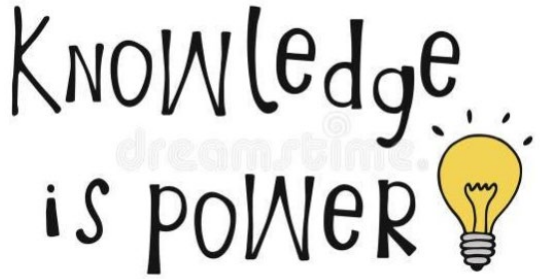
SARACENS
HIGH SCHOOL

Year 10 Knowledge Organiser



Summer Term
2023-2024

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KS4 Knowledge Organiser

1	Tone	Creating areas of light to dark on a piece of art
2	Line	The path left by a moving point. For example, a pencil or a brush
3	Shape	A shape is an area enclosed by a line
4	Form	A three dimensional shape or making a piece of artwork appear 3D
5	Pattern	A design that is created by repeating lines, shapes, tones or colours
6	Texture	How the artwork feels
7	Colour	Used to show what something looks like or to create a certain mood
8	Primary Colour	Blue, Red and Yellow. Cannot be made by mixing other colours together
9	Secondary Colour	Green, Orange and Purple. Made by mixing equal amount of 2 primary colours.
10	Harmonious Colours	Colours that sit next to each other on the colour wheel
11	Complementary Colours	Colours that sit opposite each other on the colour wheel and create contrast
12	Warm Colour	Red, Orange and Yellow
13	Cool Colour	Blue, Green and Purple
14	Monochrome	Using different tones of only one colour in a piece of art
15	Composition	How the elements in the work are arranged
16	Proportion	The size of something compared to something else
17	Scale	The overall size of a piece of artwork of the size of objects within the artwork
18	Focal Point	What you look at first is in a piece of art
19	Contrast	Using opposite elements within a piece of art. For example black and white
20	Foreground	The objects closest to you in a piece of art
21	Midground	The objects in between the foreground and background of a piece of art
22	Background	The objects furthest from you in a piece of art
23	Abstract	Art that does not represent an accurate image of reality
24	Realistic	Art that shows a realistic representation of reality
25	Shadows	The darkest tone to represent the darkest areas of a piece of art
26	Highlights	The lightest tone to represent the lightest areas of a piece of art
27	Mid tones	The tones in between the light and dark areas of a piece of art

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KS4 Knowledge Organiser

28	Landscape	Artwork of a natural scenery such as mountains, fields etc
29	Portrait	A piece of art that shows a persons face
30	Conceptual	Artwork that focuses an idea behind the work rather that the outcome
31	Mood	The atmosphere / emotion of feeling expressed in a piece of art
32	Expressive	Using shape, line, patterns and colour in an abstract way to create a thought / feeling
33	Pastiche	Art that copies the style of another piece of artwork
34	Minimalism	Artwork that consists of a simple design usually made up of shapes and or lines
35	Negative Space	The space around the artwork that has nothing there
36	Mural	Artwork that has been created on to a wall usually large scale
37	Typography	What text / words are referred to in your artwork
38	Media / Medium	The materials used to create art. For example pen, paint, pencil
39	Mixed Media	More than one media / medium used to create a piece of art

Techniques and Mediums		
40	Directional Shading	Shading following the direction of the object to build texture and tone
41	Stippling	Dots used to build texture and or tone
42	Cross-hatching	Lines that go in multiple directions used to build texture and or tone
43	Hatching	Line that go in the same direction used to build texture and tone
44	Scumbling	Overlapping lots of little circles used to build texture and tone
45	Bleeding	Running one colour into another
46	Blending	Mixing colours to create a gradual transition from one colour to another
47	Tonal Drawing	Drawing that consists of shading using tones of dark to light
48	Continuous Line Drawing	A drawing where the line is continuous and does not break
49	Line Drawing	A drawing that concentrates on the outline and main lines within a drawing but not tone
50	Applique	Joining one piece of fabric on top of another in a decorative way
51	Embellishment	Decorating fabric using buttons, beads and sequins etc
52	Embroidery	Decorating fabric through stitching

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KS4 Sustained Project Knowledge Organiser

53	Art, Craft and Design	The GCSE pupils will get at the end of this course. To complete this course you must show evidence of working within 2 or more of the following areas: fine art, graphic design, textiles, photography and 3D
54	Assessment Objectives	This is what you are assessed by. There are 4 assessment objectives and you must show evidence of working in all 4 areas. The objectives are evenly weighted out of 24 marks.
55	Assessment Objective 1	To hit this objective you must show evidence of **developing ideas through investigations, demonstrating critical understanding of sources.** This means you must analysis the work of other artists / research from articles, poems, songs, books etc to support the development of your own ideas
56	Assessment Objective 2	To hit this objective you must show evidence of **refining work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.** This means you must show how you can develop work using previous ideas working within a variety of mediums and making informed and relevant choices
57	Assessment Objective 3	To hit this objective you must show evidence of **recording ideas, observations and insights relevant to intentions as work progresses.** This means you must record the ideas behind your work and how your work is progressing through annotation or visual means if this is obvious.
58	Assessment Objective 4	To hit this objective you must show evidence of **producing a personal response that realises intentions and demonstrates understanding of visual language.** This means you must show evidence of a creative journey that shows links to the work of others as well bringing together their own intentions through trails, tests and experiments.
59	Sustained Project	A body of work that can be created within a sketchbook or on separate piece of paper. The work starts with a starting point and pupils will evidence all assessment objectives through a journey of initial engagement to realisation of intentions
60	Annotation	Written explanations added to work to explain and record ideas and thoughts. This is really important as it lets the person looking at your work understanding the ideas
61	Component	The term 'Unit of Work' has been replaced by the term 'Component'. There are two sections to the GCSE: Component 1: which is a portfolio of work; Component 2: is an externally set assignment by AQA
62	Preparatory Work	This is the work created in response to the starting point of a sustained project and should support you in creating a final personal response.
63	Personal Response	Creating an outcome that is informed by your preparatory work. This can happen throughout the project as mini personal responses or at the end of the project and a final personal response

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KS4 Sustained Project Knowledge Organiser

64	Non-examined assessment (NEA)	This is component 1 and worth 60% of the GCSE. Pupils will responded to a sustained project with a set starting point set by the teacher.
65	Portfolio	Needed for component 1, pupils must submit a body of work that must include a sustained project and a selection of further work produced during the course of study.
66	Externally Set Assignment (ESA)	This is component 2 and worth 40% of your GCSE. This is set out in the same way as component 1 above. The differences are; pupils must select one of the seven starting points from the externally set paper. The final response will be created during a 10 hours of supervised time. Once this time starts you cannot add to any more of your preparatory work. After the supervised time pupils are not allowed to continue with component 2.
67	Supervised Time	At the end of component 2 pupils will produce their final response during 10 hours of supervised time. This is unaided which means pupils cannot have any help. Therefore, pupils must go into this supervised time knowing exactly what they are going to do and how they are going to do it

Check out the example sustained project that has the starting point of Identity

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Year 10 Knowledge Organiser Practical tasks Term 3

1	What is the starting point of the sustained project you have started?	
2	List any ideas / keywords / artists you that link to the starting point?	
16	Write your initial intentions that link to your starting point. Your initial intentions should say how you have interpreted the starting point and what you aim to do next. **Do not talk about any final response**	
17	Create a list of things to photograph that links to your initial intentions that you could then complete observational drawings of	
18	List different mediums and or techniques you want to experiment with. For example monoprinting, watercolour, lino printing, heat press, pencil drawings	
19	Write down what you are currently doing in your project and what you want to do next to develop your work further. You might want to ask your learning coach to photograph what you have written to email to you so you can write this in your work.	
20	Write down / sketch how you visualise your current personal response. You might want to scan / ask your learning coach to photograph what you have doneto email to you so you can put this in your work.	

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Year 10 Knowledge Organiser Practical tasks Term 3

21	Write down / sketch how you visualise your current personal response. You might want to scan / ask your learning coach to photograph what you have done to email to you so you can put this in your work.	
22	Write down what you are currently doing in your project and what you want to do next to develop your work further. You might want to ask your learning coach to photograph what you have written to email to you so you can write this in your work.	
23	Write down / sketch how you visualise your final personal response. You might want to scan / ask your learning coach to photograph what you have done to email to you so you can put this in your work.	
24	Write down the idea behind your final personal response and how it links back to your intentions	
25	Write down how you are going to complete your final response and what mediums and materials you are going to need. For example canvas, watercolours, pencils	

OPERATING SYSTEMS

1	What is an operating system?	The software that is used to manage the hardware within a computer system
2	Give three examples of utility software	Defragmentation, compression, encryption
3	What is a user interface?	The user interface allows the user to work with the computer sending and receiving information
4	What four ways the user can control the computer	Keyboard, mouse, touchscreen, voice command
5	What four ways can a computer send information or signals to the user	Sounds, text, images, vibration
6	What is an embedded system?	A processor included in a device which is not a computer, for one specific task
7	What tasks are involved in file management?	Organising files in secondary storage; lets the user open, copy, move or delete files
8	What is a peripheral device?	A peripheral device is a device attached to the computer processor
9	Give two typical functions of peripheral devices	Input and output devices
10	What is the purpose of user management?	User management is needed if there are many users of the system; the operating system keeps track of multiple users, so each one sees their own work files
11	Why is memory management more difficult if the computer is multi-tasking?	Memory management means keeping track of the area of memory where instructions and data are held; when the computer is multi-tasking more than one area of memory is in use at the same time
12	What is encryption?	Encryption utilities use an algorithm to scramble plain text into cipher text. It can be decrypted and read again with a Key.
13	What is defragmentation?	Defragmentation utilities reorganise files on a hard disk, putting fragments of files back together, and it collects free space. This reduces the movement of a read/write head across the surface of the disk, which speeds up file access.
14	What is compression?	Compression utilities reduce the size of a file so that it takes up less space and is quicker to download/upload. Compressed files must be extracted before they can be read. Compression is lossy or lossless.

