** – This makes multiple attempts to discover something, for example a password.

Key Vocabulary

Key Word	Definition
Botnet	A large collection of malware infected devices.
Hacking	This can be Ethical or Un-ethical hacking
User permissions	Users on a network can be put into groups, with each group having a unique set of privileges.
User Authentication	Secure passwords, maximum number of attempts, CAPTCHA, Biometrics, Two-factor identification.
Internet bot	Automated programs that perform tasks repeatedly. Bots ca have a malicious intent. .
Ransomware	Self-replicating virus – Locks a computer, encrypts files and demands a ransom paid before they decrypt the files and unlock the computer.
Viruses	Malicious from of self-replicating software.

Legislation

Data Protection Act 2018

All organisations and people using and storing personal data must abide by the following principles.

Your rights

As a **data subject**, you have the right to find out what information the government and other organisations store about you.
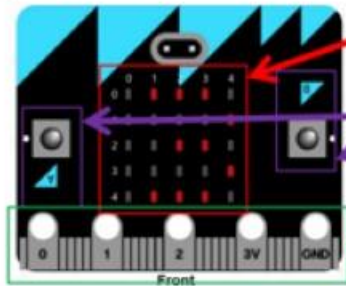
Computer Misuse Act 1990

Designed to make hacking into computer systems a criminal offence with a potential jail sentence of up to 10 years and an unlimited fine.

COMPUTER SCIENCE 2

The Micro:Bit

The BBC Micro:Bit is a pocket-sized codable computer. It is fully programmable...you can turn it into whatever device you want (within reason). Let's explore it!

25 Programmable LEDs
These can be programed to display text, numbers or the objects in simple games!

Two Buttons
These can be independently programed to produce different actions when pressed. They can also be programmed to produce actions if pressed together.

Input / Output (I/O) Connectors
Different 'external' devices can be attached to the micro:bit (such as a motor or a speaker).

Front

USB Connector
Enabling the Micro:Bit to connect to the PC in order to 'flash' your programs onto it.

Reset Button
This is used to reset / restart your program, when it is in use.
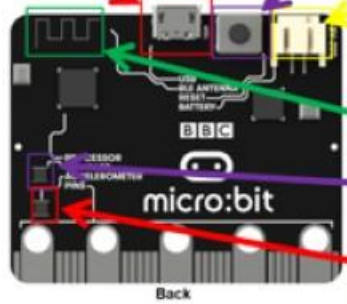
Battery Connection
This can be used to connect the battery pack so you can use the Micro:Bit as a mobile device.

BlueTooth Antenna
Enabling the Micro:Bit to connect to devices wirelessly

A Compass
This can be used to create programs which requires data about which way the Micro:Bit is facing.

An Accelerometer
This can be used to sense movements in the Micro:Bit device.

Back

How do we program the Micro:Bit?

We program the Micro:Bit use the tools and facilities at https://makecode.microbit.org/. We can write our code in either a blocks-based language or text-based language.

The process of getting our Micro:Bits working (with software) is as follows:

Code it → Compile it → Flash it

First we code our program. We can check it works by using the online Micro:Bit emulation.

Then we compile the code. This is where our code is converted into binary (zeros and ones) so that the Micro:bit's CPU can process the program.

Finally, we transfer the compiled program onto the device. Flashing is where the code is stored on the Micro:bit's memory chip, ready to be executed (run)

Event Driven Programming

As the Micro:Bit is a portable device, we may choose to program it to respond to events, for example, the clicking of a button or perhaps movement.

When using the blocks-based language, there are some blocks which will help us run code, when these events occur.

On Button Press – Event

Here is an example of a script which will generate and display a random number (via the board's LEDs) when the 'A' button is pressed.

On Shake - Event

Similarly, here is an example of a script which will generate and display a random number (via the board's LEDs) when the Micro:Bit is shaken. This shake event will be sensed by the board's accelerometer, which will result in the execution of the code.

The Compass

Amazingly, the Micro:Bit contains an onboard compass which measures the direction that the board is facing, storing this measurement as a compass bearing.

The following code, when compiled and run on the Micro:Bit, can demonstrate this, by constantly displaying the board's compass direction via the LEDs.

