Oasis Academy Silvertown Knowledge Organisers Autumn 1 2018 Year 11

Knowledge Organisers

Why are we using knowledge organisers?

Knowledge Organisers have been carefully planned and produced by teachers at Oasis Academy Silvertown this term for students in every subject in every year group. These organise the most important facts, dates, events, terminology, characters, concepts and definitions so that students have everything that they need to know in one place. Knowledge organisers support our students to embed this important knowledge in to their long term memory, providing a helpful resource for home learning, revision and lesson preparation. We expect all students to know everything on their knowledge organisers by the end of each half term.

How are they planned?

Our knowledge organisers are organised into columns and sections so that all students can cover one column and use the other to learn, test and revise the key information. The knowledge organisers are also written in carefully planned sections so that students can chunk their learning logically.

How can students use them?

All students will use their knowledge organisers in a minimum of three ways.

1. **Cover, check, write, correct.**
   Students cover the definition, quote or key term they wish to learn, write it out, check it and then make any necessary changes in a different colour pen.
2. **Dual coding**

   Students draw a picture or symbol for each key concept that they are learning. The use of pictures and words has been proven to support the embedding of knowledge in the long term memory.

3. **Quizzing**
   Knowledge organisers can be used by family members or friends to support learning by testing our students. Simply read a key term aloud and ask the student for the definition, or vice versa!
   e.g. What does .....mean?
   What is the key term that means.....?

Students must have their knowledge organisers with them at all times when at the Academy.

English: Dr Jekyll & Mr Hyde

Plot

1 The Story of the Door	Passing a strange-looking door whilst out for a walk, Enfield tells Utterson about incident involving a man (Hyde) trampling on a young girl. The man paid the girl compensation. Enfield says the man had a key to the door (which leads to Dr Jekyll's laboratory)
2 Search for Hyde	Utterson looks at Dr Jekyll's will and discovers that he has left his possessions to Mr Hyde in the event of his disappearance. Utterson watches the door and sees Hyde unlock it, then goes to warn Jekyll. Jekyll isn't in, but Poole tells him that the servants have been told to obey Hyde.
3 Dr Jekyll was Quite at Ease	Two weeks later, Utterson goes to a dinner party at Jekyll's house and tells him about his concerns. Jekyll laughs off his worries.
4 The Carew Murder Case	Nearly a year later, an elderly gentleman is murdered in the street by Hyde. A letter to Utterson is found on the body. Utterson recognises the murder weapon has a broken walking cane of Jekyll's. He takes the police to Jekyll's house to find Hyde, but are told he hasn't been there for two months. They find the other half of the cane and signs of a quick exit.
5 Incident of the Letter	Utterson goes to Jekyll's house and finds him 'looking deadly sick'. He asks about Hyde but Jekyll shows him a letter that says he won't be back. Utterson believes the letter has been forged by Jekyll to cover for Hyde.
6 Remarkable Incident of Dr Lanyon	Hyde has disappeared and Jekyll seems more happy and sociable until a sudden depression strikes him. Utterson visits Dr Lanyon on his death-bed, who hints that Jekyll is the cause of his illness. Utterson writes to Jekyll and receives a reply that suggests he is has fallen 'under a dark influence'. Lanyon dies and leaves a note for Utterson to open after the death or disappearance of Jekyll. Utterson tries to revisit Jekyll but is told by Poole that he is living in isolation.
7 Incident at the Window	Utterson and Enfield are out for walk and pass Jekyll's window, where they see him confined like a prisoner. Utterson calls out and Jekyll's face has a look of 'abject terror and despair'. Shocked, Utterson and Enfield leave.
8 The Last Night	Poole visits Utterson and asks him to come to Jekyll's house. The door to the laboratory is locked and the voice inside sounds like Hyde. Poole says that the voice has been asking for days for a chemical to be brought, but has rejected it each time as it is not pure. They break down the door and find a twitching body with a vial in its hands. There is also a will which leaves everything to Utterson and a package containing Jekyll's confession and a letter asking Utterson to read Lanyon's letter.
9 Dr Lanyon's Narrative	The contents of Lanyon's letter tells of how he received a letter from Jekyll asking him to collect chemicals, a vial and notebook from Jekyll's laboratory and give it to a man who would call at midnight. A grotesque man arrives and drinks the potion which transforms him into Jekyll, causing Lanyon to fall ill.
10 Henry Jekyll's Full Statement of the Case	Jekyll tells the story of how he turned into Hyde. It began as a scientific investigation into the duality of human nature and an attempt to destroy his 'darker self'. Eventually he became addicted to being Hyde, who increasingly took over and destroyed him.

Character

Dr Henry Jekyll	A doctor and experimental scientist who is both wealthy and respectable.
Mr Edward Hyde	A small, violent and deformed looking man; an unrepentant criminal.
Gabriel Utterson	A calm and rational lawyer and friend of Jekyll.
Dr Hastie Lanyon	A conventional and respectable doctor and former friend of Jekyll.
Richard Enfield	A distant relative of Utterson and well-known man about town.
Poole	Jekyll's manservant.
Sir Danvers Carew	A distinguished gentlemen who is beaten to death by Hyde.
Mr Guest	Utterson's secretary and handwriting expert.

Themes

- The duality of human nature
- Science and the unexplained
- The supernatural
- Reputation
- Women and weakness
- Urban terror
- Secrecy and silence
- Rich vs poor

The Exam

Example Question: Starting with this extract, how does Stevenson present Mr Hyde as a frightening outsider?

Information: 45 minutes. No choice of question. One extract followed by two bullet points, looking at first the extract, then the whole novella. You must learn your key quotes as you will NOT have a copy of the novella in the exam.

A01- Demonstrate an understanding of the question and text, use quotations to evidence understanding. (12 Marks)

A02- Carefully analyse the language, techniques and structure used by the writer and comment on the intended effect on the reader. Ensure that you include subject terminology in your response. Comment where you can on structure/form. (12 Marks)

A03- Show understanding of 19th century contextual information, in particular knowledge of Victorian London and the gothic genre. (6 Marks)

Stretch yourself

Be original, develop your own interpretations;
Be critical, give your own justified opinions;
Get to grips with context- what effect does have on the novel & your understanding – consider its application not just existence.
Be sure to comment on how it relates to the themes.

Vocabulary

- aberration
- abhorrent
- allegory
- allusion
- anxiety
- atavism
- consciousness
- debased
- degenerate
- depraved
- duality
- duplicity
- epistolary
- ethics
- eugenics
- feral
- genre
- metamorphosis
- perversion
- professional
- respectability
- restraint
- savage
- subconscious
- suppression
- supernatural
- unorthodox
- Victorian

Context

fears of disease and the Victorian Compromise– at the end of the 19th century, there were growing fears about: migration and the threats of disease; sexuality and promiscuity; moral degeneration and decadence.

Victorian values – from the 1850s to the turn of the century, British society outwardly displayed values of sexual restraint, low tolerance of crime, religious morality and a strict social code of conduct.

The implications of ***Darwinism and evolution*** haunted Victorian society. The idea that humans evolved from apes and amphibians led to worries about our lineage and about humanity's reversion to these primitive states.

Physiognomy – Italian criminologist Cesare Lombroso (1835-1909) theorised that the 'born criminal' could be recognised by physical characteristics, such as asymmetrical facial features, long arms or a sloping forehead.

Victorian London – the population of 1 million in 1800 to 6.7 million in 1900, with a huge numbers migrating from Europe. It became the biggest city in the world and a global capital for politics, finance and trade. The city grew wealthy.

Urban terror – as London grew wealthy, so poverty in the city also grew. The overcrowded city became rife with crime. The crowd as something that could hide sinister individuals became a trope of Gothic and detective literature.

Robert Louis Stevenson was born and raised in Edinburgh, giving him the dual identity of being both Scottish and British. Edinburgh was a city of two sides - he was raised in the wealthy New Town area, but spent his youth exploring the darker, more sinister side of town.

Deacon Brodie – a respectable member of Edinburgh's society and town councilor, William Brodie lead a secret life as a burglar, womaniser and gambler. He was hanged in 1788 for his crimes. As a youth, Stevenson wrote a play about him.

Ch1. About Utterson	He was austere with himself[...] and though he enjoyed the theatre, had not crossed the doors of one for twenty years.	Ch 5 Utterson about the handwriting	'I wouldn't speak of this note, you know,' said the master.
Ch1. Utterson:	I let my brother go to the devil in his own way.	Ch 6 Utterson:	The death of Sir Danvers was, to his way of thinking, more than paid for by the disappearance of Mr Hyde.
Ch1	The door, which was equipped with neither bell nor knocker, was blistered and distained. Tramps slouched into the recess and struck matches on the panels.	Ch 6 About Jekyll	He came out of seclusion[...] became once more their familiar guest and entertainer; and whilst he had always been known for charities, he was now no less distinguished for religion.
Ch1 Enfield:	The man trampled calmly over the child's body and left her screaming on the ground[...]it wasn't like a man; it was like a damned juggernaut.	Ch 6 about Lanyon	He had his death-warrant legibly written upon his face... his flesh had fallen away.
Ch1 Enfield:	But I have studied the place for myself. It seems scarcely a house.	Ch 6 Lanyon:	I beg that you will spare me any allusion to one whom I regard as dead.
Ch1 Enfield:	He is not easy to describe[...]I never saw a man I so disliked, and yet I scarce know why.	Ch 6 Jekyll:	I mean from henceforth to lead a life of extreme seclusion[...] you must suffer me to go my own dark way
Ch2 The will:	The said Edward Hyde should step into the said Henry Jekyll's shoes without further delay.	Ch 6 Jekyll:	If I am the chief of sinners, I am the chief of sufferers also.
Ch2 Lanyon:	He began to go wrong, wrong in the mind.	Ch 7 Enfield:	Well that story's at an end, at least. We shall never see more of Mr Hyde.
Ch2 About Utterson	His imagination was also engaged, or rather enslaved.	Ch 7 Jekyll's court	The court was [...] full of premature twilight, although the sky, high up overhead, was still bright with sunset.
Ch2 Utterson:	If he be Mr Hyde, I shall be Mr Seek.	Ch 7 about Jekyll	The smile was struck out of his face and succeeded by an expression of such abject terror and despair, as froze the very blood of the two gentlemen below.
Ch2	He was aware of an odd light footstep drawing near.	Ch 7	God forgive us! God forgive us! said Mr Utterson.
Ch2	Mr Hyde shrank back with a hissing intake of the breath.	Ch 8	It was a wild, cold, seasonable night of March, with a pale moon, lying on her back as though the wind had tilted her.
Ch2	The other snarled aloud into a savage laugh	Ch 8 Utterson:	There was born in upon his mind a crushing anticipation of calamity
Ch2	Mr Hyde was pale and dwarfish	Ch 8	The square [...] was all full of dust and wind and the thin trees in the garden were lashing themselves along the railing
Ch2 Utterson:	If ever I read Satan's signature upon a face,	Ch 8	The beetles were leaping on the floor.
Ch3 Jekyll:	An ignorant blatant pedant. I was never more disappointed in any man than Lanyon.	Ch 8 Poole	The masked thing like a monkey jumped from among the chemicals and whipped into the cabinet
Ch3 Jekyll:	The moment I choose, I can be rid of Mr Hyde.	Ch 8 Poole	Weeping like a woman or a lost soul.
Ch4 about the maid	It seems she was romantically given.	Ch 9 Lanyon	But I have since had reason to believe the cause [of peoples hatred of Hyde] to lie much deeper in the nature of man, and to turn on some nobler hinge than the principle of hatred.
Ch 4 About Carew	But the moon shone on his face as he spoke, and the girl was pleased to watch it, it seemed to breathe such an innocent and old-world kindness.	Ch10 Jekyll:	I stood already committed to a profound duplicity of life
Ch4	With ape-like fury, he was trampling his victim under foot, and hailing down a storm of blows[...] the bones were audibly shattered.	Ch10 Jekyll:	Man is not truly one, but truly two.
Ch4	A great chocolate covered pall lowered over heaven.	Ch 10 Jekyll:	Evil besides had left on that body an imprint of deformity and decay[...] I was conscious of no repugnance, rather of a leap of welcome.
Ch4	The haunting sense of unexpressed deformity.	Ch 10 Jekyll:	Hyde was indifferent to Jekyll, or but remembered him as the mountain bandit remembers the cavern in which he conceals himself from pursuit.
Ch5 about Utterson	He eyed the dingy windowless structure with curiosity, and gazed round with a distasteful sense of strangeness as he crossed the theatre[...] now laying gaunt and silent.	Ch 10 Jekyll:	The lower side of me, so long indulged, so recently chained down, began to growl for licence.
Ch5 Jekyll:	I swear to God I will never set eyes on him again. I bind my honour to you that I am done with him in this world.	Ch 10 Jekyll:	And then I smiled, comparing myself with other men, comparing their active goodwill with the lazy cruelty of their neglect
Ch 5 Jekyll:	I was thinking of my own character, which this hateful business has rather exposed.	Ch 10 Jekyll:	That child of hell had nothing human; nothing lived in him but fear and hatred.
Ch 5 Jekyll:	I wish you to judge for me entirely. I have lost confidence in myself.	Ch 10 Jekyll:	But his love of life is wonderful; and when I know how he fears my power to cut him off by suicide , I find it in my heart to pity him.