NETWORK SECURITY

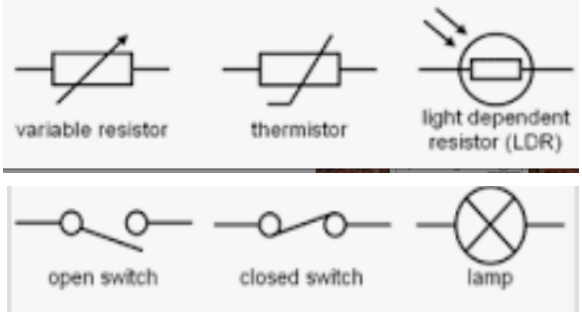
15	What are the three different user access levels?	Read-write access; see and change files; Read-only access: see files but can't make changes; No access: can't see files
16	What is the brute force method for finding a password?	Try every combination of characters until you hit the right password by chance
17	What is the social engineering method for finding out a password?	trick someone into telling you their password, for example, by pretending to be a legitimate organisation like a bank
18	What is malware and why does it pose a threat to computer systems?	Malware is malicious software you can't see on your computer; the computer will run the software and do something that you don't want it to do
19	How does denial of service attack disrupt a computer system?	Too many messages or requests are sent to a computer system; they overload the server or the bandwidth
20	What is SQL language?	SQL is a programming language used to work with databases; if you put an SQL command into the data of a database, that can make the database delete its own files
21	Explain how penetration testing is used to make a system more secure	People try to break into a computer system to find weaknesses in the system and get past the security; they have permission from the system owners
22	What is a firewall and how does it protect a computer system?	A firewall is made of hardware and software; it reads and checks every signal that goes in to or out of a network to stop harmful content
23	Describe three physical security methods	Rooms are physically locked Security staff on guard Entry to the room is controlled by, for example, passcodes, swipe cards, or biometrics
24	How does encrypting your messages help to protect them from unauthorised access?	Encryption scrambles digital signals using a hidden code; intercepted messages can't be read

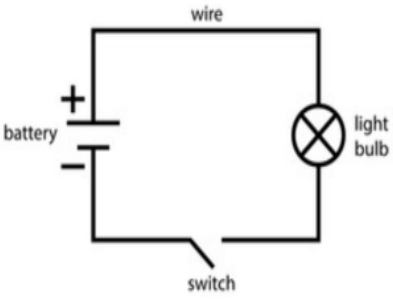
Epic Theatre Techniques	
1. Breaking the fourth wall	Speaking directly to the audience breaks the fourth wall and destroys any illusion of reality.
2. Alienation (Verfremdungseffekt)	Alienating or distancing the audience (making them separate from the action)
3. Gestus	a clear character gesture or movement that captures a moment or attitude rather than delving into emotion.
4. Use of placards	a sign or additional piece of written information presented onstage
5. Narration	used to remind the audience that what they're watching is a presentation of a story. Sometimes the narrator will tell us what happens in the story before it has happened
6. Multi-role	Playing more than one character
7. Minimal set/costume/props	Using a bare stage and basic costumes so that the audience can focus on the message rather than becoming emotionally involved
8. Masks	Use of masks to remove emotional connection with the audience
9. Still image	Using levels, facial expressions, body language and imagination to create a frozen picture which can reveal characterisation, status or a key plot moment
10. Thought track	When the action freezes and a character reveals their true thoughts and feelings to the audience without the other characters on the stage hearing them
11. Hot seating	A rehearsal technique which can be used in performance to reveal information about the character
12. Flashbacks or Flash forwards	When the action goes back or forwards in time to reveal further details or provide different potential scenarios depending on the outcome of a character's choice
13. Cross-cutting	Two scenes which take place at the same time on stage which depict two different locations often building tension and atmosphere
14. Marking the moment	Use of a technique such as slow motion, still image or thought-tracking to highlight a key moment
15. Soundscape/Sound collage	A collection of sounds made by the cast to create atmosphere, denote location or build tension. These can be made vocally or with instruments.
16. Conscious alley	Where a character walks down an 'alleyway' created by two rows of people who will offer opposing views or opinions on a the issue the character is facing

Standard Components in systems.

1 **Circuit diagrams show the layout of components on a PCB. Printed Circuit Board**

2





2	INPUT	Detects	PROCESSOR	OUTPUT
3	LDR:Light Dependant Resistor	Light	Microcontroller	Speaker
4	Thermistor	Heat	Amplifier	Bell
5	Movement Sensor	Movement	Programmable Intelligent Controller	Flashing light
6	Piezoelectric sensor	pressure, acceleration, temperature, strain, or force		LED
7	Switch	Connections		Heat/Cold
8	PIR (Movement Sensor)	Passive Infra Red		Buzzer

9 **Resistor:** Reduce current flowing around a circuit to protect components

10 E12 = **Fixed Resistors** = Constant resistors

11 LDR= **Light Dependant Resistors**= Variable with light levels

12 Thermistors= Variable with temperature

13 **There are Series of Resistors.**

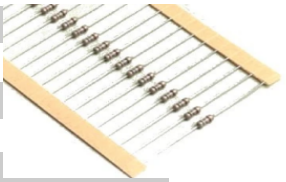
14 E12 has 12 values

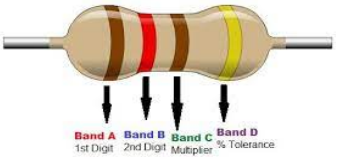
15 Each value can be x by 10, 102 or 103 etc.

16 Resistance is measured in OHMS

17 Resistors have a +/- 10 % Tolerance

18 Colured bands show the value of the resistor.



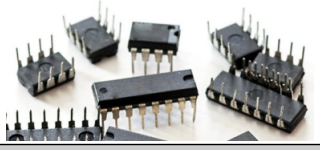


19 **Capacitor:** Small charge storage: Used to stabalise power and supply power when suddenly needed…ie a camera flash.

20 **Ceramic Capacitor** no Polarity **Electrolytic Capactitor** Polarity is VERY important.

21 **A microprocessor** An integrated circuit that contains no memory. A microcontroller has the ability to store information.

22 **PIC** programmable interface controller (PIC)



23 **Software to write programmes** PICAXE editor, GENIE,Yenka

24 **Flowchart:** Input =Processor=Output

25 **Incircuit programming :** Microcontroller programmed whilst in place in circuit

ENGLISH	YEAR 10	POWER AND CONFLICT POETRY	TERM 3.2	PAGE 1

Key Vocabulary

1	**Metaphor**	When the writer compares one thing to another using the words 'is' or 'was.'	**8**	**Zoomorphism**	When you give a human or inanimate object animal-like qualities.
2	**Simile**	When the writer compares one thing to another using the words 'like' or 'as.'	**9**	**Oxymoron**	A figure of speech that combines contradictory words with opposing meanings, e.g. 'old news', 'deafening silence', or 'organised chaos'
3	**Alliteration**	When a group of words all begin with the same consonant sound or letter.	**10**	**Pathetic Fallacy**	When human characteristics are applied to things (often found in nature)
4	**Superlative**	An exaggerated label or trait given to a character or thing.	**11**	**Personification**	The act of giving a human quality or characteristic to something which is not human.
5	**Rhetorical Question**	A question asked for effect and which does not need an answer	**12**	**Sibilance**	A type of alliteration where the 's' sound is repeated.
6	**Emotive Language**	Words used to create particular feelings or emotions in readers.	**13**	**Assonance**	The repetition of vowel sounds.
7	**Semantic Field**	When the writer gives an inanimate object human qualities.	**14**	**Volta**	Turning point in a poem.

	Themes	Content, Meaning and Purpose	Context	Form and Structure
15 Exposure by Wilfred Owen	Conflict, Suffering, Nature, Reality of War, Patriotism	The speaker describes war as a battle against the weather and conditions. The imagery of cold and warm reflect the delusional mind of a man dying from hypothermia. Owen wanted to draw attention to the suffering, monotony and futility of war.	Written in 1917 – written by a soldier giving it authenticity. Owen had a deep sense of duty despite highlighting the tragedy of war and mistakes of senior commanders.	Repetition of 'but nothing happens' creates cyclical structure implying never ending suffering. Rhyme scheme ABBA and hexameter gives the poem structure and emphasises the monotony.
16 Storm on the Island by Seamus Heaney	Power of Nature, Fear	The narrator describes how a rural island community prepared for a coming storm, and how they were confident in their preparations. When the storm hits, they are shocked by its power. The final line reveals their fear of nature's power.	Heaney was Northern Irish and the poem was published 1966 at the time of the Irish 'Troubles'. The first 8 letters of the title spell Stormont - Northern Ireland's parliament. It might be a metaphor for the political storm at the time.	Written in blank verse with lots of enjambment. Split into 3 sections: confidence, the violence of the storm and Fear. There is a turning point (volta) in line 14. The phrase 'but no' and the caesura reflects the calm before the storm.
17 Extract from the Prelude by William Wordsworth	Power of Nature, Fear, Childhood	The story of a boy's love of nature and a night-time adventure in a rowing boat that creates a deeper and fearful respect for the power of nature	It was part of a very long poem (14 books) that told the story of Wordsworth's life. He was a Romantic poet and so his poetry explores themes of nature, human emotion and human interaction with nature.	1st person narrative. It has a regular rhythm and enjambment. It is split into 3 sections: carefree and confident (lines 1-20); dark and fearful (lines 21-31); reflective and troubled (lines 32-44)
18 Ozymandias by Percy Bysshe Shelley	Power of Nature, Decay, Pride (Hubris)	The narrator meets a traveler who tells him about a decayed statue that he saw in a desert. It was of a long forgotten ancient King – Ozymandias. The poem is ironic and one big metaphor. Human power is temporary and is overcome by the Power of Nature.	Shelley was a Romantic poet interested in emotion and the power of nature. He disliked the concept of monarchy and oppression of ordinary people. He was influenced by the French Revolution.	It is a sonnet (14 lines). There is a volta in line 9. It is written in iambic pentameter. In the first 8 lines the statue is described in parts to show its destruction. The final 2 lines the huge and immortal desert is described to emphasise the fragility of human pride.
19 My Last Duchess by Robert Browning.	Power of Man, Pride (Hubris) Control, Jealousy	The Duke shows a visitor around his large estate and points out the portrait of his last wife. He was annoyed at her over-friendly and flirtatious nature. He can finally control her by objectifying her.	Browning was a British poet living in Italy. The poem was published in 1842 and may have been inspired by the story of the Duke of Ferrara whose wife died in suspicious circiumstances.	It is a Dramatic monologue in iambic pentameter. There is heavy use of caesura to show his frustration and anger. It is also full of dramatic irony giving it a much more sinister undertone.

Weekly Spelling Test Words – You will need to know how to spell all the words listed below.

1. **Abstract:** an idea rather than a thing.	31. **Rhythm:** a recurring beat in a poem
2. Alliteration: repeated first consonant sound.	32. **Volta:** the turning point of a poem.
3. **Assonance:** repeated vowel sound.	33. **Antithesis:** placing two contrasting ideas /characters together.
4. Anaphora: repeating the first words at the start of a line.	34. **Ambiguity:** a word where there are two or more possible meanings
5. Cliché: over-used phrase	35. **Stanza:** a group of lines separated from others in a poem (verse)
6. Colloquial language: casual, informal language	36. **Caesura:** a stop or pause in a line of poetry – caused by punctuation marks.
7. Extended metaphor: a series of linked metaphors.	37. **Quatrain:** a four line stanza.
8. Hyperbole: exaggeration for effect	38. **Sestet:** a six line stanza.
9. **Imagery**: visually descriptive or figurative language.	39. **Couplet**: a pair of lines which follow on from each other and invariably rhyme.
10. Internal Rhyme: rhyme on the same line.	40. **Sonnet:** a fourteen line poem.
11. **Irony**: a use of words to mean something different from what they appear to mean.	41. F**igurative Language:** the use of words or phrases to create a special meaning.
12. **Metaphor**: something described as something else.	42. **Evokes:** to call or summon up a memory or feeling.
13. Motif: recurring theme or symbol.	43. **Depicts:** portray/describe in words.
14. Onomatopoeia: a sound word.	44. **Emphasises:** give special importance or value to something in writing.
15. Pathetic Fallacy: giving human emotion and conduct to things found in nature including the weather.	45. **Implies:** suggest something as a logical consequence.
16. **Personification**: giving human characteristics to inanimate objects.	46. **Illustrates:** serve as an example of.
17. **Plosive**: letters p/t/k/b/d/g	47. **Foreshadows:** be a warning or indication of a future event.
18. Semantic field: a group of words related in meaning.	48. **Connotes:** implies or suggests.
19. **Sibilance**: a repeated s sound.	49. **Denotes:** be a sign of or indicate.
20. **Simile**: saying something is <u>like</u> or <u>as</u> something else.	50. **Conveys:** make something known or understandable.
21. Beginning: the establishment of ideas at the start.	**51. Accentuates:** make more noticeable or prominent.
22. Chronological: in time order.	52. **Provokes:** stimulate a reaction in.
23. Enjambment: a sentence that runs over stanzas.	53. **Conversely**: in an opposite way.
24. Flashback: set I a time earlier than the main narrative.	54. **Inference:** an opinion that you form based on the information that you have.
25. **Iambic pentameter**: 5 sets of unstressed/stressed beats on a line.	55. **Structure:** the organization of a poem's various elements.
26. Juxtaposition: placing contrasting ideas close together in a text.	56. **Chorus:** a part of a poem which is repeated after each verse.
27. Oxymoron: two opposite words next to each other.	**57 Allusion:** Unacknowledged reference and quotations that authors assume their readers will recognise
28. Refrain: repeated lines (like a chorus in a song)	58. **Conceit:** an ingenious or fanciful comparison or metaphor.
29. Repetition: a pattern of repeated words/ideas.	59. **Allegory:** a narrative with an underlying moral message
30. Rhyme scheme: the organization of the rhyme.	**60. Paradox:** a situation or phrase that appears to be contradictory but that also contains some measure of truth.