And by using some IF statements (which allow programs to run different lines of code, depending on conditions), we can program the Micro:Bit to display the directions East, South, West and North, via text, depending on the compass bearings measured at that moment in time. Here is a glimpse of the top half of a code snippet to demonstrate this logic:

Key Vocabulary

Key Word	Definition
Micro:Bit	A miniature computer which is fully programmable.
Compile	The process of translating our program code into machine code.
Flash	The process of transferring machine code onto a computer chip
Accelerometer	A component of the Micro:Bit which can sense movement.
Variables	A memory store in a program (think of it as a box which stores a piece of data).
Coordinates	A system which enables us to locate the position of an object using a horizontal (x) and vertical (y) on a screen. For example, a pixel on a screen.
Syntax	The set of rules and key words that govern the structure of a programming language.

Text-Based Programming

Programming with 'Blocks' is great! But, there is a limit with what you can do. If you wish to get your Micro:Bit working with other components like motors and screens, we need to use a more advanced language.

Luckily, the Micro:Bit can be coded in Python.

Programming in Python

To get started, choose 'Python' from 'Code options' on the 'create project' popup. You will be taken to the MicroPython IDE (programming environment). Here you can write your code, simulate the code in the Micro:Bit simulator, and download the compiled program, ready to flash it onto your device.

Example Python Program – *Using the Temperature Sensor*

The Micro:Bit has a built in thermometer and the following program makes use of it!

```
1    while True:
2        current_temp = input.temperature()
3        basic.show_number(current_temp)
```

This program begins with the code "while True". This line is effectively a forever loop. The code inside it (indented underneath) will run repeatedly.

The first line inside the loop will read the temperature of the thermometer and store it in a variable called 'current_temp'. Then, the second line displays the contents of the variable on the screen.

Key Themes:
- Childhood and Adolescence
- Superstition
- Violence
- Nature vs Nurture
- Social Class

WILLY RUSSELL'S BLOOD Brothers

Set from 1960 – 1980
In Liverpool, England

1.	A didactic play	A drama which intends to teach, especially with regard to morals.
2.	Tragedy	An event causing great suffering, destruction and distress.
3.	Parallels and contrasts	Parallels – similarities. Contrasts – differences.
4.	Narrator	A person who gives the spoken account of something. Omniscient to remind the audience about the ending of the play.
5.	Stage directions	An instruction in the text of the play indicating the movement, the position or tone of an actor, or the sound effects and lighting.
6.	Song	A single work of music that is typically intended to be sung by the human voice. It is through the songs that the characters reveal their true thoughts and feelings.
7.	Dialogue	A conversation between two or more people.
8.	Montage	A series of short sequences are edited into a sequence to condense space.
9.	Foreshadowing	A warning or indication of a future event.
10.	Symbols and motifs	A thing that represents or stands for something else. A motif is a dominant or recurring image of idea.
11.	Accent and dialect versus Standard English	Standard English is any form of the English Language that is accepted as a national norm. Accent is a distinctive way of pronouncing a language. Dialect is a particular form of language which is peculiar to a specific range or social group.

Symbolism	The use of props, gestures, setting, lighting etc to represent other things and their meaning
Monologue	A speech made by one character, either to another character or the audience
Split Stage	When the stage is split into different areas representing different places or times
Un/reliable narrator	A character who comments on the action and the plot to the audience
Blocking	The process of positioning the actors on stage and planning their movements to maintain good sightlines for the audience
Dramatic Irony	When the audience knows something the characters do not