English Language Paper 1: reading fiction

60 mins (25% GCSE) - One literary fiction text. 4 questions.

QUESTION ONE

LIST 4 things in lines .....

❑4 marks = 5 mins
❑Extract referred to but not re-printed
❑AO1 - Locate

To answer:
- ❑ **Read and highlight key words in the question**
- ❑ Don't quote
- ❑ Don't use the word 'and'
- ❑ Write four short points in spaces A-D for 4 marks

Top tips:
This is not a trick question. It is easy. Be brief but accurate. Re-read the ***correct lines*** *from the text.*

QUESTION TWO

How does the writer use **LANGUAGE** to.....?

❑8 marks = 15mins
❑Extract re-printed on your answer page.
❑Bullet points guide your answer
❑AO2 – Language

To answer:
- ❑ **Read and highlight key words in the question**
- ❑ Pick your quotes **first** then consider devices
- ❑ Point (name writer)/Quote/Device/**Effect**
- ❑ DON'T DISCUSS STRUCTURE
- ❑ DO LOOK AT SENTENCE FORMS (simple/compound/complex)

Top tips:
Pick out individual words afterwards and discuss their ***effect*** *(not meaning). When you pick out a word/device you need to underline or re-quote it – so the examiners knows you know which word is the 'verb' etc. Think of squeezing or wringing the last drop of meaning from a passage.* ***Track*** *through the extract from start to finish.*

QUESTION THREE

How has the writer **STRUCTURED** the text to...?

❑ 8 marks = 15mins
❑You will need to consider the WHOLE text.
❑Bullet points guide your answer
❑AO2 - Structure

To answer:
- ❑ **Read and highlight key words in the question**
- ❑ Consider the **sequence** through a passage (introduction, development, summary and conclusion. Maybe also: contrast, flashback/forwards, repetitions, threads patterns of language or ideas, zooming in or out of scenery)
- ❑ Consider **changes** in ideas and perspectives (changing focus from wide to narrow, place to place, outside to inside(and vice versa).
- ❑ Consider **coherence**, (connections and links across paragraphs, links within paragraphs, topic sentences.)

Top Tips:
Comment in the writer's techniques like a film makers using phrases like: focusing, zooming, narrowing, widening, introducing, developing, changing focus, concluding, foreshadowing, contrasting. E.G. 'We start to see things through the father's eyes as if we are searching with him' or 'We go from a wide viewpoint to a close-up focus if we are getting inside the father's mind'

QUESTION FOUR

Statement written. How far do you **AGREE**?

❑20 marks = 25 mins
❑Bullet points guide your answer
❑AO4 – Evaluate

To answer:
- ❑ **Read and highlight key words in the question**
- ❑ Agree with the statement. The text IS well written.
- ❑ Two stages: recognising **how** the writer tries to achieve effects and deciding **how effectively** this has been done.
- ❑ Use phrases like: This makes the reader identify with the character because/ the impact of this description is.../ This works because we think/feel.../ This phrases indicates / The contrast used makes the reader....

Top Tips:
Leave enough time to cover the whole text. Consider HOW much you agree (a little or a lot). Look at specifics within the statement, not just the statement as a whole.) Could compare within a text.

The Mark Scheme

Bands 1-4	4 – DETAILED. PERCEPTIVE 3 - CLEAR, RELEVANT 2 - SOME,ATTEMPTS 1 – SIMPLE, LIMITED
Q1	• Reads with understanding • Identifies explicit information.
Q2/3	• Analyses the effects of writer's choices • Well-judged quotations • Sophisticated subject terminology
Q4	• Same as Q2/3 • Evaluates (judges the effectiveness of) the text in a detailed way

Basics & Stretch Yourself

Know your basics	Noun/verb/adverb/adjective/ simile/metaphor/question/ alliteration/ onomatopoeia/5 senses/listing/personification/ repetition
Reach for the stars	Give one sentence overview for each question, identifying patters - use the word 'main' or 'key'/Embed quotations/ Look at the bigger picture – not just individual quotes/ Consider genre and form/narrative voice/be /use terms: implies/ illuminates/

Assessment Objectives (AOs)

AO1
- **Identify and interpret** explicit and implicit information and ideas.
- **Select and synthesise evidence** from different texts.

AO2
- **Explain, comment on and analyse** how writers use **language and structure** to achieve **effects** and influence readers
- Use **relevant subject terminology** to support views.

AO4
- **Evaluate** texts critically and support this with **appropriate textual references.**

Language

- Pronouns
- Direct speech
- Terms of address
- Noun phrase
- Subordinate/ main cause
- Narrative voice
- Simple/compound /complex sentences
- Accent/Dialect
- Utterances
- Ellipsis
- 1st/3rd person
- Hyperbole
- Imperatives
- Exclamations

Structure

- Narrative perspective/voice
- Flashforward/ backward
- Non sequiturs
- Topic sentence
- Discourse markers
- Ellipsis
- Foreshadowing
- Focus/Narrowing
- Contrast/ juxtaposition

Language Paper 1: Writing Fiction

Example question and how to get top marks

You are going to enter a creative writing competition.
Your entry will be judged by a panel of people of your own age.
Either:
Write a description suggested by this picture:
Or:
Write the opening part of a story about a place that is severely affected by the weather.
24 marks for content and organization
16 marks for technical accuracy (Total 40 marks = 25% of GCSE)

Content	❑ ***Register** is convincing and compelling for audience* ❑ *Assuredly matched to **purpose*** ❑ *Extensive and ambitious **vocabulary** with sustained crafting of **linguistic devices***
Organisation	❑ *Varied and inventive use of **structural features*** ❑ *Writing is compelling, incorporating a range of convincing and **complex ideas*** ❑ *Fluently linked **paragraphs** with seamlessly integrated **discourse markers***
Technical accuracy	❑ Wide range of **punctuation** is used with a high level of accuracy ❑ Uses a full range of appropriate **sentence forms** for effect ❑ Uses **Standard English** consistently and appropriately with secure control of complex grammatical **structures** ❑ High level of accuracy in **spelling**, including ambitious vocabulary ❑ Extensive and ambitious use of **vocabulary**

45 minutes – 1 task – A choice of 2 tasks (1 descriptive **or** 1 narrative.... but could be 2xnarrative or 2xdescrpitve.)

Step one: read & highlight key words in question (including PAT/PAF/PAL)

Step two: Study the stimulus (picture) then choose one of the two questions

Step three: Plan 6 -8 things you can include, then put them in order (Steps 1 to 3 = 10 mins)

Step four: Write it' (Step 4 = 30 mins)
❑ should be lots of crossing out to show 'crafting'
❑ Should be 1 ½ sides approx

Step five (MOST IMPORTANT): Lip check (Step 5 = 5 minutes)

What to expect...

As a stimulus for students' writing, there will be a choice of scenario, written prompt or visual image that is related to the topic of the reading text in section A. The scenario sets out a context for writing with a designated audience, purpose and form that will differ to those specified on Paper 2.

Assessment Objectives

AO5 Content and Organisation	Communicate clearly, effectively and imaginatively, selecting and adapting tone, style and register for different forms, purposes and audiences. Organise information and ideas, using structural and grammatical features to support coherence and cohesion of texts.
AO6 Technical Accuracy	Candidates must use a range of vocabulary and sentence structures for clarity, purpose and effect, with accurate spelling and punctuation. (This requirement must constitute 20% of the marks for each specification as a whole.)

Sentence starts

- Verb (ing)– Running quickly, she ..... (make sure you finish sentence)
- Adverb – Darkly, the night sky....
- Adjective – Red light filled the ...
- Preposition (place) – Down there, all...
- Time: – After the sun set, Michael moved...

Language devices

- Simile
- Metaphor
- Personification
- Onomatopoeia
- Alliteration
- Imagery
- Symbolism
- Oxymoron
- Juxtaposition
- Pathetic Fallacy

Basic narrative structure

- Setting
- Character
- Problem
- Climax
- Resolution

Narrative v descriptive

- A narrative should include a lot of description.
- A description should not include any narration.

The basics

- Capital letters
- Full stops
- Question marks
- Commas
- Apostrophes
- Consistent tense
- Paragraphs
- Homophone spellings
- Connectives
- Semi-colons
- Colons
- Vary sentence starts/lengths
- Vary paragraph lengths
- Topic sentences

Stretch yourself

- For planning – mind map rather than spider diagram.
- Learn some impressive vocab.
- Break the rules!!!
- Reveal slowly/quickly
- Dialogue
- Parenthesis
- Ascending / descending tri-colon
- Syndetic/asyndetic listing
- Cohesion (topic sentence, pronouns, chains, prepositions, fronted adverbials)
- Cyclical/non-linear structure
- READ OTHER NOVELS/SHORT STOIRIES/POETRY/PLAYS –. IF YOU DON'T KNOW WHAT TO READ - ASK!

The descriptive 'rules'

- No names for people
- At least 5 zoom-ins
- No person described for more than a paragraph
- Minimum 5 senses
- 1-3 sentences of direct speech
- Maximum 1 exclamation mark
- 3rd person
- No thoughts
- Present or past tense (not both)
- Move the camera – like a film

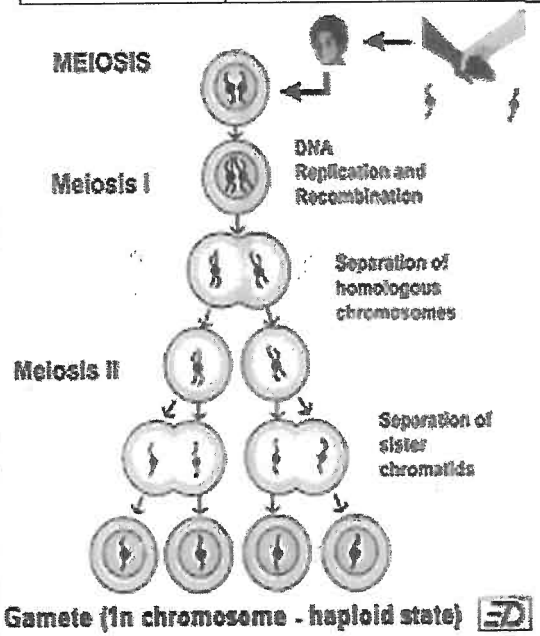
The narrative 'rules'