	Plot
Stave 1	On Christmas Eve, charity collectors visit the miserly Ebenezer Scrooge and his clerk Bob Cratchit in their counting house. Scrooge refuses to donate money to the poor and destitute. He also turns down his nephew Fred's invitation to Christmas dinner. At home, Scrooge is visited by the ghost of his old business partner, Jacob Marley. Marley's ghost is bound in a chain forged of cashboxes, ledgers, and more, reminders of his sins on Earth. To save Scrooge from encountering a similar fate, Marley tells Scrooge that he will be visited by three spirits over the next three nights.
Stave 2	Scrooge awakens to the Ghost of Christmas Past who transports him to the countryside where he grew up, overwhelming Scrooge to tears at the sight of memories from his youth. He is reminded of his apprenticeship with Fezziwig, who is shown to be a jovial and generous employer. Afterward, Scrooge is taken to a scene where Belle, his fiancée at the time, calls off their engagement, claiming that greed has corrupted him. Scrooge is distraught to witness Belle with her family, years later, discussing Scrooge's solitude on Christmas Eve. Scrooge begs the ghost to take him back home, and after the ghost disappears, he falls back to sleep.
Stave 3	Scrooge meets the Ghost of Christmas Present who leads Scrooge through the jovial crowds of people on Christmas Day. Scrooge is led to the home of Bob Cratchit, where he inquires whether the weak Tiny Tim will survive, leading the ghost to respond that it is unlikely. After enjoying himself at Fred's Christmas party, Scrooge is taken to a desolate expanse where he is confronted by a hooded figure.
Stave 4	The Ghost of Christmas Yet to Come leads Scrooge through a series of scenes involving the death of a rich, unforgiving man: the London Stock Exchange, where a group of businessmen discuss the death of a rich man; a dingy pawn shop in a London slum, where a group of vagabonds and shady characters sell some personal effects stolen from a dead man; the dinner table of a poor family, where a husband and wife express relief at the death of an unforgiving man to whom they owed money. When Scrooge sees the Cratchit household in the future, the family struggles to cope with the death of Tiny Tim. When Scrooge asks who the dead man is, the ghost points to a headstone that reads: EBENEZER SCROOGE. Startled by the realization, Scrooge pleads with the ghost to undo the terrible visions, affirming that he will take the lessons to heart and change his ways.
Stave 5	Scrooge awakens on Christmas morning, overjoyed by his new lease of life, and proceeds to buy a huge turkey for the Cratchits, donates money to the poor, and enjoys his time at Fred's party. The next morning, Scrooge gives Cratchit a raise and promises to help the family, eventually becoming a second father to Tiny Tim, who does not die as the vision predicted. True to his word, Scrooge applies the Christmas spirit to every day of his life.

Characters	

1	Ebenezer Scrooge	The protagonist of the story. We follow his narrative arc to redemption.	Cold-hearted, miserly, solitary, covetous, misanthropic.
2	Jacob Marley	The dead business partner of Ebenezer Scrooge. He appears to Scrooge as a ghost and urges Scrooge to change his ways.	Terrifying, spectral. Awful
3	Ghost of Christmas Past	Shows Scrooge scenes from his life from Christmas in the past.	Young and old, light, commanding
4	Ghost of Christmas Present	Shows Scrooge scenes from the current Christmas.	Jolly, welcoming, prophetic
5	Ghost of Christmas Yet to Come	A frightening figure who shows Scrooge scenes from Christmas in the future.	Silent, dark, ominous
6	Bob Cratchit	Scrooge's employee and the father of Tiny Tim. Bob lives with his wife and six children in a four-room house.	Honest, kindly, humble. hard-working
7	Fred	The nephew of Ebenezer Scrooge and the son of Scrooge's sister, Fan.	Benevolent, altruistic. charming
8	Belle	Engaged to Scrooge at one time. She broke off the engagement when she noticed a change in him.	Gentle, kind, loving
9	Fezziwig	When Scrooge was young he worked as Mr. Fizziwig's apprentice.	Jovial, festive, generous

Key Themes		Quotes
The Christmas Spirit	The celebration of Christmas is a central theme of A Christmas Carol. Dickens presents Christmas as a joyful time full of fun, games and feasting. Most importantly, he presents Christmas as a time to enjoy the company of family and friends and show generosity and compassion to others. Christmas is presented as the antithesis of many of the ills of Victorian society.	"the only time… when men and women seem … to open their shut-up hearts freely, and to think of people below them as if they really were fellow-passengers…." "I will honour Christmas in my heart, and try to keep it all the year." "…and it was always said of him, that he knew how to keep Christmas well" "Mr and Mrs Fezziwig took their stations, one on either side of the door, and shaking hands with every person individually as he or she went out, wished him or her a Merry Christmas."
Poverty and Social Responsibility	Dickens shows the reader that if everyone shares some responsibility for the welfare of the poor then all of society benefits.	"I don't make merry myself at Christmas, and I can't afford to make idle people merry." "If they would rather die," said Scrooge, "they had better do it, and decrease the surplus population." "Mankind was my business!"
Family	In A Christmas Carol, Dickens shows that a loving family provides companionship, support and strength, even in difficult times. Dickens presents family as bringing a level of happiness that no amount of money could buy.	"They were not a handsome family; they were not well dressed; their shoes were far from being water-proof; their clothes were scanty;... But they were happy, grateful, pleased with one another, and contented with the time…" "Scrooge was better than his word. He did it all, and infinitely more; and to Tiny Tim, who did not die, he was a second father."
Redemption/ Transformation	The overall story of A Christmas Carol is Scrooge's journey of transformation from a lonely old miser to a kind-hearted and generous man. Dickens shows the reader that regardless of our social situation, we all get to choose whether or not to show kindness to others.	"Oh! But he was a tight-fisted hand at the grindstone, Scrooge! a squeezing, wrenching, grasping, scraping, clutching, covetous old sinner!" "I am not the man I was. I will not be the man I must have been but for this intercourse." "I am as light as a feather, I am as happy as an angel, I am as merry as a school-boy. I am as giddy as a drunken man"

Weekly Spellings:	
1. Destitute: extremely poor, unable to provide for themselves**.**	**11. Jovial:** cheerful and friendly
2. Supernatural: attributed to some force beyond scientific understanding or the laws of nature.	**12. Eager:** strongly wanting to do or have something.
3. Incredulous: unable to believe something	**13. Benevolence:** the quality of being well meaning; kindness
4. Welfare: the health, happiness and fortunes of a person.	**14. Consequence:** a result or effect; usually one that is unwelcome or unpleasant.
5. Redemption: the action of saving or being saved from sin, error, or evil.	**15. Penance:** punishment as an outward expression of repentance for wrongdoing.
6. Congenial: pleasant or agreeable.	**16. Apprehensive:** anxious or fearful that something bad or unpleasant will happen.
7. Solitary: done or existing alone.	**17. Transformation:** a marked change in form, nature, or appearance.
8. Misanthropic: having or showing a dislike of other people; unsociable	**18. Tremendous:** very great in amount, scale, or intensity.
9. **Surplus:** more than what is needed or used; excess.	**19.Reverently:** with deep and solemn respect.
10. Redemption: the action of saving or being saved from sinerror or evil.	**20. Endeavour:** try hard to do or achieve something.

KS4 Term 3		
1	Claw grip	arch thumb and index finger, cut underneath arch
2	Bridge hold	tuck fingers back in a claw, cut in front of knuckle
3	Rubbing in method	fat (butter or baking block is rubbed into flour using fingertips, used for crumble, pastry & biscuits
4	Creaming method	cream butter and sugar together until creamy, used for cake making
5	Roux	equal parts of fat and plain flour used to thicken a liquid by gelatinisation
6	Macronutrients	protein, carbohydrates and fats
7	Micronutrients	vitamins and minerals
8	Eatwell guide	a visual tool showing how much of each food group to eat for a balanced diet
9	Cross contamination	the transfer of harmful bacteria to food from other foods, equipment or people
10	Allergy	when a food substance triggers a damaging immune response in the body
11	Seasonality	the time of year when the harvest or flavour of food is naturally at its peak
12	Food Miles	the distance travelled by food commodities from producer to consumer - farm to fork

GEOGRAPHY: YEAR 11 TOPIC: UK HUMAN LANDSCAPES

UK population		
1	What is population distribution?	The spread or pattern of the population
2	What is population density?	The average number of people in an area, in people per km^2
3	Where are the UK's cores regions?	Cities and towns, especially in London and the South East
4	Where are the UK's peripheral regions?	Rural areas, especially in the northern Scotland and Wales, and the south west of England.
5	What are enterprise zones?	Areas that are given government support to help new and expanding businesses
6	What age groups tend to move to rural regions?	Older, retired people
7	What age groups tend to move to urban regions?	Younger people looking for education or work
8	What are the two causes of population growth?	Natural change and immigration
9	What is net migration?	The difference between numbers of immigrants and emigrants
10	What is a greenfield site	A site that has not been built on before, usually farmland or open space

UK economy		
11	Name three primary sector jobs.	Farming, fishing, mining
12	What is the secondary sector?	Manufacturing jobs, making things such as cars and clothes
13	What are tertiary jobs?	Providing a service e.g. retail, healthcare or office work
14	What is the quaternary sector?	Jobs in research, IT and the media
15	What is globalisation?	The world becoming more interconnected through developments in transport, communications and the internet
16	What is free trade?	Trade without charges or tariffs
17	What is privatisation?	The sale of state-owned industries to the private companies
18	What is FDI?	Foreign Direct Investment – investment in a country from overseas
19	What is gentrification?	Older, poorer areas being changed to become desirable so wealthier people move in
20	What is the CBD?	Central Business District

London		
21	What is good about London's site?	Bridging point for trade, flat land for building, water source
22	What is good about London's situation?	Near sea for trade, near Europe for trade, good transport link to the rest of the UK
23	What is the M25?	The orbital motorway that goes around London
24	What river flows through London?	River Thames
25	What is the Prime Meridian?	The line of zero degrees longitude; world time zones start and end on this line. It goes through Greenwich, in London

GEOGRAPHY: YEAR 10 | TOPIC: FIELDWORK

Data collection		
1	What is primary data?	Collected first hand
2	What is secondary data?	Collected by others
3	Name 3 primary data collected at the coast.	Beach profiles, groyne measurements, EQAs
4	Name 3 secondary data collected about the coast.	Historical maps, Shoreline Management Plan, newspaper articles
5	What is quantitative data?	Measurable data - numbers
6	What is qualitative data?	Descriptive data
7	Name 2 examples of quantitative data.	Pebble lengths, beach angles
8	Name 2 examples of qualitative data.	Sketches, interview quotes
9	What piece of equipment is used to measure angles?	clinometer
10	What is an EQA?	Environmental Quality Analysis