Context

Willy Russell	1.	Born into a working class family.
	2.	He grew up near Liverpool.
	3.	Father had various jobs including mining and factory work.
	4.	Annoyed at treatment of intelligent working class and associated stereotypes.
	5.	Left school at 15 with just one O'level: a D in English Language. Went to evening classes and university to become a teacher.
Liverpool	6.	A major port and the centre for trade providing lots of jobs at the docks.
	7.	During the industrial decline, Liverpool became very vulnerable as the docks were shut and unemployment rates soared.
	8.	Some men turned to crime and gangs in order to support themselves and their families. There were also riots in 1980s.
Margaret Thatcher	9.	Prime Minister in 1979.
	10.	Reduced the power of the trade unions and closed down many factories etc leading to widespread unemployment.
Skelmersdale	11.	In the 1960s the government began building New Towns. These were small, existing towns which were extended and redeveloped to provide more housing for nearby cities.
	12.	Working class families were rehoused here in the 1960s.
Class	13.	Working class vs Middle class divide
	14.	More opportunities for middle classes reflected in education, job prospects and wealth.
Education	15.	The Education Act of 1944 led to 'secondary modern schools' and 'grammar schools.'
	16.	Top 20% went to a grammar school with an academic curriculum. Secondary modern taught more practical subjects.
	17.	7% of students were educated in private, fee-paying schools. The average boarding school fees in the 1960s would have been approximately 25%.

Characters

1.	Mrs Johnstone	Naïve, loving and maternal, caring, rash, strong, generous, good, selfless, uneducated, superstitious, lively, zesty, trapped, victim, helplessness,
2.	Mrs Lyons	Lonely, cold, wealthy, dependent, inconsiderate, pampered, self-centred, manipulative, over-protective, anxious, unreasonable, mad
3.	Mickey	Friendly, excitable, adventurous, sneaky, cast-off, wants to impress, shy, determined, bright, witty, hard-working, ambitious, trapped, victim
4.	Edward	Friendly, generous, naïve, restricted, impulsive, lacks compassion, condescending, sneaky
5.	Sammy	Aggressive, threatening, sarcastic, anti-social, criminal, hostile
6.	Linda	Kind, compassionate, feisty, humorous, strong-willed, supportive, protective, poor, untrustworthy, desperate

Design Elements – Lighting, Sound, Costume, Set and Props
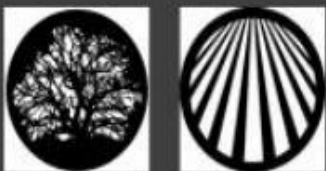
PROFILE SPOTLIGHT
Hard edge beam of light

FRESNEL
Soft edge beam of light

FLOOD LIGHT
Lights the entire stage

Gobos

Coloured Gels
A colour gel, or simply gel, is a transparent colored material that is used to colour light

SET		
Considerations: Space, Materials, Colours, Location, Levels, Symbolism, Time, Entrances/exits		
Style	Set design is hugely influenced by the style of the play (naturalistic/ realistic, expressionist, symbolic etc).	
Period	The time on history when the play is set.	
Colour	Reinforces mood, atmosphere, communicates meaning.	
Texture	Support key themes and ideas (a metallic texture will have a different meaning from earthy textures).	
Backdrop	A painted cloth hung at the back of a theatre stage as part of the scenery.	
Projection	Used to create a set, or show film or images. Can have a distancing or dreamlike effect.	
Entrances/ Exits	Position of entrances / exits, and how characters use them, can be significant.	
Cyclorama	Curved, stretched cloth around the back of the stage which gives the impression of sky or extensive space.	
Levels	Levels give a stage more visual interest, allowing different characters to communicate different status.	

COSTUME		
Considerations: Age, Status, Personality, Economic Climate, Symbolism, Practical		
Style	Concept of play and overall appearance.	
Period	Time the play is set.	
Naturalistic	Accurate to the period.	
Symbolic	Item / colour signals to the audience.	
Texture	The feel of the fabric.	
Representational	Single item that indicates a particular character.	
Breakdown	Make a costume appear shabby or dirty.	
Material	Cotton, wool, velvet, leather, metal, lace.	
Colour meanings	Red	Passion, desire, love, war, danger
	Yellow	Joy, happiness, cowardice, caution
	Green	Growth, harmony, fertility, jealousy
	Blue	Depth, trust, truth, depression
	Black	Power, elegance, formality, mystery, death, evil
	Purple	Power, wisdom, luxury, arrogance
	White	Purity, peace, cold, clinical.