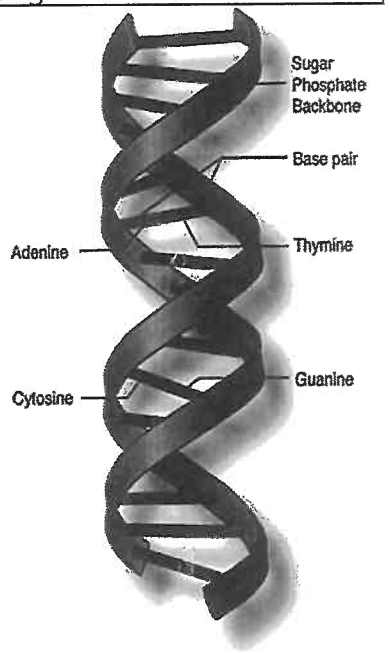
- The narrative takes place within one hour
- Maximum 3 characters
- Maximum 3 sentences of direct speech
- Show not tell
- Minimum 1 adjective per sentence
- Minimum 5 senses
- Remember it's the **beginning** of a story
- 3rd person
- 50 % description with zooms
- Don't 'chat' to the reader

Year 11 Set 1 ONLY | **Biology – Variation** | **Diagrams**

Asexual reproduction	Reproduction involving one parent, giving genetically identical offspring
Binary fission	The asexual reproduction of bacteria
Selective breeding	A process by which humans have chosen organisms to breed together to develop desirable characteristics
Artificial selection	Another name for selective breeding
Self-pollination	When pollen from one plant fertilises ova from the same plant
Cross-pollination	When pollen from one plant fertilizes ova from a different plant
Meiosis	Cell replication that produces four non-identical haploid cells from one diploid cell
Menstruating	Having a period as part of the menstrual cycle
Genome	One copy of all DNA found in your diploid body cells
DNA fingerprinting	The analysis of differences in DNA to identify individuals
Evolution	The theory first proposed by Charles Darwin that the different species found today formed as a result of the accumulation of small advantages that were passed on through generations
Double helix	The characteristic spiral structure of DNA
Nucleotide	A DNA base together with a sugar and a phosphate molecule that make up the backbone of the double helix
Transcription	The process of making an RNA copy of a gene sequence of DNA
Translation	The process of making a protein from an RNA copy of a gene sequence of DNA
Mutation	A permanent change to the DNA, which may be advantages, disadvantageous or have no effect
Ionising radiation	UV rays, x-rays and gamma rays that can cause mutations to DNA

Alleles	Two versions of the same gene, one from each parent
Genotype	The genetic make-up of an organism represented by letters
Phenotype	The physical characteristics of an organism
Punnett Square	A grid that used for determining the chance of inheritance
Cystic Fibrosis (CF)	A genetic disorder in which sufferers inherit recessive alleles from both parents and have excess mucus in their lungs





Year 11 set 1 and 2

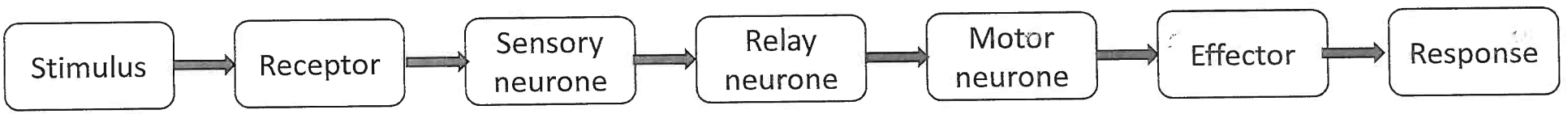
Biology – Homeostasis and the Human Nervous System

Diagrams

Homeostasis	The maintenance of a constant internal environment
Central nervous system (CNS)	The brain and spinal cord. Sometimes referred to as the coordinator
Neurones	Nerve cells – they link receptors and effectors to the CNS. Sensory neurons carry impulses from receptors to the CNS, relay neurons carry an impulse within the CNS and motor neurons carry the impulse from the CNS to an effector
Receptor	A cell or group of cells that detect a change and generate a nervous impulse
Effector	A muscle or gland that brings about a response
Synapse	A gap between neurones
Neurotransmitters	Chemicals which diffuse across the synapse and initiate a nervous impulse in the next neurone
Reflex response	An automatic response that you do not think about
Reflex Arc	The pathway of neurons in a reflex arc

Gland	A structure in the body that produces hormones
Pituitary Gland	The master gland in your brain that produces a number of hormones, including TSH, FSH and LH
Insulin	A hormone produced in your pancreas that lowers blood glucose by converting it into glycogen and storing it in the liver
Glycogen	An insoluble molecule made from many glucose molecules
Glucagon	A hormone produced in the pancreas that raises blood glucose by breaking down glycogen stored in the liver
Negative feedback	A homeostatic mechanism by which the body detects a change and makes an adjustment to return itself to normal
Type I Diabetes	A medical condition that usually develops in younger people, preventing the production of insulin
Type II Diabetes	A medical condition that usually develops in later life, preventing the person producing enough insulin or preventing cells from responding to insulin

Write out all of the stages of a nervous response:



Year 11 Sets 1 and 2

Biology – Hormones in Human Reproduction

Diagrams

Oestrogen	A female sex hormone produced in the ovaries that controls puberty and prepares the uterus for pregnancy.
Progesterone	A female sex hormone produced in the ovaries that prepares the uterus for pregnancy.
Testosterone	A male sex hormone produced in the testes that controls puberty.
Menopause	The point in a woman's life , usually between 45 and 55, when she stops menstruating and therefore cannot become pregnant.
Follicle stimulating hormone (FSH)	A hormone produced by the pituitary gland that causes an ovum to mature in an ovary and the production of oestrogen.
Follicle	A structure in an ovary in which an ovum (egg) matures.
Lutenising hormone (LH)	A hormone produced by the pituitary gland that stimulates ovulation.
Corpus luteum	After ovulation the empty follicle turns into this and releases progesterone.
Vasectomy	A contraceptive medical procedure during which a ma's sperm ducts are blocked or cut.
Tubal ligation	A contraceptive medical procedure during which a woman's fallopian tubes are blocked or cut.

Gestation	The time between fertilisation and birth
Thyroid stimulating hormone (TSH)	A hormone produced by your pituitary gland that regulates your thyroid gland.
Thyroid gland	A gland in your neck that produces thyroxine to regulate how quickly your body uses energy and makes proteins, and how sensitive it is to other hormones.
Adrenaline	A hormone produced by your adrenal glands that causes an increase in heart rate ready for a 'fight or flight' response.
Adrenal glands	Glands that produce adrenaline

Year 11 Set 2 ONLY

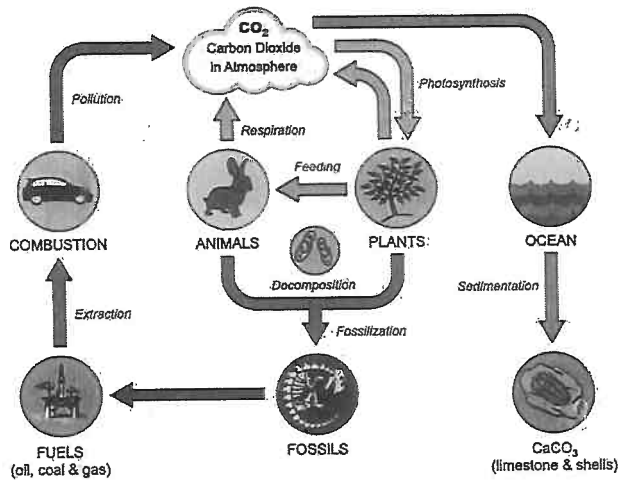
Biology – Ecology

Diagrams

Population	The total number of organisms of the same species in an area.
Community	Populations of different species living in the same area.
Competition	The contest between organisms for resources.
Interdependence	All the organisms in a community depend upon each other.
Abiotic	The non-living parts of the environment.
Biotic	The living parts of the environment.
Invasive species	An organism that is not native and causes negative effects.
Ecosystem	The interaction of a community of living organisms and the non-living parts of the environment.
Structural adaptation	An advantage to an organism as a result of the way it is formed eg streamlining.
Behavioural adaptation	An advantage to an organism as a result of its behavior.
Functional adaptation	An advantage to an organism as a result of a process eg venom.
Extreme environment	A location in which it is challenging for most organisms to live.
Extremophile	An organism that lives in an extreme environment.
Sampling	Recording a small amount of information to make wider conclusions.
Quadrat	A square frame used in sampling.
Transect	A line along which systematic sampling occurs.
Producer	An organism that photosynthesises eg plant.
Biomass	A resource made from living organisms.
Consumer	An organism which eats other organisms. Primary consumers eat plants, secondary consumers eat herbivores, tertiary consumers eatc carnivores.

Biodiversity	A measure of the different species present in a community.
Incomplete combustion	Burning of a fuel without enough oxygen leading to carbon monoxide production.
Recycle	Changing a waste product into new raw materials to make another product.
Sustainable	An activity that can continue without damaging the environment.
Deforestation	Cutting trees down to use the land for something else.
Conservation	Protecting an ecosystem or species from reduced numbers and often extinction.

Draw out the carbon cycle:



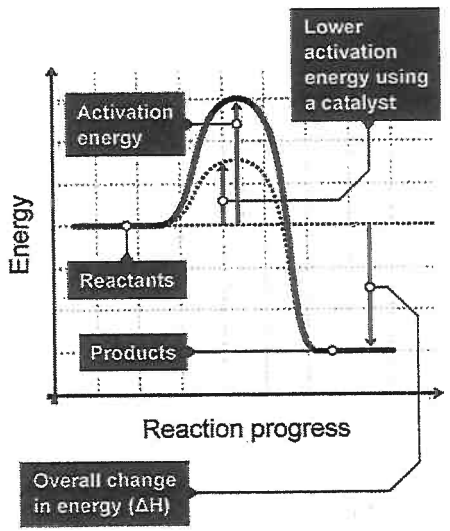
Year 11 Sets 1, 2 and 3

Chemistry– The Rate and Extent of Chemical Change

Diagrams

Rate of reaction	The speed at which a reaction takes place. This can be worked out in two ways: Mean rate of reaction = quantity of reactant used ÷ time Mean rate of reaction = quantity of product formed ÷ time
Activation energy	The minimum energy particles must have to react
Catalyst	A substance that speeds up a chemical reaction by lowering the activation energy
Enzymes	Molecules that act as catalysts in biological systems
Closed system	A system where no substances can get in or out
Dynamic equilibrium	System where both the forward and reverse reactions are taking place simultaneously and at the same rate

Draw a graph to show how
A catalyst lowers the activation
Energy in a chemical reaction:



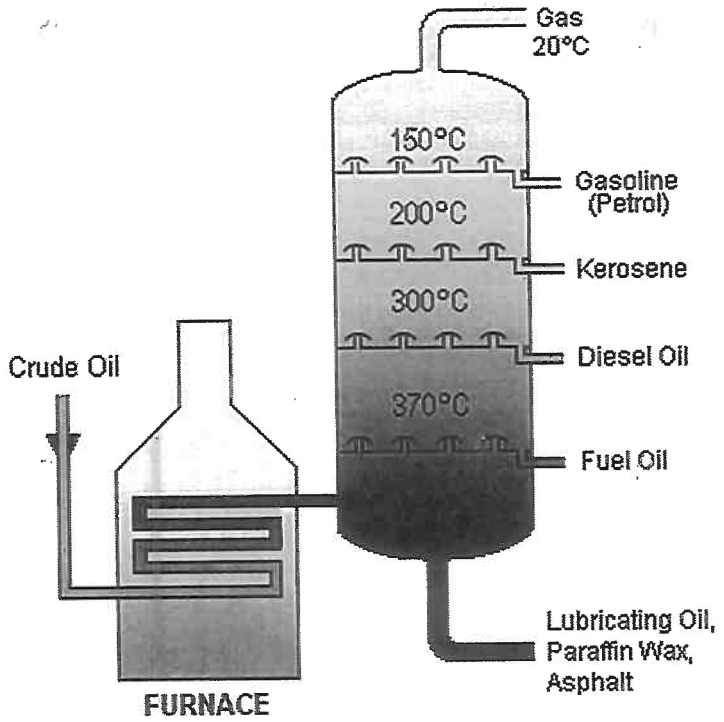
Year 11 set 1, 2 and 3

Key Terms

Chemistry – Organic Chemistry

Biomass	A resource made from living or recently living organisms.
Hydrocarbon	A compound containing hydrogen and oxygen only.
Alkanes	A homologous series of saturated hydrocarbons with the general formula C_nH_{2n+2}.
Saturated	A molecule that only contains single covalent bonds. It contains no double covalent bonds.
Displayed Formula	Drawing of a molecule showing all atoms and bonds.
Homologous Series	A family of compounds with the same general formula and similar chemical properties.
Fractional Distillation	A method used to separate miscible liquids with different boiling points.
Fraction	A mixture of molecules with similar boiling points.
Complete Combustion	When a substance burns with a good supply of oxygen.
Flammability	How easily a substance catches fire; the more flammable, the more easily it catches fire.
Viscosity	How easily a liquid flows; the higher the viscosity the less easily it flows.
Alkenes	A homologous series of unsaturated hydrocarbons with the general formula C_nH_{2n}.
Unsaturated	A molecule that contains one or more double covalent bonds.
Polymer	A long chain molecule in which lots of small molecules (monomers) are joined together.