Sampling		
11	What is meant by bias?	A tendency to prefer one thing over another
12	What is random sampling?	Every item/person/place has an equal chance of being selected
13	What is stratified sampling?	A proportionate number of observations is take from each part of the population
14	Give an example of stratified sampling.	Measuring 5 pebbles at each beach visited
15	What is systematic sampling?	Sample taken at regular intervals e.g. every 25m along a path

Data presentation and analysis		
16	Name 3 types of graphs	Bar, line, pie
17	What graph should be used for continuous data?	Line e.g. change over time
18	What graph should be used for discrete data?	Bar e.g. separate categories
19	What is a correlation?	The relationships between two variables
20	What is a positive correlation?	As one variable increases, the other one increases
21	What is a negative correlation?	As one variable increase, the other one decreases
22	What is a choropleth map?	Uses colours to show the distribution of data categories
23	How do you calculate the mean?	Add up all the values and divide by the number of values
24	What is the mode?	The most common value in the data set
25	What is the median?	The central number, when data is ranked

PART 1 Knowledge Quizzing

THE GROWTH OF DEMOCRACY

HISTORY
P1AB GERMANY

1	What is the German word for 'king'?	Kaiser
2	In what year did Kaiser Wilhelm II become the monarch of Germany?	1888
3	What was the Kaiser's first aim for Germany?	To try to control the political system
4	What was the name of the Chancellor who resigned in 1890?	Bismarck
5	What was the Kaiser's second aim for Germany?	Make Germany a world power by building an overseas empire
6	What are trade unions?	Organisations who represent groups of workers and support them to get better wages, conditions etc.
7	What were the main roles of the Chancellor of Germany?	The Chancellor was the most important minister who proposed new laws and answered to the Kaiser
8	What was the Reichstag?	The German parliament - made up of members who were elected every three years They could agree or reject laws and helped decide how money would be spent
9	Why did the Kaiser, Chancellor and government have to cooperate with the Reichstag?	Because the Reichstag could agree or reject laws and helped decide how money would be spent
10	Which political parties grew in popularity during the early 1900s?	Left wing parties - socialists
11	Why was rising socialism a threat to Kaiser Wilhelm II?	It created a divide between the Kaiser and the Reichstag - the right wing wanted things to stay the same, the left wing wanted change.
12	Why did socialism grow in the early 1900s?	The working class was growing because of industrialisation - more people moved to citites to work in factories and wanted the government to improve their working conditions
13	How did the Kaiser respond to rising socialism?	REFORM - Sunday working was banned, children under 13 were not allowed to work REPRESSION - Wilhelm felt threatened by the socialists so he ordered attacks on their offices and imprisoned social democrat leaders
14	What does 'Weltpolitik' mean?	world politics
15	What did the Kaiser need in order to build an overseas empire?	A strong army and navy
16	How many soliders did Germany have by 1913?	800,000
17	What were the Navy Laws?	agreements to increase the size of Germany's navy
18	How many ships did Germany have by 1900?	38
19	What were the consequences of the Navy Laws?	Other nations, such as Russia, France and Britain felt threated and so formed an alliance to protect themselves (Triple Entente) Building ships was very expensive and so government debt and taxes in Germany increased.
20	When was World War I?	1914-1918
21	Why did defeat in WWI surprise the German people?	They thought and were told that they were winning - Russia surrendered in 1917 and the Spring Offensive in the west helped Germany gain 40 miles. However, a counter attack by Britain and France then led Germany to defeat.
22	What happened to Germany's economy during the war?	Factories were producing weapons instead of goods and worked signed up to fight so by 1918, Germany was producing on 60% of what they were in 1913 - Germany was running out of money and supplies.
23	What happened to Germany's workers during the war?	Workers saw their wages decrease whilst factory owners profited - some workers went on strike demanding a democratic government
24	What was the Kiel Mutiny in 1918?	Navy crews refused to follow orders and took over the German naval base - they demanded an end to the war and a democratic government.
25	What happened to food supplies in Germany during the war?	There were major food shortages due to British blockades - some people were living off turnips and bread
26	What happened to the Kaiser Wilhelm II on 9th November 1918?	He abdicated (left) the throne.
27	What replaced the Kaiser?	The Weimar Republic
28	Who was the first German Chancellor in the Weimar Republic?	Fredrich Ebert
29	What did many Germans begin calling the Weimar Republic? Why?	They were called the November Criminals because many felt that they 'stabbed Germany in the back' by calling the Armistice and then signing the Treaty of Versailles.
30	Why didn't Germans expect such a harsh peace treaty?	They thought they had been punished enough by the war, food shortages and losing their monarch.
31	Give two reasons why the German people were very angry with the Treaty of Versailles.	It was a 'diktat' (dictated peace) The terms were seen as very harsh (£6.6billion reparations, War Guilt Clause, military limitations)
32	What was Article 48 of the Weimar Constitution?	Article 48 meant that the President could call a state of emergency and rule without the government and Reichstag for a certain period of time
33	How many different political parties were there in Germany after Wwi?	32 different political parties
34	What was proportional representation?	A voting system where the percentage of votes is reflected in the percentage of seats in the Reichstag
35	Why was proportional representation difficult? (3 reasons)	It meant that it was very difficult for one political party to gain control of the Reichstag (get over 50% of the votes) This meant that often the Weimar government was very divided, decisions took a long time or were never made - leading to chaotic leadership It also meant that often extremist parties ended up with some seats in the Reichstag
36	What is a coalition government?	A government made up of a number of political parties because no one political party has the majority of seats.

PART 1 Knowledge Quizzing

THE GROWTH OF DEMOCRACY

HISTORY
P1AB GERMANY

37	Who attempted to overthrow the Government in 1919? What was the uprising called?	The communists - the Spartacist Uprising
38	What happened in the Spartacist Uprising?	Workers were already protested in 1919 so the Spartacists tried to use this to create a revolution. They took over government headquarters and newspaper offices in Berlin.
39	Why did the Spartacist Uprising fail? (3 reasons)	The Freikorps (ex soldiers) were used to stop the uprising. Over 100 workers were killed. The uprising was badly planned and did not gain enough support. The leaders were captured and killed.
40	Who attempted to overthrow the Government in 1920? What was the uprising called?	The right wing / Freikorps - The Kapp Putsch
41	Why did the Kapp Putsch happen?	The Weimar Government said it wanted to reduce the army and get rid of the Freikorps
42	What happened in the Kapp Putsch?	12,000 Freikorps marched on Berlin The government was forced to flee
43	Why did the Kapp Putsch fail?	It did not gain popular support Strikes and protests made it impossible for the Freikorps to rule After 4 days, Kapp fled and the Weimar government returned
44	Who attempted to overthrow the Government in 1923? What was the uprising called?	Hitler, Ludendorff and the Nazis - The Munich Putsch
45	Why did the Munich Putsch happen?	The Nazis believed that there should be one autocratic leader in Germany - they thought that democracy led to weak government.
46	Why did Hitler think he could succeed in the Munich Putsch?	By 1923, the Nazis had 55,000 members and were popular in certain states (Bavaria) Kahr (the prime minster of Bavaria) was right-wing and believed to be ready to also rebel against the Weimar government - so Hitler believed he would support the Putsch
47	What happened in the Munich Putsch?	Hitler and the Nazis burst into a meeting led by Kahr and said they were starting a revolution Hitler forced Kahr and other leading politicians to support him Kahr actually did not support the Putsch 2000 armed Nazis tried to storm the military base in Munich anyway They were stopped by the German army 16 Nazis were killed and Hitler was shot in the army The Putsch failed
48	What happened AFTER the Munich Putsch?	Hitler was sent to prison - supposed to be for 5 years but he served 9 months Hitler gained huge publicity during the trial Hitler wrote Mein Kampf in prison Hitler realised that he would need to take power by legal means
49	What did Germany miss in 1922?	A reparations payment
50	In 1923, what did France do in response to Germany missing their reparations payment?	Invaded the Ruhr
51	What did French and Belgian troops do when they invaded the Ruhr?	Seized control of mines, factories and railways and took supplies.
52	How did the Weimar Republic respond to the invasion of the Ruhr?	They told German workers to strike (stop working and protest)
53	What did the invasion of the Ruhr and workers strikes lead to?	Hyperinflation (where money loses its value)
54	How much did an egg cost in Germany by November 1923?	80 million marks
55	How were workers affected by hyperinflation?	They could not afford food and there were major food shortages which led to starvation
56	How were farmers affected by hyperinflation?	They did not want to sell their produce for worthless money which led to food shortages
57	How were pensions affected by hyperinflation?	Their pensions could not pay for enough food
58	How were the middle class affected by hyperinflation?	Their savings became worthless
59	Who gained from hyperinflation? How?	The upper classes often invested in property so they were not affected as badly Businessmen and people in debt could pay off their loans Prices increased more than wages so some businesses made big profits
60	How was the Weimar Republic affected politically by hyperinflation?	They were seriously weakened - the people were angry and blamed the government as Germany was in chaos Hyperinflation was partially their fault - so some people who had tried to initially support Weimar turned against them
61	Who was Gustav Stresemann?	German Foreign Minister 1923-1929
62	What did Stresemann do to solve hyperinflation?	He created a new German currency called the Rentenmark - this changed to the Reichsmark in 1924 He persuaded the French to leave the Ruhr
63	Why wasn't Stresemann's solution to hyperinflation popular with everyone?	The German people never forgot hyperinflation and people who lost their savings weren't compensated Asking the French to leave the Ruhr was seen as weak by right-wing extremists
64	What was the Dawes Plan? How did it help Germany?	It meant Germany had longer to pay their reparations Germany borrowed money from the USA to help rebuild - schools, hospitals, roads
65	What was good about the Dawes Plan?	Pensions and wages rose Exports increased and Germany was the second strongest industrial power by 1928
66	Why was the Dawes Plan criticised by some Germans?	Some Germans felt they shouldn't be paying any more reparations at all The German economy was really dependent on the USA Wages did not rise for everyone (e.g. farmers) Rich people had to pay more tax
67	What was the Young Plan? How did it help Germany?	It lowered the amount Germany had to pay to £2billion (which would still mean they would be paying until 1988!)
68	How did Stresemann improve relationships with other countries?	The Locarno Pact 1925 (promising not to invade each other) Joining the League of Nations in 1926 The Kellogg-Briand Pact (promising to settle disputes peacefully - signed by 64 countries)
69	Why is Stresemann often considered to be a very successful Foreign Minister?	He was awarded the Nobel Peace Prize There were no uprisings between 1924 and 1928 Support for extremist groups dropped (Nazis got 3% of votes in 1928)
70	When were the 'Golden Years' of Weimar?	1924 - 1928
71	What new style of architecture was introduced in the Golden Years?	Bauhaus
72	How did women benefit from the Golden Years?	They could smoke, cut their hair short, go out with a chaperone and VOTE
73	Why were freedoms for women still limited?	They often didn't vote or voted in the same way as their husbands
74	What impact did artists like Otto Dix have on German art?	He created art that had political messages and highlighted the inequality between rich and poor
75	How did theatre change during the Golden Years of Weimar?	There were more shows that aimed to show the lives of ordinary people (such as the Threepenny Orchestra by Brecht)
76	Why was 1928-28 a Golden Age for German cinema?	German films were very technically advanced and actresses like Marlene Dietrich became very popular
77	How did music change during the Golden Years of Weimar?	Going to clubs became popular - 600 dance bands in Berlin Censorship restrictions were removed There was more freedom and experimentation Berlin became famous for its clubs
78	Who didn't approve of the Golden Age of Weimar? Why not?	Some Germans disapproved as they wanted to keep to traditional German values They thought that the Weimar culture was disgusting and that Germany was in moral decline The Church did not like the decline in morals