SOUND		
Considerations: Mood/ Atmosphere, Location, Time, Symbolism, Volume, Tone, Sound effects		
Live Music / Sound	Live music / sound is where the performers or musicians generate the music /sound on stage.	
Recorded Sound	Sounds that have been pre-recorded and are then played through speakers/a PA system.	
Pitch	This relates to whether a sound is high or low.	
Volume	This relates to whether a sound is loud or quiet.	
Sound Effects	Can be pre-recorded or played live. Can reflect what is happening on or off stage. Can be naturalistic or abstract depending on the style of the performance.	
Direction	Speakers and musicians can be positioned anywhere within the space and create impact on an audience.	

PROPS AND STAGE FURNITURE		
Props	Any moveable items that the performer uses on stage - does not include costume or scenery.	
Stage furniture	Parts of the set that performers can move during the performance. Can communicate location, time period or style, or the status of the characters.	
Personal props	Props that are used for individual characters. Could help find nuances in the character.	

TYPES OF STAGING	
Proscenium Arch	Most common type of staging in Western Theatre - the audience sits on one side only, also known as end-on staging.
In The Round	Positioned at the centre of the audience, who sit around the whole stage. Creates an intimate atmosphere, is good for audience involvement.
End-on-stage	Found in a studio theatre. Seats face the stage space at one end. No proscenium arch.
Thrust	Extends into the audience on three sides and is connected to the backstage area by its upstage end. Greater intimacy between performers.
Traverse	Like a catwalk, audience sit either side of stage. Brings audience closer to action & creates an intimate/ engaging atmosphere. Could be difficult to use without blocking sight lines.
Promenade	(Immersive) Audience members walk through the space to experience the performance.
Site specific theatre	These spaces are chosen as a key part of the production.
Amphi-theatre	He audience sit in a large and steep half bowl shape with a circular stage at the bottom. Originated from Ancient Greece.

MUSIC 1

MELODY – The pattern of pitch

Ascending= getting higher
Descending = getting lower
Conjunct= stepwise movement
Disjunct= leap wise movement
metamorphosis = small gradual changes to the motif
note addition = developing a motif by adding one or two notes as a new pitch or rhythm.

ARTICULATION- How the notes are played

Staccato= detached

Legato= smooth, connected

Accent= one note played louder

>

DYNAMICS- The volume

LOUD

ff very loud
f Fortissimo
        Forte
mf
mp
        Piano
p Pianissimo
pp very quiet

QUIET

Crescendo (gets louder)

<

Diminuendo (gets quieter)

>

TEXTURE- How the layers of sound fit together

Unison= Everybody plays the same thing at the same time
Polyrhythm= Multiple different rhythms played at the same time
Polyphonic= Multiple different layers played at the same time
Call & response= One short musical phrase followed by another or the same

STRUCTURE- How the sections are ordered

Groove= the main section
Paradhina= everyone plays 5 quavers
Cadence= "this is the way we stop"
Ostinato = a short musical pattern that repeats

INSTRUMENTATION - the tools used to play the music

Percussion = a family of instruments that make a sound by hitting part of it, often with a beater, mallet or hand.
Samba kit = (see below)