Draw a diagram to show how fractional distillation is carried out and what the fractions are

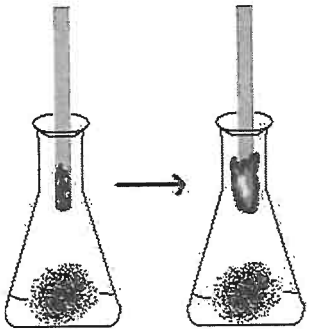


Year 11 set 2 and 3

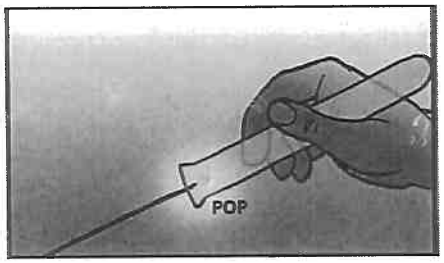
Chemistry – Chemical Analysis

Pure substance	A single element or compound that is not mixed with any other substance.
Formulation	A mixture that has been designed as a useful product.
Chromatography	A technique that can be used to separate mixtures and the identify substances.

Testing for oxygen

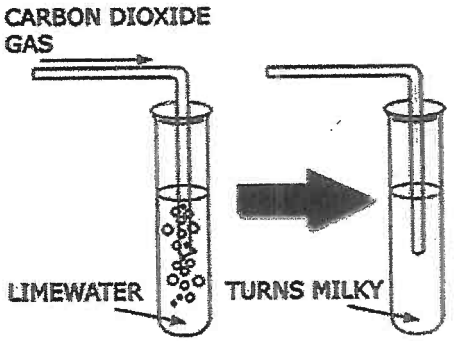


Testing for hydrogen



Testing for chlorine using litmus paper

Testing for CO_2



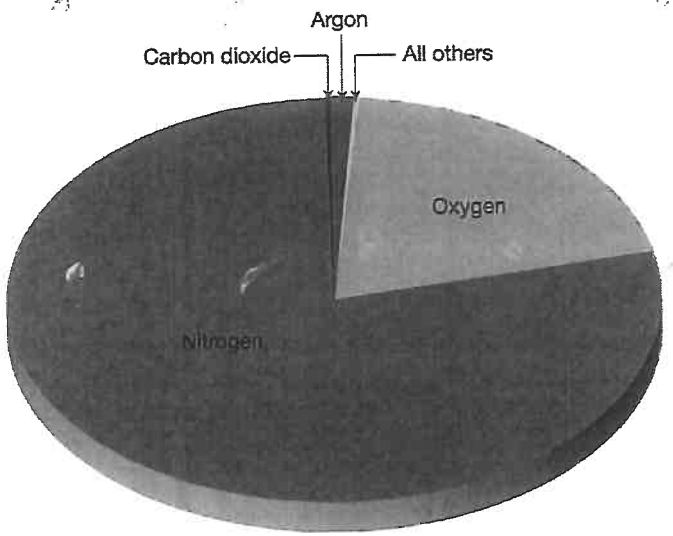
Year 11 set 2 and 3

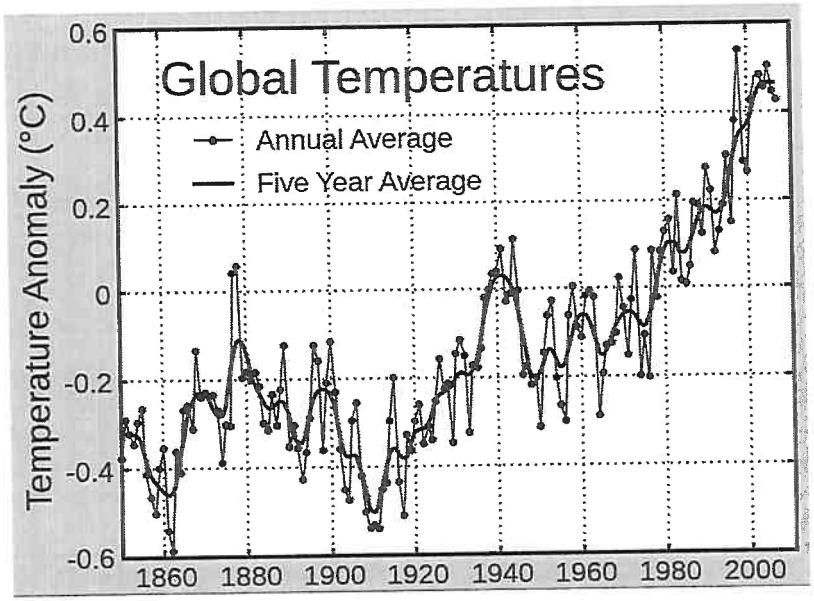
Chemistry – Chemistry of the Atmosphere

Diagrams

Greenhouse gas	A gas that absorbs long wavelength infrared radiation given off by the Earth but does not absorb the suns radiation.
Global warming	An increase in the temperature of the Earths surface.
Water stress	A shortage of fresh water.
Carbon footprint	The amount of carbon dioxide and other greenhouse gases given out over the full life cycle of a product, service or event.
Carbon neutral	Fuels and processes whose use results in zero net release of greenhouse gases to the atmosphere.

Draw a pie chart to represent the percentage of gases in the atmosphere





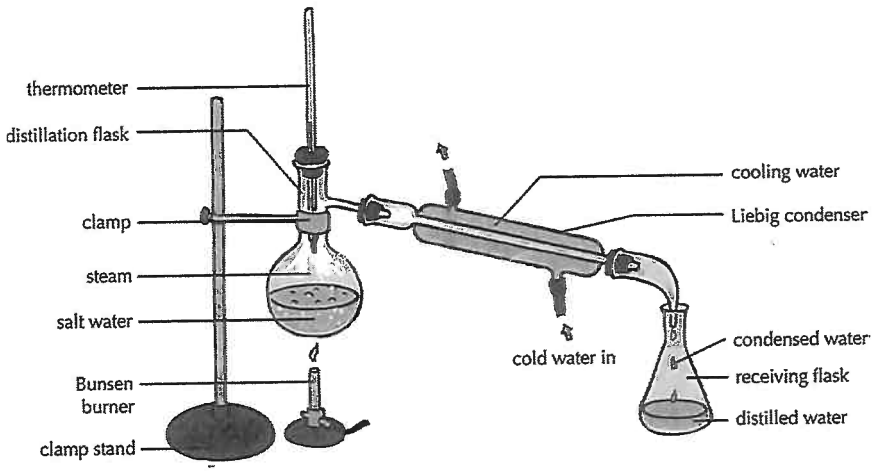
Draw a graph to represent the change in the average global temperature over the last 150 years

Year 11 set 3 only

Chemistry – Using the Earths Resources

Finite resource	A resource that cannot be replaced once it has been used.
Renewable resource	A resource that we can replace once we have used it.
Sustainable development	Using resources to meet the needs of people today without preventing people in the future from meeting theirs.
Life cycle assessment	An examination of the impact of a product on the environment throughout its life.
Value judgement	An assessment of a situation that may be subjective, based on a persons opinion and / or values.
Desalination	Process to remove dissolved substances from sea water.
Ore	A rock from which a metal can be extracted for profit.
Phytomining	The use of plants to absorb metal compounds from soil as part of metal extraction.
Bioleaching	The use of dilute acid to produce soluble metal compounds from insoluble metal compounds.
Leachate	A solution produced by leaching or bioleaching.

Draw a diagram to show how the fractional distillation of salt water would be carried out



Y11 Autumn 1 Deutschvokabel. Woche 1. **Freiwilligenarbeit** Kontrolle- =

Nomen		**Verben**		**Adjektiven**		**Qualifiers**	
der Freiwillige	*volunteer*	bauen	*to build*	wichtig	*important*	ein bisschen	*a bit*
die Tierarten	*types of animal*	suchen	*to look for*	reich	*rich*	ein wenig	*a little*
die Tiere	*animals*	helfen	*to help*	arm → ärmer	*poor → poorer*	fast	*nearly*
die alte Leute	*old people*	motivieren	*to motivate*	leicht	*easy*	sehr	*very*
die Chance	*chance*	arbeiten	*to work*	schwierig	*difficult*	viel	*a lot*
die Menschen	*humans*	füttern	*to feed (animals)*	nützlich	*useful*	ziemlich	*quite*
die Aufgabe	*task*	spazieren gehen	*to go walking*	freiwillig	*voluntary*	zu	*too*
der Unterricht	*school/lessons*	lesen	*to read*	süß	*cute/sweet*	extrem	*extremely*
die Grundschule	*primary school*	aufräumen	*to tidy up*	im Ausland	*abroad*	ganz	*completely*
das Tierheim	*animal home*			zu Hause	*at home*	total	*totally*
das Kinderheim	*children's home*					einfach	*easily*
das Altenheim	*old people's home*						
der Tierpark	*animal park*						

Y11 Autumn 1 Deutschvokabel. Woche 2. **Meine Familie macht mit!** Kontrolle- =

Nomen	Nouns	Verben	Verbs	Was machst du?	What do you do?	Adjektiven	
die Umwelt	*environment*	die Umwelt helfen	*to help the environment*	ich helfe die Umwelt	*I help the environment*	bleifrei	*unleaded*
die Plastiktüten	*plastic bags*	die Umwelt schützen	*to protect the environment*	ich schütze die Umwelt	*I protect the environment*	billig	*cheap*
der Müll	*rubbish*	die Umwelt schaden	*to damage the environment*	ich schade die Umwelt	*I damage the environment*	teuer	*expensive*
die Solarzellen	*solar panels*	produzieren	*to produce*	ich produziere wenig Müll	*I produce little rubbish*	sauber	*clean*
der Strom	*electricity*	das Licht ausmachen	*to turn the light off*	ich mache das Licht aus	*I turn the light off*	schmutzig	*dirty*
das Geld	*money*	keine Plastiktüten benutzen	*to use no plastic bags*	ich benutze keine Plastiktüten	*I use no plastic bags*	umweltschädlich	*environmentally damaging*
das Haus	*house*	den Müll trennen	*to separate the rubbish*	ich trenne den Müll	*I separate the rubbish*		
das Licht	*light*	die Heizung herunterdrehen	*to turn the heating down*	ich drehe die Heizung herunter	*I turn the heating down*	umweltfreundlich	*environmentally friendly*
die Heizung	*heating*	einen warmen Pulli anziehen	*to put a warm jumper on*	ich ziehe einen warmen Pulli an	*I put a warm jumper on*		
das Benzin	*petrol*	Geld sparen	*to save money*	ich spare Geld	*I save money*		
die Dusche	*shower*	Wasser sparen	*to save water*	ich spare Wasser	*I save water*		
die Sonnenenergie	*solar energy*	sich duschen	*to shower*	ich dusche mich	*I shower*		
ein Elektroauto	*electric car*	Rad fahren	*to ride a bike*	ich fahre Rad	*I ride a bike*		
die Plastikflaschen	*plastic bottles*	recyceln	*to recycle*	ich recycle	*I recycle*		
die Energiesparlampen	*energy saving bulbs*	vergessen	*to forget*	ich vergesse	*I forget*		

Coordinating conjunctions (no word order change)	Subordinating conjunctions (scare the verb)
und, aber, denn, also	weil, obwohl, dass, da, als, wenn, bevor, nachdem

Using more subordinating conjunctions

Remember that the **coordinating conjunctions** *und* (and), *aber* (but) and *denn* (because) do not affect word order:
Wir sparen Wasser. + Wir trennen Müll. →
Wir sparen Wasser und (wir) trennen Müll.