PART 2 Knowledge Quizzing
GERMANY AND THE DEPRESSION

79	In what year was the Wall Street Crash?	1929
80	What did the Wall Street Crash lead to?	The Great Depression
81	What were TWO economic consequence of the Depression? (BE SPECIFIC!)	Businesses closed down/went bankrupt - 50,000 German firms closed between 1929 and 1932 Farmers struggled - 18,000 farmers bankrupt Unemployment increased - 6 million unemployed by 1932 Wages decreased - wages fell by 30% in 1932
82	What were TWO social consequences of the Depression? (BE SPECIFIC!)	Crime increased - many of the unemployed/homeless were under 25 Homelessness increased Street violence increased The welfare system could not cope - unemployment benefit was cut by 60%
83	What was ONE political consequence of the Depression? (BE SPECIFIC!)	People who had been optimistic during Weimar's Golden Years were now reminded of hyperinflation and the issues of the early 1920s - the mood towards the government turned to anger and despair People began to look towards alternative, more extreme politics e.g. communism, Nazism
84	Why was the Weimar Government so unpopular during the Depression?	The coalition government was made up of a number of political parties who couldn't agree on how to tackle the Depression - leading to confusion and chaos - making Weimar look weak and ineffective
85	How did the Depression help raise the popularity of the Nazi Party?	As unemployment incresed, so did support for extremists as people looked for alternatives to the Weimar Republic who promised jobs and better wages.
86	Why did fear of communism increase between 1930 and 1932? Who was particularly worried? Why?	The Communist Party gained popularity and people worried that communism might take over Germany German business owners and farmers were particularly worried that communism would mean they would lose their livelihood and so they began to vote for the Nazis who promised to stop communism
87	What was Mein Kampf?	The book Hitler wrote in prison detailing his ideology
88	What were TWO of the key ideas that Hitler wrote about in Mein Kampf?	Having one strong leader (no democracy) Aryans were the Master Race Defeat Communism Ignore the Treaty of Versailles Rebuild the army Unite all German speaking people under one Reich
89	Why did Hitler's beliefs and ideas appeal to people?	His ideas matched what many German people already believed and wanted (e.g. defeat communism, ignore the Treaty of Versailles) He reminded them of a better time when they had one leader (the Kaiser)
90	Hitler was very charismatic. What does this mean?	He was able to charm his audience and make people believe that he could save Germany
91	How did Hitler's speeches increase his appeal?	He was a very powerful and inspiring public speaker. He seemed able to identify with the people and give them hope.
92	What was the SS?	Hitler's personal bodyguard
93	Who was in charge of the SS?	Heinrich Himmler
	What was the SA?	The SA (storm troopers) were the Nazi's own private army - often known as the brownshirts.
	Who was in charge of the SA?	Ernst Rohm
96	Who was in the SA?	Former soldiers and the unemployed
97	How did the SA increase the appeal of the Nazis? (at least TWO reasons)	They brought discipline in a time of chaos - they were well organised and looked capable of bringing order back to Germany They helped the Nazis campaign and distributed propaganda leaflets They were violent and intimidated opposition - even disrupting meetings of other political parties People thought that the SA could protect Germany from communism
98	How did the Nazis campaign to increase their support?	They distributed propaganda leaflets They trained speakers (over 6000) to spread their ideology They made links with rich businessmen to help fund their campaigns
99	What were some of the Nazis key policies? (at least THREE)	Solve Germany's economic problems Increase prices paid for crops Support families Provide strong leadership Make Germany great again
100	Why were Nazis policies often vague and flexible?	They wanted to appeal to as many people as possible so they made sure that their promises appealed to a wide variety of groups (farmers, housewives, factory workers, businessmen)
101	What were the Nuremburg Rallies?	Huge organised gatherings of people (over 100,000) where Hitler spoke and the SA marched The Nazi flag was everywhere at the rallies
102	Who was Josef Goebbels?	The Nazi Minister of Culture (propaganda)
103	What is propaganda?	information (especially of a biased or misleading nature) used to promote a particular political cause or point of view.
104	What kinds of propaganda did Hitler use to increase his appeal and support?	Posters, speeches, leaflets
105	What were TWO of the key messages in Nazi propangda?	Hitler is a saviour Hitler provides hope for the future The Nazis are strong and organised The Nazis can protect Germany from communism The Nazis will help the unemployed and families
106	Why was Nazi propaganda effective? Why did it increase Nazi appeal?	Posters were everywhere and always ensured that they had a really strong message Poster appealed to a huge variety of people in society (from housewives to businessmen)

PART 2 Knowledge Quizzing
GERMANY AND THE DEPRESSION

107	How many seats did the Nazis have in the Weimar government in 1928?	12
108	By 1930, the Nazis were the _____ biggest political party in the Reichstag.	second
109	By 1932, the Nazis were the _____ political party in the Reichstag.	largest
110	What % of seats did the Nazis have by July 1932?	37%
111	How many seats did the Nazis have in the Weimar government in July 1932?	230
112	How were laws being passed in Germany by 1932?	The President was using Article 48 (emergency powers) to pass laws
113	What was opposition to the Nazis like by 1932?	Opposition was weak and divided (the communists and the socialists hated each other so would not work together against the Nazis) Opposition underestimated how much of a threat the Nazis actually were
114	Who was Bruning?	German Chancellor 1930 - May 1932 - unpopular as he reduced benefits for the unemployed
115	Who was von Hindenburg?	President of Germany 1925 - Aug 1934
116	Who was von Papen?	German Chancellor May - Nov 1932 - encouraged Hindenburg to appoint Hitler (as he thought they could control him)
117	Who was von Schleicher?	German Chancellor Dec - Jan 1932
118	What secret deal did von Papen and Hitler make?	That they would get rid of von Schleicher and form a new government with Hitler as Chancellor and von Papen as vice Chancellor
119	On what date did Hitler become Chancellor of Germany?	Jan-33
120	How did Hitler become Chancellor of Germany in January 1933?	Papen persuaded Hindenburg to make Hitler Chancellor (they thought they could control him)
121	What does 'Fuhrer' mean?	Ultimate and total leader of Germany
122	Even though Hitler is Chancellor in Jan 1933, why is he still weak?	He could be removed by political opponents, Hindeburg, the army or voted out by the people
123	When was the Reichstag Fire?	27th February 1933
124	Who was blamed for the Reichstag Fire?	A dutch communist called Marinus Van Der Lubbe
125	What was the immediate reaction to the Reichstag Fire?	Goebbels used it to spread anti-communist propaganda and arrest 4000 communist leaders
126	How did the Reichstag Fire help the Nazis? What did it lead to?	Hitler persuaded Hindenburg to use Article 48 to place Germany into a state of emergency - no freedom of speech or newspapers, the government could arrest without charge, property could be searched without permission, opponents could be arrested and imprisoned
127	What happened in the 5th March elections after the Reichstag Fire?	The Nazis used the fire to gain more support - they gained 44% of the vote – as a coalition with the National Party, they were could now essentially control the Reichstag.
128	When was the Enabling Act?	24th March
129	What was the Enabling Act?	A law that would allow Hitler to pass laws without going through the Reichstag for four years
130	How many votes did the Enabling Act get?	444 votes to 94
131	What did the Nazis do to trade unions in May 1933?	They took over trade union offices and arrested leaders All trade unions were merged into one Nazi trade union - the DAF (German Labour Front)
132	What did the Nazis do to all other political parties in July 1933?	Banned them
133	When was the Night of the Long Knives?	29th June 1934
134	What was the Night of the Long Knives?	the Nazis eliminated the SA (his own army!)
135	Why did the Night of the Long Knives happen? (at least TWO reasons)	The SA were becoming too powerful (3 million members!) Other leading Nazis didn't like how powerful Rohm was The army hated the SA and Hitler needed the army's full support Rohm wanted a social revolution to bring equality The SA were most working men - Hitler didn't want to appeal too much to them and then turn rich businessmen away from the Nazis
136	What were the consequences of the Night of the Long Knives? (at least TWO)	Hitler gained the army's support Hitler's actions were popular - many Germans felt he had restored order The SS grew in power The rest of Germany saw how ruthless Hitler was - it sent a powerful message Hitler grew in confidence as noone opposed the NOTLK
137	What happened to Hindeburg in August 1934? Why was this significant?	He died so Hitler became Fuhrer of Germany and commander in chief of the German army

PART 3 Knowledge Quizzing
LIVING IN NAZI GERMANY

138	Who was Hermann Goering?	Nazi Minister in charge of Germany economy and leader of the Four Year Plan
139	What were the two key aims of the Four Year Plan?	Rearmament – producing the weapons the German army would need to win a war. Self-sufficiency – to make sure Germany did not have to rely on imports from other countries and rely on their own resources.
140	What was one POSITIVE impact of the Four Year Plan?	1. The main priority was war; as a result military production increased and this created jobs. 2. Very high targets were set and achieved in industries like steel and explosives production. 3. Scientists found ways to make petrol from coal, artificial wool and cotton from pulped wood, make-up from flour and coffee from acorns. This meant they did not to trade with other countries.
141	What was one NEGATIVE impact of the Four Year Plan?	Targets were missed in key industries like oil production and raw materials were still needed by 1937.
142	What was RAD (The National Labour Service)?	A national programme to get men into work and reduce unemployment
143	How long did all men between 18-25 have to spend in the National Labour Service?	From 1935, it was compulsory for all men aged 18-25 to spend six months in the RAD.
144	Give TWO specific key facts about the work that was done in the National Labour Service	In 1939, 6 months compulsory labour was also extended to women. They were employed to dig drainage ditches on farms, plant trees and mend hedges. Works included building Autobahns (motorways) and public buildings such as the 1936 Olympic Stadium, and to work as groundskeepers. They lived in camps and wore uniforms. They were provided with free meals and low wages.
145	How did public works programmes (such as Autobahns) improve employment?	New motorways (autobahns) built to link Germany's towns/cities, as well as the construction of new schools, hospitals and other public buildings. 2000 miles of new motorways were built. 100,000 people were employed on the scheme. Helped create more jobs and improved facilities. The Nazis' spending on job creation schemes rose by nearly 20 billion marks during the 1930s.
146	How much money did the Nazis spend on employment schemes in the 1930s?	Nazi spending on job creation schemes rose by nearly 20 billion marks during the 1930s.
147	How much government spending went on rearmament after 1936?	From 1936, over 60% of government spending went on rearmament.
148	What is conscription? Who had to join?	Forcing men to join the army All men between 18-25 were forced to join
149	How many million soldiers were in the German army by 1938?	1.4 million (increased from 100,000 men under the Treaty of Versailles)
150	Who was taken off the unemployment register by the Nazis?	Women Jewish people Young people on RAD schemes Conscripted men
151	How did big business owners and huge factories benefit from Nazi economic policy?	The Nazis destroyed the power of trade unions, which meant they could keep wages low and increase working hours without workers protesting. Huge factories also benefitted from rearmament – Daimler-Benz made aeroplanes and production rose over 800%.
152	Why did small business owners lose out from Nazi economic policy?	They had to compete against larger firms so over 300,000 small businesses went bankrupt.
153	Give one POSITIVE impact that Nazi economic policy had on farmers	Positive EARLY in the regime Farmers had any existing debts cancelled and food prices went up. Between 1933 and 1936 farmers' incomes increased by 41%.
154	Give one NEGATIVE impact that Nazi economic policy had on farmers	Negative LATER in the regime After 1936 food prices were strictly controlled and there was a shortage of workers as they were needed in factories. There was also little investment in farm machinery as the priority was developing technology for the army.
155	What was the DAF?	The German Labour Front - Nazi run 'trade union' for all German workers
156	By 1939, how many male workers were 'officially' unemployed?	25,000 out of a workforce of 25 million
157	Give one POSITIVE impact that Nazi economic policy had on ordinary workers	1. By 1936 the average wage was ten times more than the unemployment pay received during the Depression. 2. the DAF created 'Strength Through Joy' which offered cheap holidays, sports and concerts. 3. There were 20 million members of the DAF by 1939 and they organised training courses for over 2.5 million workers 4. The DAF organised low cost food and new toilet facilities in workplaces 5. Beauty of Labour improved working conditions
158	Give one NEGATIVE impact that Nazi economic policy had on ordinary workers	1. All other trade unions were abolished so workers had very few rights 2. If workers did not do what they were told, they could be sent to labour camps 3. Some skilled men ended up in low skilled labour jobs 4. If you were not a member of the DAF, it was hard to find work
159	What does 'police state' mean?	a country where the authorities (police, army, secret police) are used to create fear and terror so that the government has total control.
160	Who was Heinrich Himmler?	1929 - Head of SS 1936 - Head of Police (including the Gestapo)
161	What was the Gestapo? What did they do?	The Nazi secret police force
162	What did the Gestapo do?	They spied on people they thought might be a threat. They had the power to arrest people without trial, torture them and imprison them in concentration camps. They targeted 'undesirables' - first political opponents and then Jews and other minorities
163	Why did German people believe that the Gestapo were everywhere?	They wore plain clothes so were difficult to identify. They relied heavily on informants who would pass on information to them and report people who they believed were 'anti-Nazi' which made it feel like they had a great deal of knowledge / information.
164	How many Gestapo were there in reality?	15,000 (for a population of 60 million people)