surdo
repenique
tambourim
agogo
caixa
ganza
apito

TEMPO- the speed

Andante   Allegro
Adagio   Accelerando   Ritardando   Vivace
Grave   Presto

SLOW Lento. Pause. FAST

RHYTHM & METRE- The duration of notes and how they are grouped

Syncopated = off beat rhythm
Triplet quavers = 3 quavers played evenly in the space of 2
Metre/ time signature: how many beats per bar
Simple - when the strong beats can be divided evenly into 2
Compound - when the strong beats can be divided evenly into 3
rhythmic displacement = when the same musical idea becomes offset by a different amount of beats.
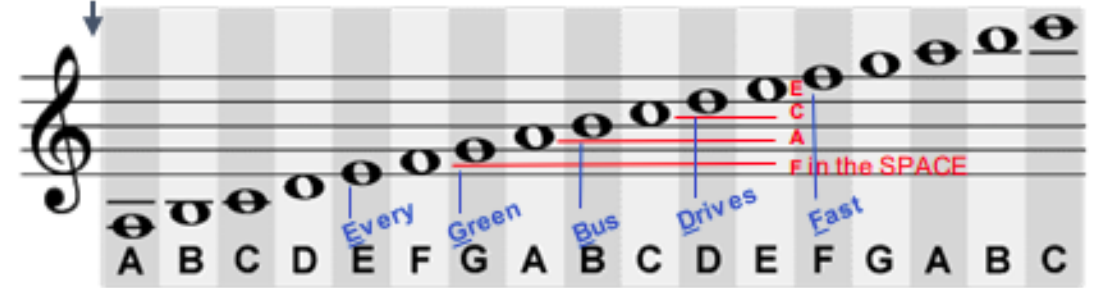
Listening questions:
1. What devices can you hear?
2. Describe the pitch and rhythm of the main part
3. Does anything else change during the piece? (e.g. dynamics, texture, instrumentation) What? When?
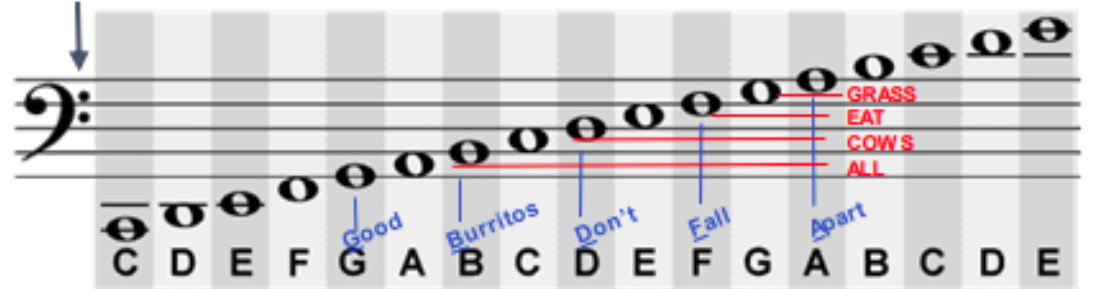
Reading and writing Western Music Notation:

For **rhythm**, we use note values. The symbol determines how long the note lasts.
For **pitch**, we use **clefs** on a **stave** (commonly 5 horizontal lines). The position determines how high/ low the note sounds.

British name	Note value	Rest	Number of beats
Semibreve	𝅝	𝄻	4 beats (or whole bar)
Minim	𝅗𝅥	𝄼	2 beats
Crotchet	𝅘𝅥	𝄽	1 beat
Quaver	♪ (𝅘𝅥𝅮𝅘𝅥𝅮)	𝄾	½ beat
Semiquaver	♬ (𝅘𝅥𝅯𝅘𝅥𝅯)	𝄿	¼ beat
Dotted quaver	♪.	𝄾.	¾ beat
Dotted crotchet	𝅘𝅥.	𝄽.	1 ½ beat

Treble Clef

A B C D E F G A B C D E F G A B C
Every Green Bus Drives Fast
E C A F in the SPACE

Bass Clef

C D E F G A B C D E F G A B C D E
Good Burritos Don't Fall Apart
GRASS EAT COWS ALL

Notes for piano/ keyboard/ glockenspiel/ xylophone

Clef   Time signature   Bar lines
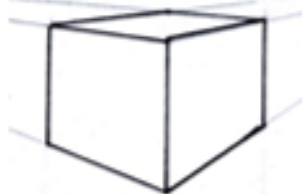
Key signature   Notes
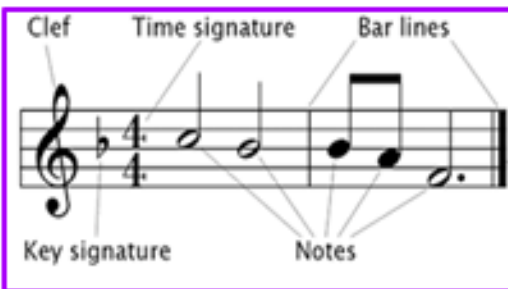
TOP TIPS:
- The less detail there is to a note symbol the longer it lasts.
- Like a graph, follow the X axis for time/ rhythm, and the Y axis for pitch.
- The musical alphabet only uses ABCDEFG. Sharp (#) is higher, flat (b) is lower.
- Practise practise practise!