Subordinating conjunctions such as *weil* (because) make the verb go to the end of the sentence or clause. Everything else in the sentence / clause stays in the same place – it is just the verb that moves. Other subordinating conjunctions are: *bevor* (before), *nachdem* (after), *da* (since, because), *dass* (that) and *wenn* (when, if):
ich mache immer meinen Computer aus, bevor ich ins Bett gehe. (I always switch off my computer before I go to bed.)
Wir helfen der Umwelt, wenn wir Wasser sparen. (We help the environment when we save water.)

Y11 Autumn 1 Deutschvokabel. Woche 3. **Helft der Umwelt** Kontrolle- =

Foundation

Nomen	Nouns	Adjektiven	Adjectives
die Plastikflaschen	*plastic bottles*	aus Karton	*made from cardboard*
die Zeitungen	*newspapers*	aus Kunststoff	*made from plastic*
das Obst	*fruit*	sauber	*clean*
die Verpackungen	*packaging*	beliebt	*popular*
der Abfall	*waste*	sicher	*safe*
die Getränkedosen	*drinks cans*	gefährlich	*dangerous*
die Kraftwerk	*power station*		
die Atomkraftwerk	*nuclear power station*		
die Kohlekraftwerk	*coal fired power station*		
die Verschmutzung	*pollution*		
die Luftverschutzung	*air pollution*		
der Lärm	*noise*		
die Umwelt	*environment*		
die Gesundheit	*health*		
die Gewalt	*violence*		
der Tat/die Taten	*act/acts*		
die Gewaltaten	*crimes*		
öffentliche Verkehrsmittel	*public transport*		
die Stadtmitte	*town centre*		
die Fahrradwege	*bike lane*		
der Flughafen	*airport*		
die Fabrik	*factory*		
die Fußgängerzone	*pedestrian zone*		

Higher

Nomen	Nouns	Adjektiven	Adjectives
die Welt	*world*	überbevölkert	*overpopulated*
das Volk	*people*	vergangen	*past*
die Bevölkerung	*population*	bedroht	*threatened*
die Menschen	*humans*	gefärdet	*endangered*
die Zahl	*number*	zahllose	*countless*
das Jahrhundert	*century*		
der Meerespiegel	*sea level*		
die Arten	*species*		
die globale Erwärmung	*global warming*		
das Aussterben	*extinction*		
ein Drittel	*a third*		
ein Viertel	*a quarter*		
ein Fünftel	*a fifth*		
der Verbrauch	*consumption*	ungefähr	*about*
die Vereinten Nationen	*United Nations*	bereits	*already*
die Wasserknappheit	*water scarcity*	insgesamt	*in total*
die Entwicklung	*development*		
die Spülmittel	*detergent*	**Verben**	**Verbs**
das Klima	*climate*	steigen	*to climb/increase*
das Öl	*oil*	sinken	*to sink/decrease*
das Gift	*poison*	warnen	*to warn*
die Abholzung	*deforestation*	umbringen	*to kill/murder*
das LKW (Lastkraftwagen)	*lorry*		

Y11 Autumn 1 Deutschvokabel. Woche 4 + 5. **Armut**- Kontrolle- =

Nomen	**Nouns**	**Verben**	**Verbs**	**Meine Routine**			
der Armut	*poverty*	wohnen	*to live*	ich wache auf	*I wake up*		
die Sozialwohnung	*social housing*	helfen	*to help*	ich stehe auf	*I get up*		
das Leben	*life*	leben	*to live*	ich ziehe mich an	*I get dressed*		
die Sozialhilfe	*social support*	bekommen	*to receive*	ich wasche mich	*I wash myself*		
die Straße	*street*	verdienen	*to earn*	ich pütze mir die Zähne	*I brush my teeth*		
die Fußgängerzone	*pedestrian zone*	verbringen	*to spend (time)*	ich gehe zur Schule	*I go to school*		
der Rentner	*pensioner (m)*	stehlen	*to steal*	ich frühstücke	*I eat breakfast*		
die Rentnerin	*pensioner (f)*	überleben	*to survive*	ich kümmere mich um	*I care about*		
der Bettler	*beggar (m)*	unterstützen	*to support*				
die Bettlerin	*beggar (f)*						
der Alkoholiker	*alcoholic*	**Adjektiven**	**Adjectives**	**Verben**			
das Bier	*beer*	hässlich	*ugly*	fliehen	*to flee*	geflohen	*fled*
der Urlaub	*holiday*	schön	*pretty*	werfen	*to throw*	geworfen	*thrown*
die Fabrik	*factory*	leicht	*easy*	gewinnen	*to win*	gewonnen	*won*
die Hilfe	*help*	arbeitslos	*unemployed*	suchen	*to look for*	gesucht	*looked for*
der Dieb	*thief (m)*	faul	*lazy*				
die Diebin	*thief (f)*	allein	*alone*	**Nomen**		**Adjektiven**	
das Gefängnis	*jail*	einsam	*lonely*	die Gewalt	*violence*	hilflos	*helpless*
Ausdrücke	**Expressions**	furchtbar	*awful*	der Flüchtling	*refugee (m)*	obdachslos	*homeless*
jemand	*someone*	tablettensüchtig	*addicted to tablets*	die Flüchtlinge	*refugee (f)*	arbeitslos	*unemployed (work-less)*
niemand	*noone*	arm	*poor*	der Flüchtlingslager	*refugee camp*	freundlich	*friendly*
ein paar	*a couple of*	reich	*rich*			glücklich	*happy*
leider	*unfortunately*					gefährlich	*dsngerous*
selten	*seldom/rarely*						

Year 11 Geography: Physical Landscapes-Coasts

Coastline	The outline of the land. Where the land meets the sea
Wave length	The horizontal distance between two wave crests
Wave height	The vertical distance from the trough to the crest.
Wave crest	The top of a wave
Wave trough	The base of a wave
Wave fetch	The distance of water over which the wind blows (the size of the sea/ocean)
Swash	Breaking waves rush water and sediment up the beach.
Backwash	The water that rushes flows back to the sea.
Erosion	The removal of rock by the sea
Weathering	The breakdown of rocks caused by the day-to-day changes in the atmosphere
Transportation	The movement of sediment along the beach
Deposition	The dropping of sediment
Longshore Drift	The transportation of material along a beach. The material is moved in the direction of the waves and prevailing wind.
Infiltration	Water enters the ground
Saturation	Rock that is full of liquid
Impermeable rock (non-porous rock)	Rocks that do not allow liquid to pass through
Permeable rock (porous rock)	Rocks that allow liquid to pass through
Slip plane	A line of weakness along which movement occurs
Erosion processes	
Hydraulic Action:	The force of the waves hitting the cliffs removes material. Air bubbles in the water are pushed into cracks in the cliff and remove material due to an increase in pressure

Abrasion	Material in the sea hits against the cliffs and removes rocks and soil. *It acts like sandpaper.*
Corrosion:	Chemicals in the water dissolve the cliff.
Attrition:	Material in the sea crash into each other and break into smaller pieces. Continued attrition = smaller, smoother pebbles and sand particles.

History Paper 3 –- Germany- Topic 1: Treaty of Versailles and Weimar Germany 1919-29

Treaty of Versailles and Weimar Germany 1919-29: Timeline

1	9th Nov 1918	Kaiser abdicates (resigns from being monarch
2	11th Nov 1918	Armistice (ceasefire) signed. Politicians who sign this called 'November Criminals' by Nazis
3	Jan 1919	Spartacist Uprising
4	June 1919	Treaty of Versailles signed
5	August 1919	Weimar Constitution signed
6	1920	Kapp Putsch
7	Jan 1923	French invasion of Ruhr
8	Nov 1923	Hyperinflation
9	Nov 1923	Munich Putsch
10	1924	Dawes Plan
11	1925	Locarno Pact
12	1926	Germany joins League of Nations
13	1928	Kellogg-Briand Pact
14	1929	Young Plan
15	1929	Peter Kurten , the 'Vampire of Dusseldorf' murders 11 people
16	1930	The film 'Blue Angel' is Released

Treaty of Versailles and Weimar Germany 1919-29. key words

17	Treaty Of Versailles; terms **BRAT**	**B = Blame.** Germany had to take blame for the war. War Guilt Clause; 231. The part of Treaty Germans hated the most. Humiliating. **R = Reparations;** compensation to Allies. Set at £6.6 billion in 1921 **A = Army;** limited to 100,000 men. No air force, no tanks, no submarines **T = Territory;** Germany lost land e.g. Alsace-Lorraine, Saar, all African colonies
18	Hyperinflation	When prices rise quickly and the value of money decreases quickly.

Treaty of Versailles and Weimar Germany 1919-29: Key Questions

19	Why was ToV so harsh?	• The war had led to **millions of deaths,** almost 10 million servicemen • The war **destroyed thousands of building and communities** e.g. Ypres in Belgium • No previous war had caused as much damage . **People were very angry with Germany**
20	Why did German's think ToV was too harsh	• **Reparations too high.** Germans supported politicians who promised to stop paying them (like the Nazis) • **War Guilt was very embarrassing.** Causing Germans to support politicians who promised to rip up the admission. (like the Nazis) • **Felt defenceless.** Caused them to support politicians who promised to rebuild the army. (like the Nazis) • **Losing land was humiliating and harmed the economy.** Caused them to support politicians who promised to take the land back. (like the Nazis)
21	What threats did Weimar Republic face 1919-23?	• **1919 Spartacist Uprising-** communists led by Rosa Luxemburg tried to take control of Berlin. Stopped by right wing groups e.g. Freikorps • **1920 Kapp Putsch.** General Kapp tried to take over Berlin. Stopped by a general strike • **1923 French Invasion of the Ruhr.** Germany stopped paying reparations. In response France invaded the Ruhr area to take coal and steel. In response the German government told workers to go on strike. To pay the striking workers the government printed more paper money. • **1923 Hyperinflation:** printing money led to prices increasing and the value of the **mark** decreasing rapidly. In November 1923 a loaf of bread cost 200 million marks. Germans were staving and could not afford rent or fuel. • **1923 Munich Putsch;** Nazis tried to take control of Munich the capital of the German region of Bavaria.
22	Causes of Weimar economic Recovery	• **1923 Retenmark.** New currency put an end to hyperinflation • **1924 – Dawes Plan –** loans to Germany from USA • **1929 Young Plan –** reduced monthly reparations payments
23	`Who experienced a Golden Age 1925-29?	• **Women** gained the right to vote and became doctors and teachers. Women gained social freedoms e.g. go out alone to bars, smoke and drink alcohol. • **Artists** like George Grosz painted modern art that criticised old fashioned ideas. • There was massive increase in **cinema** attendances with film stars like Marlene Dietrich in 'The Blue Angel' being very popular • **Factory owners** and the rich had no debts because of hyperinflation. • **Jobs:** Germany a leader in steel and chemical production. Factory workers wages increased • **Housing improved.** The Weimar government built 2 million new homes. Homelessness fell by 60%. Bauhaus architecture improved workers housing
24	Who did not experience a Golden Age 1925-29?	• Germans with **traditional views** disliked social changes, modern art, cinema music and architecture • **Traditional Germans** blamed increases in crime on social changes e.g. –Peter Kurten 'The Vampire of Dusseldorf • **Middle class** savings were wiped out by hyperinflation. • The price of wheat was very low meaning **farmers** were very poor • Many **disabled soldiers** were not paid their war pension because the Weimar Government was disorganised