PART 3 Knowledge Quizzing
LIVING IN NAZI GERMANY

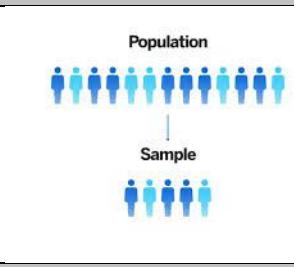
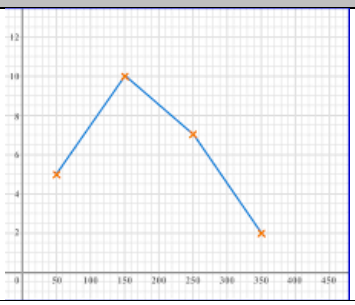
165	What was the SS?	Blackshirts - originally Hitler's personal bodyguard but gradually became the most feared organisation in Nazi Germany They were Aryan, strong, all and totally loyal to Hitler.
166	How many SS were there by 1939?	250,000
167	What were concentration camps?	Enormous prisons for anyone the Nazis deemed to be 'undesirable' Began with political opponents and then Jews and minorities
168	What were conditions like in concentration camps?	Brutal - hard labour every day, people could be held for any length of time, many died from malnutrition and disease
169	What were block leaders? What did they do?	Local control - each area of a town had a block leader who visited every home each week. They collected donations to the Nazi Party and checked up on residents. Block leaders wrote reports on residents which were shared with the Nazis – this report could affect whether a person got a job and an signs of disobedience were noted – even not being enthusiastic enough about Hitler's achievements.
170	How did the Nazis change the police and law courts?	Crimes by Nazis were ignored The police became a network of informers. Law courts and judges were all under Nazsi control Laws with a punishment of the death penalty increased from 3 to 46
171	What is propaganda?	means used to spread information and ideas to influence people and their views.
172	What is indoctrination?	when you strongly convince someone to believe in certain ideologies (like brainwashing)
173	Give two key messages that the Nazis wanted to spread though propaganda	Hitler is a saviour Anti-Semitism Hatred for the Treaty of Versailles Ideal Aryan race - strength of Aryans Weaknesses of 'undesirables'
174	Who was Josef Goebbels?	Minister of Enlightenment and Culture (propaganda)
175	What is censorship?	Tightly controlling (and removing) information - to ensure German people only heard, saw or read what the Nazis wanted them to.
176	How/why were Nazi rallies used for propaganda?	Used to present an image of order and control. They were used to give a dramatic impression of overwhelming power/unity. The rallies gave people a sense of belonging to a powerful movement that was achieving great things. They were attended by hundreds of thousands of people so were a great platform to spread Nazi propaganda
177	How / why were newspapers used for propaganda?	Newspapers were all Nazi owned All news stories were checked and censored Newspapers were encouraged to print negative stories about opponents and Jews
178	How / why were radios used for propaganda?	All radio stations were placed under Nazi control. Cheap radios were made on a huge scale and by 1939, about 70% of German families owned one of these radios. They were also installed in cafes, factories, schools and offices. Loudspeakers were also placed in the streets so the Nazi message was heard by as many people as possible, and as much as possible. Listening to foreign radio stations was banned
179	How / why was film used for propaganda?	Cinema was very popular so Goebbels produced films that showed Hitler as a hero / Jews as the enemy
180	What happened to some books/art/music in Nazi Germany?	They were destroyed or banned as they carried unwanted messages 20,000 books were burned 5,000 painting were burned
181	What books/art/music was approved of by the Nazis?	Anything that promoted Hitler/the Aryan race/the military Anything that was traditional - German folk music
182	How / why was architecture used for propaganda?	Hitler believed he could influence people's lives by ensuring buildings were designed in a 'monumental style' to show Nazi power. Homes were designed in a traditional style – from stone and wood, with shutters and pitched roofs.
183	Why were the 1936 Berlin Olympics important propaganda for the Nazis?	Hitler and Goebbels used this as an opportunity to show the strength, pride and power of Germany under the Nazis. Outward signs of Jewish persecution were all removed for the event.
184	What does Anti-Semitism mean?	Hostility, prejudice or hatred towards Jewish people.
185	What does persecution mean?	Hostility, prejudice, hatred and poor treatment due to your religion, race, political beliefs
186	What is an Aryan?	Commonly used by the Nazis to refer to white, strong members of Germany.
187	What does it mean when you dehumanise someone?	to take away the positive qualities that humans are entitled to.
188	What is a scapegoat?	a person who is blamed for the mistakes or faults of others, especially for reasons of convenience.
189	What does Herrenvolk mean?	"Master race" – The idea of being ruled by the 'best' people in society.
190	What does Untermenschen mean?	"Racial inferiority" – When someone is lesser than you due to their race.
191	What does Lebensunwertes mean?	"Life unworthy of life" – The belief that some people are not good enough to deserve to live.

PART 3 Knowledge Quizzing
LIVING IN NAZI GERMANY

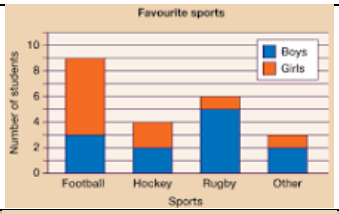
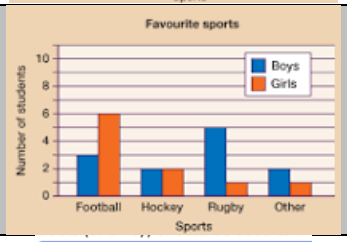
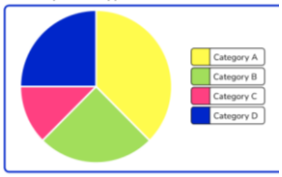
192	What was Kristallnacht?	Night of Broken Glass, 12th November 1938.
193	Give one way that Jewish people were persecuted in 1933.	Increased anti-Semitic propaganda Jewish people were banned from government jobs, inheriting land and serving in the army All Jewish civil servants and teachers were sacked The Nazis encouraged people to boycott Jewish businesses
194	What jobs were Jewish people not allowed to have after 1934?	Doctors or lawyers
195	What were the Nuremburg Laws?	Laws that were introduced from 1935 onwards to progressively dehumanise Jewish people
196	When and what was the Reich Law on Citizenship?	1935 - Jews are no longer German citizens
197	When and what was the Reich Law for the Protection of German Blood and Honour?	1935 - marriage between Jewish people and non-Jewish people was banned
198	What did the Nazis do to help identify Jewish people from 1938 onwards?	Wear the Star of David 'J' stamped in their passport Had to carry an identity card Had to change their middle name to Sarah or Israel
199	What happened on Kristallnacht?	Gangs smashed and burned Jewish property and attacked Jews. 814 shops, 171 homes and 191 synagogues were destroyed. Goebbels said Jews had 'brought it on themselves'. Jews were fined one billion marks to pay for the damages. 20,000 Jews were then sent to concentration camps
200	What was the Einsatzgruppen?	Murder groups - rounded up Jewish people and shot them
201	What was the Final Solution?	Plan made at the Wannsee Conference in 1942 to mass exterminate all Jewish people using gas
202	What was Auschwitz?	One of six death camps created by the Nazis for the Final Solution
203	What is the mass genocide in Germany between 1933 and 1945 known as?	The Holocaust
204	Approximately how many Jewish people were killed during the Holocaust?	Over 6 million
205	How were political opponents persecuted?	They were the first group to be systematically arrested and sent to concentration camps, from July 1933.
206	How were homosexuals persecuted?	Many gay men were arrested – 8,000 arrests had occurred by 1938. Many were sent to concentration camps. The Nazis encouraged voluntary castration.
207	How were disabled people persecuted?	The Law for the Prevention of Hereditary Diseased Offspring of 1933 began compulsory sterilisation of certain groups; mental illness, learning disabilities, deafness and epilepsy. By 1939, 400,000 people had been sterilised. The T4 Programme euthanised babies and children with severe mental and physical disabilities.
208	Give one reason why more people didn't resist the Nazis	1. Many Germans admired and trusted Hitler and were prepared to tolerate the police state in return for jobs, foreign policy success and anti-Communism. 2. Fear - people feared losing their jobs, businesses etc. if they opposed. 3. Many Germans contributed to the Final Solution (e.g. train drivers) 4. Propaganda and censorship meant that some Germans didn't know the full extent of persecution
209	What was the Third Reich / 1000 Year Reich?	The idea that Nazi Germany would be the 3rd great kingdom and would last for 1000 years
210	What did the Nazis want boys to become?	Strong, loyal, obedient, brave soldiers
211	What did the Nazis want girls to become?	Strong, fertile, loyal and obedient wives and mothers
212	What did the Nazis do to school teachers?	Any teachers who refused to teach what the Nazis wanted were sacked 20% of teachers were sacked in 1933
213	What was the Teacher League?	Created in 1929 to provide training for all teachers on Nazi ideology By 1937, 97% of teachers were members
214	What were classrooms like in Nazi Germany?	Pupils greeted their teachers with a Nazi salute Classrooms were covered in photographs of Hitler and swastika flags
215	Give one way that the Nazis changed the school curriculum	Huge increase in PE lessons - three doubles per week Girls taught homemaking Boxing was compulsory for boys History lessons taight about the unfair ToV, the rise of Nazis and the evil of Jews and communists Biology lessons taught about the master race and how other races were inferior Maths lessons - pupils were given sums that put across key Nazi ideas (e.g. how much money a disabled person costs the state)
216	What was the Hitler Youth?	An after school youth programme for German boys and girls
217	How many members were in the Hitler Youth by 1933?	55,000
218	What percentage of young people were members of the Hitler Youth by 1939?	80%
219	Give two things that boys would do in the Hitler Youth	Physical activities - running, cycling, hiking, jumping Listening to Nazi ideology Learning military skills - how to use a gun, tactics etc. Camping
220	Give two things that girls would do in the Hitler Youth	Cooking, sewing, walking and hiking, camping
221	Why was the Hitler Youth a powerful propaganda tool for the Nazis?	Young people are easily influenced and indoctrinated Young people often spent more time with Nazis than they did with their own parents - membership was compulsory A minority of young people even exposed their own parents to the Nazis
222	Why did some members of the Hitler Youth have a POSITIVE viewpoint of it?	Poorer children enjoyed the opportunities (e.g. camping/holidays) Some enjoyed all of the sports and activities offered Some enjoyed the sense of friendship and community Children who were promoted to leaders tended to enjoy it
223	Why did some members of the Hitler Youth have a NEGATIVE viewpoint of it?	Many children felt estranged from their parets as they were more loyal to the Nazis than their own family Some young people's enthusiasm decreased over time - started well but became too linked to war and was too cruel/strict Some young people refused to join at all and set up alternative groups (e.g. Edelweiss Pirates)