Online resources:
www.virtualpiano.net
www.musictheory.net
www.youtube.com/@BarronimoMusic

ART 1

|	
1. Tone	The lightness or darkness of colour. This can be used to suggest 3D form and depth.
2. Render	The process of creating the effects of light, shade and light source to achieve contrast in drawings
3. Contour	Lines that are used to define the shape or form of an object
4. Linear Perspective	The technique of creating an illusion of depth by using vanishing points and converging lines. Invented by Italian architect Filippo Brunelleschi in the early 1400s.
5. The Renaissance 1400-1600	A period of cultural rebirth in Europe that marks the transition from the Middle Ages to modernity.
6. Context:	The historical, political and social conditions in which an artwork is made
7. One point perspective	Orthogonals (diagonal) lines recede back to ONE vanishing point. Objects appear face on.
8. Two point perspective	Orthogonals (diagonal) lines recede back to TWO vanishing points. Objects appear corner on.
9. Materiality	Focus on the materials used to make their artwork, It often includes the way they feel.
10. Slab Building	Using flat sheets of clay that can be cut to specific shapes and sizes and joined together to form a structure
11. Score	Scratching marks on the surface of the clay to join two pieces
12. Slip	A mixture of clay and water used to join or decorate pottery
13. Bisque Firing	The first firing when clay is heated in a kiln to bond the clay particles together making it stronger and more permanent
14. Glaze Firing	The second firing during which the glaze melts to form a glassy coat on the pottery.
15. Kiln	an oven or furnace that is used for hardening, burning, or drying something (such as pottery)
16. Photorealism 1960's- Present	A movement which employs an extremely realistic style of painting or drawing, in which the artwork is based entirely on a photograph
17. Subject Matter:	The object(s) or topic being represented in the artwork

Drawing Task 1: Tonal Pencil Drawing Task

1. Use your knowledge of **symmetry** and **shape to** help you plan your outline. Your drawing should be scaled to fit the box.

2. Sketch out the surface detail checking the proportion of these shapes in relation to the outline

3. Add any texture controlling your pencil to make the appropriate marks

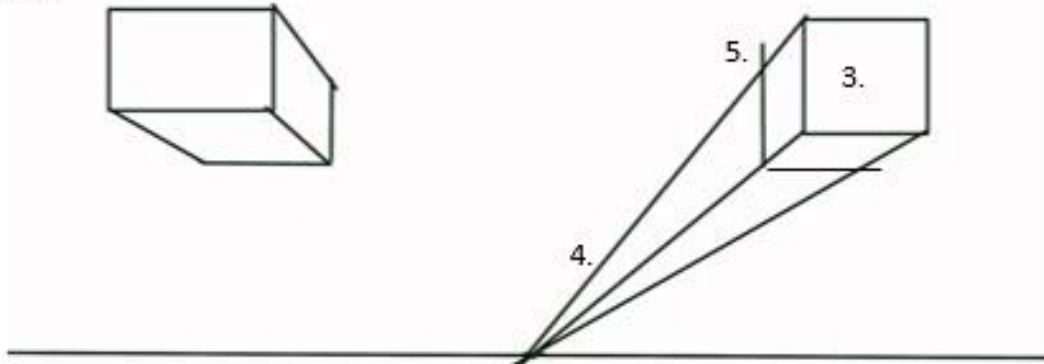4. Add tone by controlling pressure. If you have sketching pencils, you may wish to use these too.