History Paper 3 – Germany- Topic 2: Nazi Party 1919-33

Timeline

1	1919	Hitler joins **German Workers Party** (DAP)
2	1920	**25 Point Programme released** – DAP changes it's name to **National Socialist German Workers Party** (NSDAP) or **Nazi for short.**
3	1921	**Hitler becomes leader** of the Nazi Party
4	Nov. 1923	Nazi Party has **55,000 members**
5	Nov. 1923	**Munich Putsch**
6	1924	Hitler writes **'Mein Kampf'** whilst in prison
7	1924-1929	**The 'Lean Years'.**
8	1926	**Hitler Youth** created
9	1926	**SS. Hitler's bodyguard** created.
10	1929	**Wall Street Crash.** US stock market crashed causing the whole world to **suffer economically** in the **Great Depression.**
11	1932	6 million German workers unemployed
12	1932	Hitler uses an aeroplane to visit 5 cities in one day and give speeches
13	July 1932	Nazis win 230 seats in the Reichstag. 37% of the vote
14	January 1933-	Hitler becomes **Chancellor** of Germany (equivalent of Prime Minister in Britain)

Key Events

15	Hitler's early Life	1. Devastated by the death of his mother in 1907 2. Shortly after he was rejected from art college, destroying his dream of becoming an artist 3. For the next 5 years Hitler slept rough in parks and earned pennies painting postcards
16	Hitler in World War I	1. Hitler **volunteered** to fight in World War I 2. He won the highest German medal for **bravery**. The Iron Cross First Class 3. He felt **betrayed** by the Weimar Politicians signed the armistice. He saw them as **'November Criminals'** 4. He believed in the **'Doltchstoss'** – **'stab in the back'** myth. That communists and Jews had betrayed Germany by causing the armistice.
17	Early Nazi Party	1. 1919 Hitler joins the DAP. Hitler started making speeches at meetings and discovered he was **good at public speaking** 2. He discovered that **people agreed** with the topics he spoke about e.g. November Criminals, Dolchtoss, hatred of the ToV, hatred of Jews, Hatred of communists. 3. 1920 Nazis publish **25 Point Plan.** Included ideas about cratering an Empire, excluding Jews from society and destroying the ToV 4. 1921 becomes leader- 'Fuhrer' - of Nazi Party. Hitler decides that he should have ultimate power and be questioned by no one. This called the *Fuhrerprinzip* (Fuhrer principle) 5. 1921 SA **(brownshirts)** formed to protect the Nazi Party.
18	Causes of Munich Putsch 1923	1. The Nazis thought the time was right to take power by force in November 1923. 2. **Long term;** hatred of the ToV, in particular war guilt and reparations. Hatred of November Criminals and Weimar Republic. 3. **Short term:** Nazi popularity increased; membership reached 50,000. War hero General Ludendorff gave his support to the Nazis. The French invaded the Ruhr and the Weimar Government did not fight back. 4. **Trigger:** hyperinflation made living conditions terrible and the Weimar government even more unpopular.
19	Consequences of Munich Putsch 1923	1. Hitler's trial was a **propaganda success.** 2. In prison Hitler wrote **Mein Kampf** which set out his beliefs 3. Hitler changed tactics; the **Nazis would gain power by elections.** The Nazis were not very successful at gaining votes until after 1929. Therefore 1925-29 was called the 'Lean Years' by the Nazis. 4. He announced changes at the Bamberg Conference in 1926 e.g creation of **Hitler Youth and the SS,** Hitler's personal bodyguard. 5. However, economic success of Weimar Republic 1925-29 means Nazis are not successful in elections. Know as the **Lean Years**
20	Causes increase in popularity of Nazis 1929-33	1. **1929 Wall Street Crash** causes the **Great Depression.** USA recalls loans from Germany. By **1932 6 million workers are unemployed.** 2. Weimar Government had no money to deal with the serious economic problems caused by the Depression 3. This resulted in increasing support fro extremist parties promising to solve the problem of unemployment by sharing resources e.g. the **Communist party (KPD).** This worried the middle class, upper class and farmers who did not want to share their money and land. 4. The Nazis **exploited** the problem of unemployment **and** fear of communism to gain support. They promised jobs for the workers and to destroy the KPD 5. Hitler repeated these messages again and again in **persuasive speeches** that led to increased support 6. **Josef Goebbels was Head of Propaganda** and used clever tactics to increase support. e.g. slogans, posters, rallies, newspapers, radio, aeroplanes 7. Rich, communist fearing businessmen e.g. **Krupp, Bosch and Thyssen** paid for propaganda that led to increased support. 8. Nazis win **230 seats** in the Reichstag. 37% of the vote in July 1932
21	Hitler becomes Chancellor 1933	1. **Bruning bans the SA.** Bruning planned to buy land from famers and give it to the unemployed. Both ideas are very unpopular 2. Bruning resigns and is replaced by von Papen **Von Papen suggests abolishing the Weimar constitution** as it keeps failing to provide stable governments 3. **Von Schleicher warns Hindenburg that this will lead to Civil War.** Hindenburg forces von Papen to resign. 4. Hindenburg appoints von Schleicher as Chancellor. He plans to create a ***Querfront*** **(cross front).** With a range of different Parties in a coalition, including the **communists.** 5. **Papen and Hitler persuaded Hindenburg that this meant communists would take over.** Hindenburg sacked von Schleicher 6. Papen said he would control Hitler. He said he could **'make Hitler squeak'.** 7. Hitler becomes Chancellor on 30th January 1930

Year 11 Religious Education Knowledge Organiser

Half Term 1: Relationships and Families (Sex, Marriage and Divorce)

Key Words	Definitions
Civil marriage	Non-religious marriage
Cohabitation	Where a couple live together without being married
Covenant	An agreement based on promises between two sides, here in marriage where the agreement is made before God (as a witness) and with God (as a partner).
Vows	Promises made by bride and groom during marriage ceremony.
Procreation	Having a child: seen as a duty in many religions.
Divorce	Legal ending of a marriage.
Annulment	Cancellation of a marriage in Roman Catholic tradition, as if marriage never was.
Remarriage	Marriage for the second time, after divorce ending an earlier marriage.
Polygamy	The practice of one man having several wives
Adultery	A sexual relationship between a couple not married to each other, but married to/in relationship with others (affair).
Chastity	Sexual purity, eg not having sex before marriage.
Celibacy	Not having sexual relations.
Heterosexuality	Being physically/sexually attracted to persons of the opposite gender.
Homosexuality	Being physically/sexually attracted to persons of the same gender.
Civil partnership	Legal union of two people of same gender; now of equality with heterosexual marriage in all respects.
Contraception	Precautions taken to prevent pregnancy and to protect against contracting/transmitting STIs (sexually transmitted infections).
Family planning	Planning when to have a family and how big a family to have by use of birth control practices and/or contraception.

Marriage and Cohabitation

2 reasons marriage is important in Christianity including sacred writing	2 reasons marriage is important in Hinduism including sacred writing	2 modern arguments for cohabitation
• The Bible says a man should leave his parents and unite with a wife • Marriage allows people to procreate within a family and bring up the children in their religion	• Marriage allows people to procreate within a family and bring up the children in their religion • The gods married e.g. Lakshmi and Vishnu	• Cohabitation allows people to see if they are compatible living together • Divorce levels are so high some people think this devalues marriage

Divorce

	For	Against
2 non-religious arguments	• People may be in abusive relationships • People are more likely to commit adultery if they are not allowed to divorce	• The marriage vows promise that you will be together 'til death us do part' • Divorce can be very distressing on children

1 Christian argument including sacred writing	• It is more loving ("love your neighbour") to allow people to leave a marriage if they are unhappy	• The union was blessed by God and the Bible teaches: "What God has joined together let no-one separate"
1 Hindu argument including sacred writing	• Marriages can be harmful to people and therefore the principle of ahimsa would mean divorce is better	• One of the (dharma) duties of Hinduism is to be a loyal husband/wife after you have married

Sex Outside of Marriage

2 reasons against adultery including sacred writing	**2 reasons against sex before marriage including sacred writing**	**2 modern arguments for sex before marriage**
• Christian Commandment: 'do not commit adultery' • You made the vow not to commit adultery	• Sexuality is a gift from God just for marriage • The Bible says those with strong sexual urges should marry	• Waiting until marriage may make people rush into marriage • Sex is a natural part of being a human and should not be denied

Same Sex Relationships

Fundamentalist Christian view	**Liberal Christian view**	**Hindu view**	**Modern British society**
• The Bible says homosexual acts are an 'abomination' and this should be taken literally	• The verses in the Bible that condemn homosexual acts just reflect an ancient culture	• Hindu sacred texts do not condemn homosexual relationships	• Homosexual marriage is now legal in the UK and is equal in every way to heterosexual marriage

Contraception

Catholic view including sacred writing	**Protestant view**	**Hindu view**	**Modern British society**
• Artificial contraception goes against God's commandment "Be fruitful and multiply"	• God gave people free will and contraception helps people make a good decision as to when to have children	• The principle of ahimsa would mean a child should not be brought into the world to suffer so contraception should be used in cases of poverty	• Many people see the importance of contraception for population control and stopping STIs

Year 11 GCSE PE Knowledge Organiser

Half Term 1: Health, Fitness and Well-being / Diet

Key Words	Definitions
	Health, Fitness and Well-being
Healthy Lifestyle	A state of complete physical, social and mental well-being and not merely the absence if disease or infirmity
Fitness	An individual's capacity to carry out life's activities without getting too tired. It is often used as a measure of the body's ability to function efficiently and effectively.
Muscular Endurance	The ability of the muscles or group of muscles to repeatedly contract or keep going without rest.
Aerobic endurance	The ability to continuously exercise without getting tired, with the presence of oxygen.
Anaerobic Endurance	This is when the body is working without the presence of oxygen. For example, a 100m sprint or a quick powerful movement such as a javelin throw.
Flexibility	A range of movement that occurs at a given joint.
Power	A combination of strength and speed, often referred to as fast strength.
Speed	The ability of the body to move quickly – Speed = Distance / Time.
Body Composition	The way in which a body is made up.
Agility	How quickly you can change speed and direction whilst maintaining control of movement.
Co-ordination	The ability of the body to use 2 or more body parts at the same time to complete an action.
Balance	The ability to maintain equilibrium / the ability to keep your centre of mass over your base of support.
Reaction time	The ability to react to a stimulus.
Well-being	This refers to feeling or mental state of being contented, happy, prosperous and healthy.
Sedentary	This describes a lifestyle that is inactive and involves much sitting down.

Physical Benefits and Consequences of Physical Activity

Factor	Benefit from exercise	Consequence of inactivity
Injury	• Exercise will help the injury to heal and enable the body to retain its fitness levels.	• More likely to suffer stresses and strains through ordinary life activities because of the lack of physical fitness.
Coronary Heart Disease (CHD)	• Less likely to suffer from CHD. Exercise will help to keep the heart and blood supply healthy.	• Lack of exercise may cause CHD with poor blood and oxygen circulation and build-up of fat in the arteries

Emotional health benefits / Consequences of a Physical lifestyle

	Benefit	Consequence
Self-Esteem/Confidence	• Can help you feel better about yourself and confident in the way you look. Activity can release hormones that make you feel better and happier.	• Inactive people may have low self-esteem because they lack energy but also because they are more likely to be obese.
Stress management	• An active person can feel that the stresses of everyday life can be forgotten or released through exercise – so they manage stress more effectively	• Inactive people may dwell on life's difficulties and may not have enough outlets to get rid of stress and anxiety.
Image	• An active person is more likely to have a good level of self-image. They feel that they look good to themselves and others.	• Inactive people can have poor self-image, this feeling can arise from poor body-image, which can lead to obesity or even being extremely underweight.