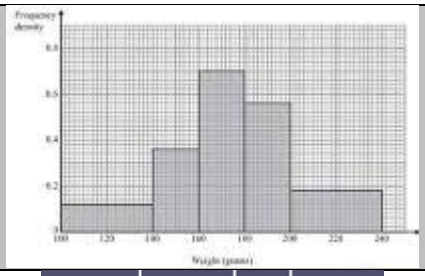
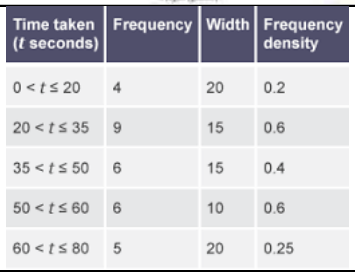
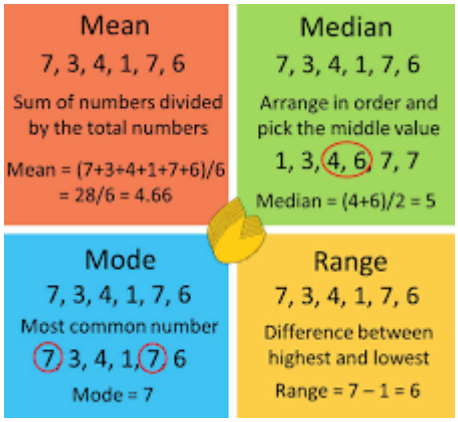
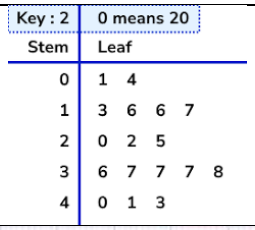
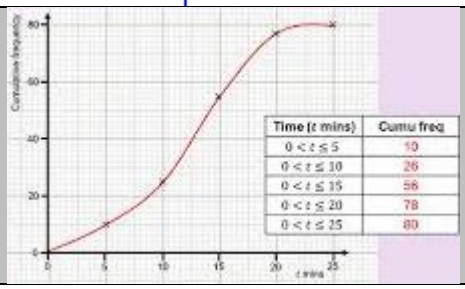
PART 3 Knowledge Quizzing
LIVING IN NAZI GERMANY

224	What did the Nazis want women to do in Germany?	Stay at home and raise children
225	What was Kinder, Kirche and Kuche	Children, Church and Cooking - what a woman should focus on in Nazi Germany
226	What was the Law for the Encouragement of Marriage?	loaned young couples money to marry and set up home Loan did not have to be paid back if you then had 4 or more children
227	What was the Motherhood Cross?	A reward for German women for having children – women were awarded a gold medal for 8+ children
228	What was the Lebensborn Programme?	unmarried mothers could go to a hostel and have children impregnated by SS officers. Aryan women were told they had a duty to produce racially pure children to create a new generation of Aryan Germans.
229	What did the Nazis want a 'typical' German woman to be?	Traditional wife and mother Produce healthy, strong Aryan children Wear skirts, no smoking, no dyed hair
230	Why did the role of a woman change from 1939?	There was a labour shortage so many went back to work to contribute to the war effort
231	Give one economic impact for women in Nazi Germany	Many women lost their careers that they had worked hard for Many female doctors, teachers, lawyers and judges were sacked. Women in work were persuaded or pressured by propaganda and monetary incentives to quit There were no women employed in the legal system by 1936.
232	Give one social impact for women in Nazi Germany	Women were expected to emulate traditional German peasant fashions: plain clothing and traditional long dresses or skirts, hair in buns or plaits and flat shoes. Trousers or high heels were discouraged. In many cities, women were banned from smoking because it was considered 'unladylike'. Slimming was discouraged as it might make it harder to get pregnant.
233	Give one political impact for women in Nazi Germany.	No female members of the Reichstag were allowed. Women played no role in decision making. The number of women allowed to go to university was restricted to 10% and employers were encourage to employ men in favour of women.
234	Give one positive impact of the Nazis policies towards women - which women benefitted?	the number of women employed actually rose by 2.4 million. As the German economy grew, more women were needed in the workplace. The birth rate increased from around 970,000 babies a year in 1933 to 1,413,000 in 1939 infant mortality fell between 1933-1936
235	Give one negative impact of Nazi policies towards women - which women did NOT benefit?	Thousands of women were prevented from starting a career. When Germany started the Second World War, many of the policies towards women had to be reversed as there was a desperate shortage of labour and they needed women to work. From 1939, unmarried women under 25 had to do a period of compulsory agricultural labour. Thousands of women were needed to work in the factories for the war effort. They had to take on the joint roles of mother and main wage earner.
236	Why didn't Hitler close/ban all churches in Nazi Germany?	the churches because they had huge support from the German people. Many Germans had strong Christian beliefs and regularly attended church - Hitler could not afford to alienate a large number of Christians
237	What was the Concordat with the Catholic Church?	An agreement that stated that if the Church did not interfere in politics, the Church would be independent – free from Nazi control
238	What happened to the Concordat over time?	Hitler broke it - Catholic priests were intimidated and arrested if they criticised Nazi policies
239	What was the Reich Church?	An attempt by the Nazis to join together all Protestant churches under their control
240	Who led the Reich Church?	A committed Nazi called Bishop Ludwig Muller
241	What was the Confessional Church?	An anti-Nazi church set up to challenge Nazi church involvement
242	Why didn't the Church speak out more against the Nazis?	Most opposition came from individuals rather than collectively as a whole
243	Who was Bishop von Galen? What did he do?	Catholic Bishop - moderately successful opposition to the Nazis Criticised Nazi race policies in his sermons He was so popular that the Nazis didn't dare remove him In 1941, his speeches against the T4 euthanasia policy stopped the policy from going ahead
244	Who was Dietrich Bonhoffer? What did he do?	Opposed Nazis - said Nazism was anti-Christian Believed that true religion involved standing up to evil government He chose to stay in Germany when he could've escaped to Britain He was arrested and executed in 1945
245	Who was Martin Niemoller?	WWI hero Openly critixised the Nazis and set up the Confessional Church (non-Nazi Church) Arrested and sent to a concentration camp in 1937
246	Give one way that Jewish people resisted the Nazis.	1. Some fought against Nazi rule, escaped and ran away and formed resistance groups who blew up railway lines used by the Germans - they were rare and brutally hunted by the Nazis 2. Warsaw Ghetto Uprising - Jews resisted for 43 days before Nazis regained control - whole ghetto was set on fire 3. Occasional rebellions in death camps - e.g. 150 prisoners escaped and 15 guards killed in Treblinka in 1943.
247	Who were the White Rose? What did they do to resist the Nazis?	student group set up by brother and sister Hans and Sophie Scholl and their Professor Kurt Huber at Munich University in 1941 They issued 6 leaflets trying to make people aware of horrific Nazi acts and gain support. They left these leaflets anonymously in public places, on doorsteps and in mailboxes. They painted anti-Nazi messages on buildings during the night.
248	What happened to the White Rose in 1943?	They were arrested by the Gestapo and they were tortured and hanged. Sophie Scholl had her leg broken during Gestapo interrogation and she had to limp to the scaffold.
249	Who were the Edelweiss Pirates? How did they resist the Nazis?	Groups of young people who resisted joining the Hitler Youth They would beat up Hitler Youth patrols During WWII, they distributed anti-Nazi propaganda
250	What happened to 12 Edelweiss Pirates in 1944?	They were publicly hanged by the Gestapo
251	What was the July Bomb Plot in 1944?	A plan to assassinate Hitler by some of his own military leaders The plot failed and the leaders were executed
252	How were German lives affected by rationing during WWII?	Shortages of coal Water rationed to 2 days per week German diets became very simple - bread, potatoes, one egg per week
253	How were German lives affected by area bombing during WWII?	German city Lubeck destroyed 3.6 million homes destroyed 7.5 million people made homeless 500,000 German civilians killed Despite all of this, it didn't lead to organised resistance against the Nazis
254	How were German lives affected in terms of homelessness/refugees during WWII?	Millions were made homeless Some walked hundreds of miles to try to reach safety (over 500,000 died on the journey West) 8 million slave labourers by the end of the war 11 million ethnic Germans were refugees by the end of the war
255	How were German lives affected in terms of employment during WWII?	Albert Speer began organising for total war in 1942 Everything that didn't contribute to war stopped (e.g. clothes shops) Women entered the workforce in large numbers - in factories and medicine

Maths: Year 10	Unit 11: Collecting, Representing, & Interpreting Data		Term: Summer Half Term 1
64	**Population**	The group of all people/things in a group	
65	**Sample**	A selection taken from a larger group	
66	**Representative**	Proportionate to the population	
67	**Biased**	All possible outcomes are not equally likely	
68	**Proportion**	A comparison of parts to the whole	
69	**Stratified**	A sampling method that divides a population into smaller subgroups	
70	**Primary data**	Data you collect yourself	
71	**Frequency Polygon**	A graph that shows the frequencies of grouped data	
72	**Two-way Table**	A way to organise data from two, distinct categories	

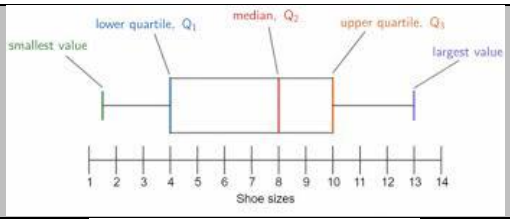
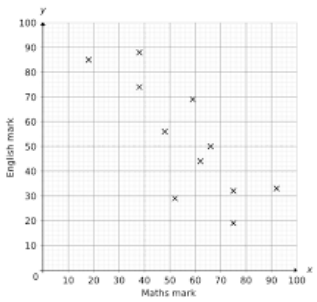
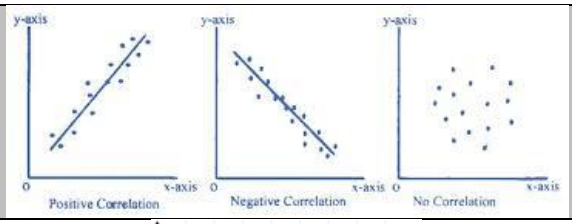
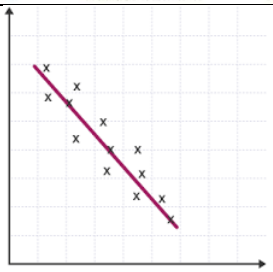
	Baseball	Basketball	Football
Male	13	15	20
Female	23	16	13
Total	36	31	33