Drawing Task 2: One Point Perspective Practice

YOUR TURN: *EXAMPLE*
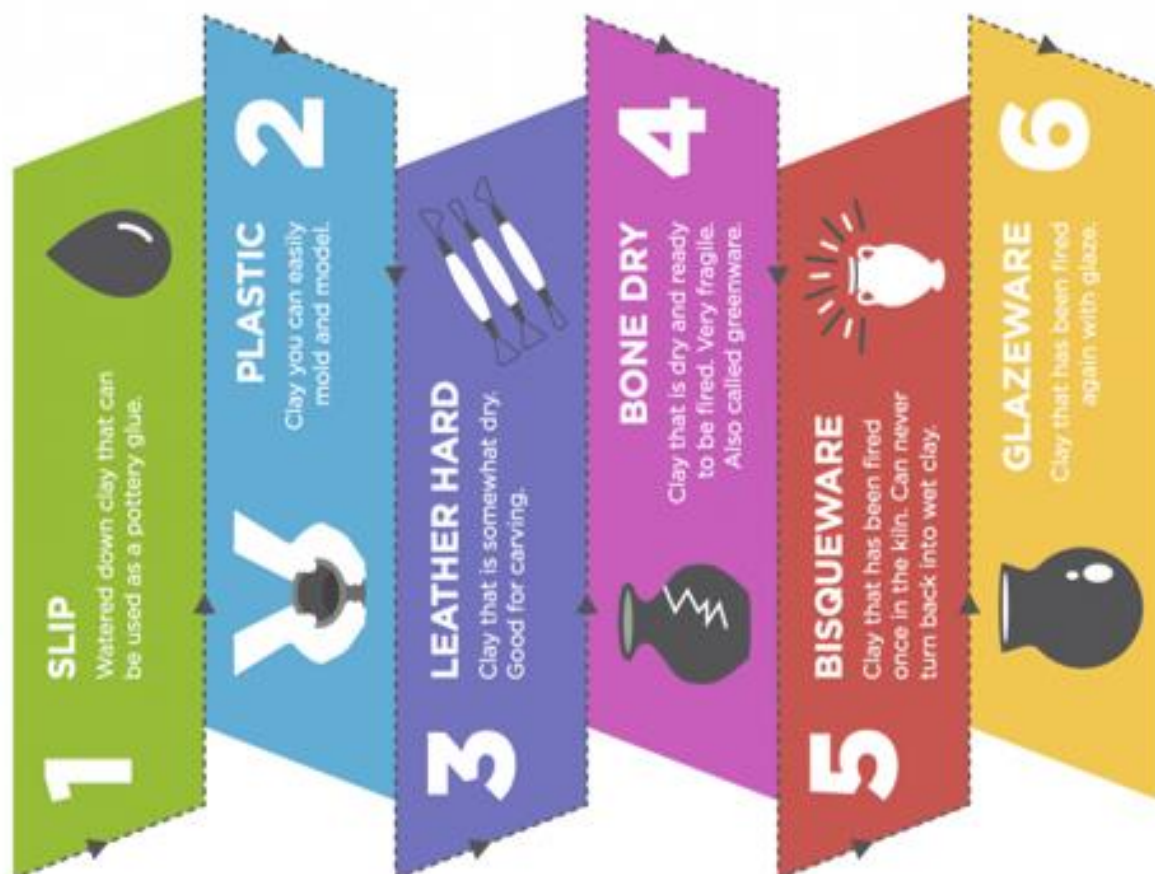
5.

3.

4.
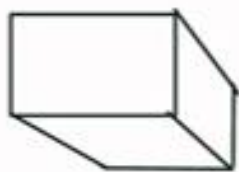
L. Eye line

2. Vanishing Point (VP)

1. Draw an eye line
2. Mark your vanishing point
3. Draw a regular shape e.g. square
4. Join the corners of the shape back to the vanishing point
5. Using your perspective guidelines to help, draw parallel lines to add depth to the shape and turn it into a form.
6. Erase your perspective guidelines

Youtube: How To Draw Cubes And Rectangular Solids In One Point Perspective - YouTube

THE 6 STAGES OF CLAY

1 SLIP
Watered down clay that can be used as a pottery glue.

2 PLASTIC
Clay you can easily mold and model.

3 LEATHER HARD
Clay that is somewhat dry. Good for carving.

4 BONE DRY
Clay that is dry and ready to be fired. Very fragile. Also called greenware.

5 BISQUEWARE
Clay that has been fired once in the kiln. Can never turn back into wet clay.

6 GLAZEWARE
Clay that has been fired again with glaze.

Drawing Task 3: One Point Perspective Text
Use the 1PP technique we have been practicing in class to turn this text into a 3D form

HI

NOPE

Challenge
Draw one of the following words using the guidelines and use the VP to turn it into a 3D form: FIZZ, POP AND BANG