Social benefits / Consequences of a Physical lifestyle

	Benefit	Consequence
Friendship	• Exercise can help people make friends with others who are involved in exercise.	• Can result in a sedentary person not going out much and not meeting people, this can also reduce confidence levels.
Belonging to a group	• Enables people to be a part of a team, such as a running club. It gives an individual a sense of pride to belong to a collective group	• Inactivity can result to isolation for an individual and make people feel like they are not a part of a community / team.
Loneliness	• Gives many the opportunities to meet and be with other participants.	• Can result in a lack of people to talk to and this social isolation can lead to loneliness.

Key Words	Definitions
	Diet
Balanced Diet	Eating a wide variety of foods in the right proportion and consuming the right amount of food and drink to achieve and maintain a healthy body weight.
Carbohydrates	These are important because they provide the body with a quick energy source. For example wheat / pasta / bread.
Fats	Provide the body with insulation (heat). Too much fat can lead to health problems (obesity / CHD).
Protein	Are vital for repairing tissue and muscles in the body. For example meat and fish
Vitamins	Are vital in the production of energy. Found in fresh fruit and vegetables.
Fibre	Needed to make sure the digestive system works effectively and waste to be removed from the body regularly. For example beans / lentils and wholemeal bread

The Concerto

Feature	Definition
Concerto	A work for a solo instrument which plays with an orchestra
Orchestra	A group of players consisting of strings, woodwind, brass and percussion
Movements	Sections in a concerto. Usually slow, fast, slow.
Tutti	Where the whole orchestra plays together
Solo	Where the solo instrument plays and the orchestra accompanies
Cadenza	The orchestra stops and the soloist plays alone, usually virtuosically and using ornamentation
Concerto Grosso	A type of concerto from the Baroque period, where there are several soloists
Virtuoso	Performer who has outstanding ability on their instrument
Dynamics	
Terraced	Sudden changes
Crescendo	Gradually getting louder
Diminuendo	Gradually getting quieter
Instruments	
Strings	Violin, cello, viola
Woodwind	Flute, oboe, clarinet, bassoon
Brass	Trumpet, trombone, tube, french horn
Percussion	Kettle drums/timpani, triangle, bass drum, drum kit, cymbals
Continuo	Cello and harpsichord playing bassline and chords in Baroque music
Pitch	
Tonality	Major or minor
Ornamentation	Decoration of notes: trills, turns, acciaccaturas
Themes	Musical phrases and ideas that are passed between the orchestra and soloist
Sequences	A melody or phrase which is repeated at a higher or lower pitch
Pedal notes	Sustained notes
Diatonic	A style of harmony that only uses notes from within the key
Dissonance	Clashing notes

Feature	Definition
Structure	
Ternary	ABA
Binary	AB
Rondo	ABACADA
Imitation	When a melody is played then copied by another part
Dialogue	One part plays a melody then another plays a different melody to answer it
Tempo	
Vivace	Very fast
Allegro	fast
Moderato	Walking speed
Lento/grave	Slow
Articulation	
Tremolo	Where strings play the same note repeated very quickly
Legato	Smooth notes
Stacatto	Separated, short notes
Accents	Emphasised notes
Texture	
Polyphonic/ counterpoint	Many parts overlapping
Homophonic	One rhythm, different pitches (harmony)
Monophonic	One part
Melody and accompaniment	Main tune and other supporting parts
Concertino	Small group of soloists in a concerto grosso
Ripieno	Instruments accompanying the concertino
Countermelodies	An additional melody playing at the same time as the countermelody

	Baroque: 1600 - 1750	Classical: 1750 - 1810	Romantic 1810 - 1900
Dynamics	terraced	Crescendos and diminuendos	Wide range
Rhythms	Often fast and complex	Predictable	Unpredictable
Instruments	Few (if any) brass instruments Percussion: only timpani Woodwind: recorder, flute, oboe bassoon Harpsichord	Increased use of woodwind and brass (trumpets and French horns) No continuo Clarinets included in woodwind section Percussion: only timpani Piano	All woodwind and brass instruments. Woodwind and brass also playing melodies. Percussion – bass drum, side drum, cymbals.
Pitch	Modulations only to related keys	Diatonic harmony	Dissonance Chromatic chords included Modulations to unrelated keys
Structure	Usually orchestral introduction Balanced phrases Three movements	Usually orchestral introduction Balanced phrases Three movements Cadenza usually at end of first movement Soloist would not play in tutti sections	Sometimes dramatic solo at the beginning Movements longer Longer melodies
Tempo			Rubato
Articulation	Staccato or legato		Wide range
Texture	Polyphonic, contrapuntal, homophonic, Melody and accompaniment	Melody (usually played by violins) and accompaniment Homophonic	Denser and thicker Doubling of melodies Variety of instruments playing melodies
Other features	Continuo section Concerto Grosso Concertino Ripieno	Alberti bass	Often used a conductor
Famous Composer	Bach	Mozart	Tchaikovsky
Venue for performance	Church Concert hall	Church Concert hall	Church Concert hall
Role of the soloist	Plays the melody with the orchestra and solos	Does not play the melody with the orchestra	More virtuosic. Solo parts were much more difficult. Cadenzas rarely improvised
Size of orchestra	Small	Medium	Large

Art Knowledge Organiser

The Formal Elements

Line:	A path left by a moving point such as a horizontal, diagonal or curved mark.
Shape:	An area enclosed by a line.
Form:	A **three dimensional shape**, such as a cube, sphere or cone. When drawing, **tone** and **perspective** can be used to create an illusion of form.
Tone:	This refers to the lightness or darkness of something.
Texture:	Texture is something you can feel or touch. You can also create the illusion of different textures through **mark making** and **rendering**.
Pattern:	A design that is created by repeating lines, shapes, tones or colours.
Colour:	Colour is the element of art that is produced when light, striking an object, is reflected back to the eye.
Composition:	An arrangement of **shapes, patterns, lines** and **colour** of a piece of artwork.

Art Media

Oil pastels:	A painting and drawing medium with characteristics similar to wax crayons.
Watercolour paints:	A paint that is mixed with water to create light and blended **tones**.
Charcoal:	A lightweight black carbon and ash residue that is used for drawing and shading.
Chalk:	A soft, white, porous, carbonate rock used for drawing and shading.
Acrylic paints:	A water based paint made of plastic particles. This paint can be applied thickly or can be watered down to create a **watercolour** effect.
Oil paints:	A slow-drying oil based paint. This can be applied thickly or can be thinned by mixing with white spirit.
Coloured pencil:	A pencil with a coloured core made from pigmented wax or similar material.
Pencil:	An instrument for writing or drawing, consisting of a thin stick of graphite or a similar substance. Pencils are made in different degrees of darkness.
Ink:	A liquid that contains pigments or dyes used to colour a surface to produce an image, text, or design. This can be contained in a pen or applied with a brush.
Paper and card:	Made from wood pulp and waste paper, paper and card are made in a variety of weights and can be used to draw/ paint on or to create collages and models.
Digital art:	Art that uses digital technology as an essential part of the creative or presentation process. This can include photography and computer aided design.

Other Key Words

Depth:	The apparent distance from front to back or near to far in an artwork..
Mark making:	Any mark in any material used on any surface: e.g. paint on canvas, ink or pencil on paper, a scratched mark on plaster, a digital paint tool on a screen.
Primary source:	First-hand experiences such as using an objects, artefact, place or person to draw or paint.
Secondary source:	Material produced by others such as reproductions of images and artefacts, photographs, film, video or web-based material.
Recreate:	Create again or to copy. Make changes to improve a piece of work.
Refine:	
Detail:	In art this is the level of different parts of a drawing or painting. A detailed piece will contain many parts.
Realistic:	A precise, **detailed** and accurate piece of art.

Textiles Knowledge Organiser

The Formal Elements

Line:	A path left by a moving point such as a horizontal, diagonal or curved mark.
Shape:	An area enclosed by a line.
Form:	A **three dimensional shape**, such as a cube, sphere or cone. When drawing, **tone** and **perspective** can be used to create an illusion of form.
Tone:	This refers to the lightness or darkness of something.
Texture:	Texture is something you can feel or touch. You can also create the illusion of different textures through **mark making** and **rendering**.
Pattern:	A design that is created by repeating lines, shapes, tones or colours.
Colour:	Colour is the element of art that is produced when light, striking an object, is reflected back to the eye.
Composition:	An arrangement of **shapes, patterns, lines** and **colour** of a piece of artwork.

Fabric Construction Methods

Knitting:	Consists of **yarn** loops, called stitches.
Weaving:	Interlacing different materials, yarn or thread to create a woven surface.
Felting:	A non woven fabric of fibres, matted together by heat, moisture, and pressure.
Bonding:	Fibres bonded together by chemical, mechanical, heat or solvent treatment.

Fabric Decoration Techniques

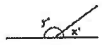
Embroidery:	Stitching onto a piece of fabric to create a shape or design. You can do this by hand or by using a sewing machine.
Print:	Applying colour to fabric in definite patterns or designs.
Appliqué:	Sewing a small piece of fabric onto a bigger piece of fabric.
Dyeing:	This involves changing the colour of a fabric.
Batik	Hot wax is applied to fabric, which is then dyed. The wax resists the dye, preventing it from reaching those areas.

Materials and Equipment

Tjanting:	An instrument for applying hot wax in batik.
Needle:	A very fine slender piece of polished metal with a point at one end and a hole or eye for thread at the other, used in sewing.
Thread:	A long, thin strand of cotton, nylon, or other fibres used in sewing or weaving.
Yarn:	Spun thread used for knitting, weaving, or sewing.
Calico:	A type of cotton cloth, typically plain white or unbleached.
Squeegee:	A blade of leather or rubber set on a handle and used for pushing fabric paint through a **silk screen** to create a **screen print**.
Heat press:	A machine with hot metal plates that can be used for **transfer printing** or **appliqué**.
Bondaweb:	An extra strong, adhesive web which bonds one fabric to another when ironed.

GCSE MATHS NEED TO KNOW - HIGHER

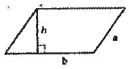
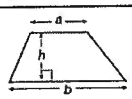
GEOMETRY

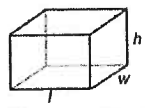
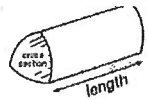
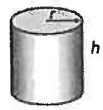
Angle facts - lines		
1	Vertically opposite angles	are equal
2	Angles on a straight line	add up to 180 
3	Angles at a point	add up to 360
4	Alternate angles	are equal
5	Corresponding angles	are equal
6	Co-interior angles	add up to 180

Angle facts – triangles and quadrilaterals		
7	Angles in a triangle	add up to 180
8	Base angles of an isosceles triangle	are equal
9	Angles in an equilateral triangle	are equal (all 60)
10	Angles in a quadrilateral	add up to 360

Angle facts - polygons		
11	Exterior angles of a polygon	add up to 360°
12	The interior and exterior angle of any polygon	add up to 180°
13	The sum of the interior angles of a polygon can be found by using the formula	**(number of sides-2) x 180º**
14	Regular polygons have all sides the same length and all angles the same size	

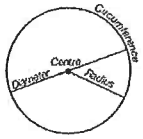
Congruence and similarity		
15	Triangles are congruent (exactly the same) if...	SSS ASA SAS RASH
16	Triangles are similar if...	All angles are the same (AAA They are an enlargement of each other
17	Area scale factor	Length scale factor ^{2}
18	Volume scale factor	Length scale factor ^{3}

Areas		
19	Rectangle = l x w	
20	Parallelogram = b x h	
22	Triangle = ½ b x h	
23	Trapezium = ½ (a + b) x h	

Volumes		
24	Cuboid = l x w x h	
25	Prism = area of cross section x l	
26	Cylinder = πr^2 x h	
27	Pyramid = $\frac{1}{3} \times area\ of\ base \times h$	

Surface area		
28	Surface area of a prism	The sum of the area of all the faces
29	Surface area of a cylinder	$2 \times \pi r^2 + \pi d \times h$

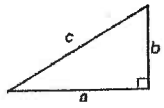
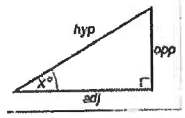
Circles

30	Circumference = $\pi \times d$	
31	Area = πr^2	
32	Area of a sector	$\frac{\theta}{360} \times \pi r^2$
33	Arc length	$\frac{\theta}{360} \times \pi d$

Describing Transformations

40	Rotation	• Direction (clockwise or anticlockwise) • Degrees • Centre of rotation
41	Reflection	• Line of reflection
42	Translation	• Vector $\begin{pmatrix} x \\ y \end{pmatrix}$
43	Enlargement	• Scale factor • Centre of enlargement

Pythagoras and Trigonometry

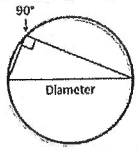
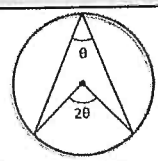
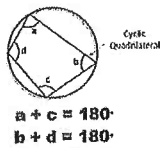
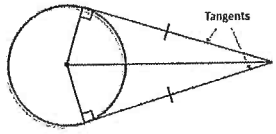
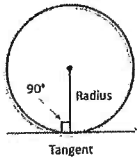
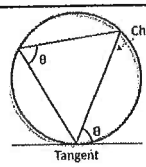
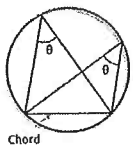
34	Pythagoras' Theorem For a right angled triangle, $a^2 + b^2 = c^2$	
35	Trigonometric ratios $sin\theta = \frac{opp}{hyp}$ $cos\theta = \frac{adj}{hyp}$ $tan\theta = \frac{opp}{adj}$	
36	Sine rule	$\frac{a}{sinA} = \frac{b}{sinB} = \frac{c}{sinC}$
37	Cosine rule	$a^2 = b^2 + c^2 - 2bc\ CosA$
38	Area of a triangle	$A = \frac{1}{2}ab \sin C$

Exact values

39

	30°	45°	60°
sin	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
cos	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
tan	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$

Circle theorems

44	The angle in a semi-circle is 90		48	The angle at the centre is twice the angle at the circumference	
45	Opposite angles in a cyclical quadrilateral add up to 180	 **a + c = 180°** **b + d = 180°**	49	Two tangents from the same point are equal in length	
46	The angle between a tangent and a radius is 90		50	Alternate Segment Theorem	
47	Angles at the circumference in the same segment are equal				

NUMBER

FDP		
51	% increase	Find the % and add it on
52	% decrease	Find the % and take it away
53	Compound interest	**original x % multiplier** $^{\text{number of years}}$
54	Compound depreciation	**original x % multiplier** $^{\text{number of years}}$
55	Convert a fraction to a decimal	Make the denominator 10 or 100 OR divide the numerator by the denominator
56	Convert a decimal to a %	X 100

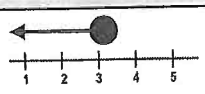
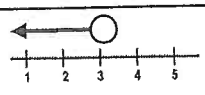
Surds		
57	$\sqrt{a} \times \sqrt{b}$	$\sqrt{ab}$
58	$\frac{\sqrt{a}}{\sqrt{b}}$	$\sqrt{\frac{a}{b}}$
59	$\sqrt{a} \times \sqrt{a}$	a
60	$(\sqrt{a}+1)(\sqrt{a}-1)$	$a-1$

Standard form		
67	0.0004	4×10^{-4} (the number must be between 1 and 10)
68	40000	4×10^{4} (the number must be between 1 and 10)

Indices		
61	$a^b \times a^c$	a^{b+c}
62	$\frac{a^b}{a^c}$	a^{b-c}
63	$(a^b)^c$	a^{bc}
64	a^0	1
65	a^{-b}	$\frac{1}{a^b}$
66	$\frac{b}{a^c}$	$\sqrt[c]{a^b}$

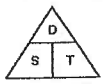
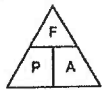
Conversions		
69	1cm	10mm
70	1m	100cm
71	1km	1000m
72	cm → m	÷ 100
73	cm^2 → m^2	$\div 100^2$
74	cm^3 → m^3	$\div 100^3$

ALGEBRA

Equations		
75	Like terms have what...	Same letter, same index
Inequalities		
76	$x \leq 3$ Solid line on a graph	
77	$x < 3$ Dotted line on a graph	

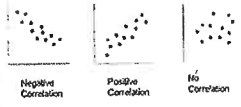
Graphs		
78	$y = mx + c$	$m = gradient$ $\frac{Difference\ in\ y}{Difference\ in\ x} = \frac{y_2 - y_1}{x_2 - x_1}$ $c = y\ intercept$ (where the line crosses y axis)
79	To find the mid-point	$(\frac{x1+x2}{2}, \frac{y1+y2}{2})$
80	Parallel lines	Have the same gradient
81	Perpendicular lines	Gradient = $-\frac{1}{gradient}$

Quadratic formula and completing the square		
82	$x =$	$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
83	$x^2 + 2a + b$	$(x+a)^2 - a^2 + b$

Compound measures		
84	Speed $speed = \frac{distance}{time}$	
85	Density $density = \frac{mass}{volume}$	
86	Pressure $pressure = \frac{force}{area}$	

Functions of graphs		
87	$f(x+a)$	Translate by vector $\begin{pmatrix}-a\\0\end{pmatrix}$ (Shift in the x-direction by –a)
88	$f(x-a)$	Translate by vector $\begin{pmatrix}+a\\0\end{pmatrix}$ (Shift in the x-direction by + a)
89	$f(x)+a$	Translate by vector $\begin{pmatrix}0\\+a\end{pmatrix}$ (Shift in the y-direction by +a)
90	$f(x)-a$	Translate by vector $\begin{pmatrix}0\\-a\end{pmatrix}$ (Shift in the y-direction by -a)
91	$-f(x)$	Reflection in the x-axis
92	$f(-x)$	Reflection in the y-axis
93	$af(x)$	Shrink or stretch graph vertically by a factor of a. (Multiply y-coordinates of f(x) by a).
94	$f(ax)$	Shrink or stretch graph horizontally by a factor of a. (Divide x-coordinates f(x) by a)

DATA, RATIO AND PROPORTION

Correlation		
95		
96	Line of best fit	A straight line drawn with a ruler that goes through the data with roughly the same number of points on each side of the line

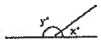
Probability		
103	Probabilities of mutually exclusive events	Add up to 1
104	$P(A \cap B)$	Probability of A AND B
105	$P(A \cup B)$	Probability of A OR B
106	$P(A \mid B)$	Probability of A GIVEN B
107	$P(B \mid A)$	Probability of B GIVEN A
108	$P(B')$	Probability of NOT B

Averages		
97	Mean	Add all the numbers and divide by how many there are
98	Median	Order the numbers from smallest to biggest and find the middle number
99	Mode	Most frequent
100	Range	Difference between the highest and lowest value
101	Mean from a frequency table	$\frac{Total\ Fx}{Total\ F}$
102	Mean from a grouped frequency table	1. Find the mid point of each group 2. $\frac{Total\ Fx}{Total\ F}$

Proportion		
109	Direct proportion	$y \propto x$ $y = kx$
110	Indirect proportion	$y \propto \frac{1}{x}$ $y = \frac{k}{x}$

GCSE MATHS NEED TO KNOW - FOUNDATION

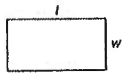
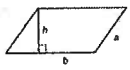
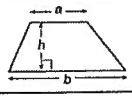
GEOMETRY

Angle facts - lines		
1	Vertically opposite angles	are equal
2	Angles on a straight line	add up to 180 
3	Angles at a point	add up to 360
4	Alternate angles	are equal
5	Corresponding angles	are equal
6	Co-interior angles	add up to 180

Angle facts – triangles and quadrilaterals		
7	Angles in a triangle	add up to 180
8	Base angles of an isosceles triangle	are equal
9	Angles in an equilateral triangle	are equal (all 60)
10	Angles in a quadrilateral	add up to 360

Angle facts - polygons		
11	Exterior angles of a polygon	add up to 360°
12	The interior and exterior angle of any polygon	add up to 180°
13	The sum of the interior angles of a polygon can be found by using the formula	**(number of sides-2) x 180º**
14	Regular polygons have all sides the same length and all angles the same size	

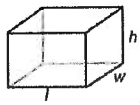
Congruence and similarity		
15	Triangles are congruent (exactly the same) if...	SSS ASA SAS RASH
16	Triangles are similar if...	All angles are the same (AAA They are an enlargement of each other
17	Area scale factor	Length scale factor ^{2}
18	Volume scale factor	Length scale factor ^{3}

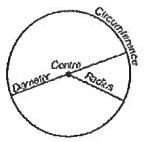
Areas		
19	Rectangle = l x w	
20	Parallelogram = b x h	
21	Triangle = ½ b x h	
22	Trapezium = ½ (a + b) x h	

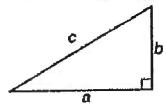
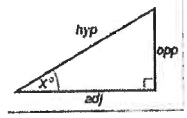
"Half the sum of the parallel sides, times the distance between them
That is how you calculate
The area of a trapezium"

"Factors come in two by two, hurrah, hurrah"

"Multiples are in the times tables..."

Volumes		
23	Cuboid = l x w x h	
24	Prism = area of cross section x l	
25	Cylinder = πr^2 x h	
Surface area		
26	Surface area of a prism	The sum of the area of all the faces
27	Surface area of a cylinder	$2 \times \pi r^2 + \pi d \times h$

Circles		
28	Circumference = π x d	
29	Area = πr^2	
30	Area of a sector	$\frac{\theta}{360} \times \pi r^2$
31	Arc length	$\frac{\theta}{360} \times \pi d$

Pythagoras and Trigonometry		
32	Pythagoras' Theorem For a right angled triangle, $a^2 + b^2 = c^2$	
33	Trigonometric ratios $sin\theta = \frac{opp}{hyp}$ $cos\theta = \frac{adj}{hyp}$ $tan\theta = \frac{opp}{adj}$	

Circumference is pi times diameter, pi times diameter, pi times diameter
Circumference is pi times diameter, pi times diameter, pi times diameter
Area is pi r squared

Describing Transformations		
34	Rotation	• Direction (clockwise or anticlockwise) • Degrees • Centre of rotation
35	Reflection	• Line of reflection
36	Translation	• Vector $\begin{pmatrix} x \\ y \end{pmatrix}$
37	Enlargement	• Scale factor • Centre of enlargement

NUMBER

FDP		
38	To find a % of an amount...	Find 10% (by dividing by 10) Find 1% (by dividing by 100)
39	100%	1
40	50%	0.5 or $\frac{1}{2}$
41	25%	0.25 or $\frac{1}{4}$
42	12.5%	0.125 or $\frac{1}{8}$
43	10%	0.1 or $\frac{1}{10}$
44	% increase	Find the % and add it on
45	% decrease	Find the % and take it away
46	Compound interest	**original x % multiplier** number of years
47	Convert a fraction to a decimal	Make the denominator 10 or 100 OR Divide the numerator by the denominator
48	Convert a decimal to a %	X 100

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58	cm → m	÷ 100
59	m → cm	× 100
60	cm^2 → m^2	÷ 100^2
61	cm^3 → m^3	÷ 100^3
62	1000g	1kg
63	1000ml	1l

ALGEBRA

Equations		
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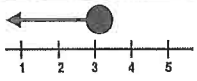
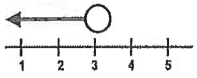
Inequalities		
65	$x \leq 3$ Solid line on a graph	
66	$x < 3$ Dotted line on a graph	

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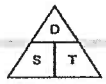
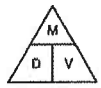
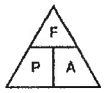
71	Speed $speed = \frac{distance}{time}$	
72	Density $density = \frac{mass}{volume}$	
73	Pressure $pressure = \frac{force}{area}$	

DATA, RATIO AND PROPORTION

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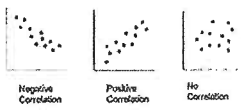
74		
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Mean is average, mean is average
Mode is most, mode is most
Median's in the middle, median's in the middle
Range high low, range high low