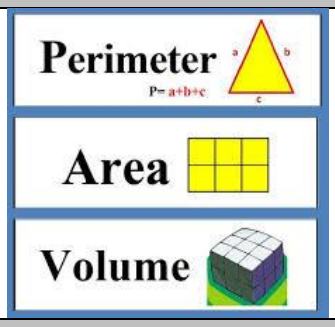
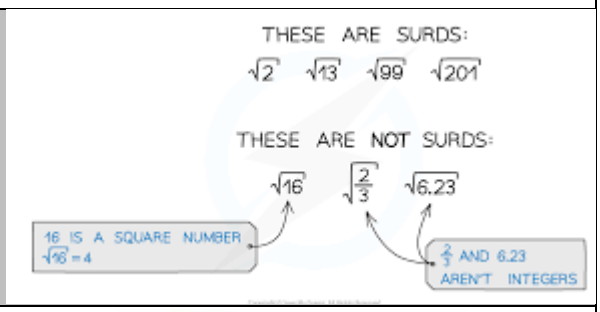
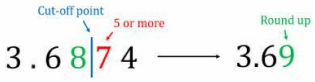
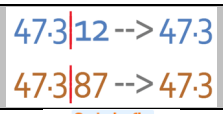
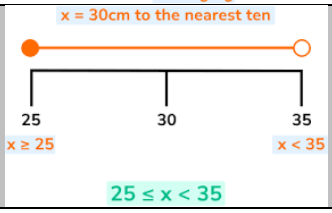
73	**Composite Bar Chart**	A bar chart where each bar is broken into parts to show the makeup of the whole	
74	**Comparative Bar Chart**	A bar chart that has bars next to each other to compare different groups	
75	**Pie chart**	A circle divided into parts to show relative sizes of data	

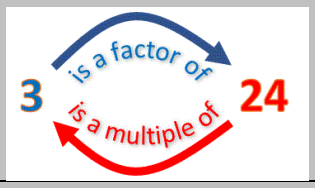
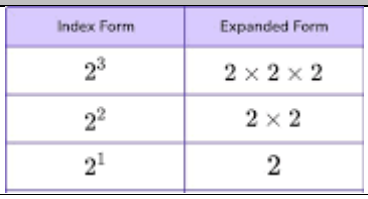
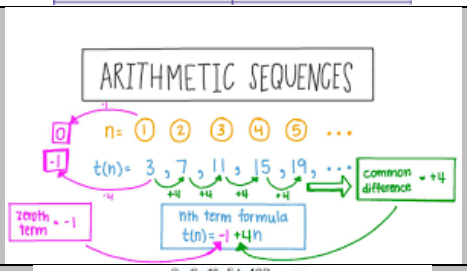
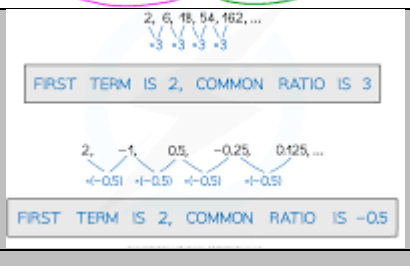
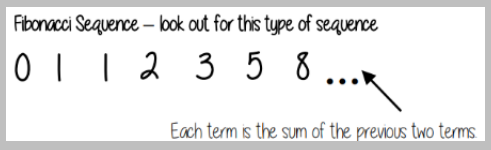
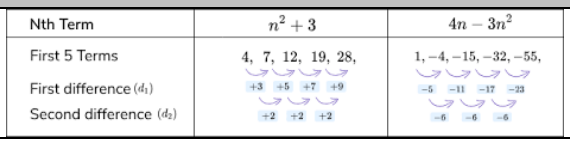
76	**Histogram**	A diagram that uses bars to show frequency density	
77	**Class Width**	The range of each group on the x-axis of a histogram	
78	**Frequency Density**	Frequency divided by class width	
79	**Mean**	The total frequency divided by the total quantity	
80	**Median**	The middle number in an ordered list	
81	**Mode**	The item which appears most often in a set of data	
82	**Range**	The difference between the largest and smallest values	
83	**Stem-and-Leaf Diagram**	A method of organizing data based on place value	
84	**Cumulative Frequency**	The running total of the frequencies	
85	**Lower Quartile**	The median of the lower 50% of the data	
86	**Upper Quartile**	The median of the upper 50% of the data	
87	**Interquartile Range**	The difference between the upper quartile and the lower quartile	

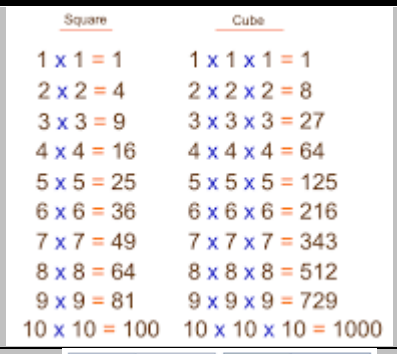
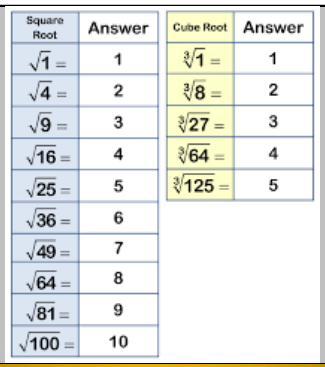
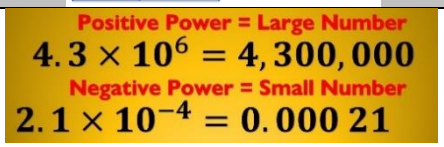
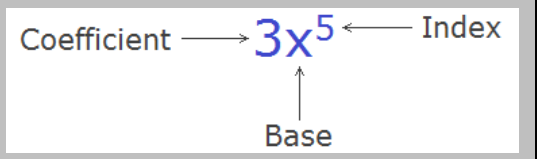
Time taken (t seconds)	Frequency	Width	Frequency density
$0 < t \leq 20$	4	20	0.2
$20 < t \leq 35$	9	15	0.6
$35 < t \leq 50$	6	15	0.4
$50 < t \leq 60$	6	10	0.6
$60 < t \leq 80$	5	20	0.25

Key : 2	0 means 20
Stem	Leaf
0	1 4
1	3 6 6 7
2	0 2 5
3	6 7 7 7 8
4	0 1 3

88	**Box Plot**	A graph summarizing 5 key points of data; minimum value, lower quartile, median, upper quartile, and maximum value	
89	**Scatter Graph**	A diagram used to represent two sets of data	
90	**Correlation**	The connection between two sets of data on a scatter graph	
91	**Line of Best Fit**	A straight line that roughly goes through the middle of all the points on a scatter graph	

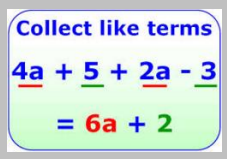
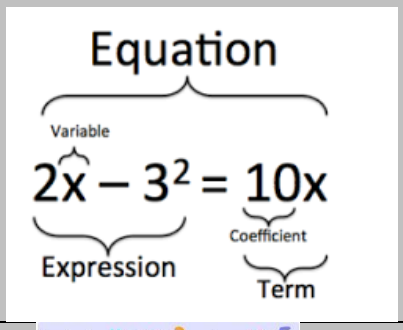
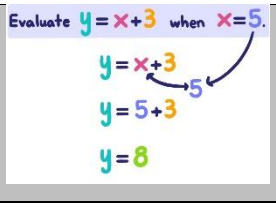
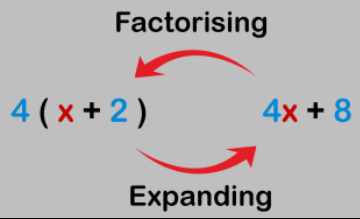
Maths: Year 10		Unit 12: Non-Calculator Methods	Term: Summer Half Term 1
92	**Profit/Loss**	The amount of money earned or lost after expenses	
93	**Perimeter**	The distance around a 2D shape	
94	**Area**	The space inside a 2D shape	
95	**Volume**	The space inside a 3D shape	
96	**Exact Answer**	An answer that has not been rounded; usually as a fraction, surd, and/or in terms of π	
97	**Integer**	A whole number with no fractional or decimal parts; includes positives, negatives, and zero	
98	**Surd**	Integers left in square root form that cannot be simplified	
99	**Rounding**	Simplifying a number without changing its value too much	
100	**Truncate**	Simplifying a number by cutting it off at a certain point without rounding	
101	**Significant Figures**	Digits required to keep the number's value the same; started by counting the first non-zero digit	
102	**Error Interval**	The range of numbers a value could have been before rounding	
103	**Lower Bound**	The first number in an error interval that would round up to the value	
104	**Upper Bound**	The first number in an error interval that would round up to the next value	

Maths: Year 10		Unit 13: Types of Number and Sequences	Term: Summer Half Term 2
105	**Factor**	A number that divides into another number exactly	
106	**Multiple**	A number in the timestable of another, smaller number	
107	**Highest Common Factor (HCF)**	The largest factor that goes into two or more terms	
108	**Lowest Common Multiple (LCM)**	The smallest number that two or more numbers can divide into exactly	
109	**Prime**	A number with exactly two factors	
110	**Index Form**	A simplified way of writing a product using powers	
111	**Arithmetic Sequence**	A list of numbers that increases or decreases by the same amount each term; also known as a linear sequence	
112	**Common Difference**	The difference between each term in an arithmetic sequence	
113	**Geometric Sequence**	A list of numbers that is multipled by the same amount from one term to the next	
114	**Common Ratio**	The ratio between two terms of a geometric sequence that always simplifies to be the same	
115	**Fibonacci Sequence**	Next term is sum of previous two terms	
116	**Quadratic Sequence**	A sequence where the first difference is not the same, but the second difference is the same	

Maths: Year 10		Unit 14: Indices & Roots	Term: Summer Half Term 2
115	**Square Numbers**	The answer to a number multiplied by itself twice	
116	**Cube Numbers**	The answer to a number multiplied by itself three times	
117	**Roots**	The numbers that are multiplied by themselves to produce square/cube numbers	
118	**Standard Form**	A way to write very large or very small numbers using a number between 1 and 10 (not including 10) and a power of 10	
119	**Coefficient**	The number in front of a variable	
120	**Base**	The large number with a small number floating next to it	
121	**Index/Indices**	The small, floating number after a number or variable	
122	**Powers**	The whole expression with a base and an index	

Square Root	Answer
$\sqrt{1}=$	1
$\sqrt{4}=$	2
$\sqrt{9}=$	3
$\sqrt{16}=$	4
$\sqrt{25}=$	5
$\sqrt{36}=$	6
$\sqrt{49}=$	7
$\sqrt{64}=$	8
$\sqrt{81}=$	9
$\sqrt{100}=$	10

Cube Root	Answer
$\sqrt[3]{1}=$	1
$\sqrt[3]{8}=$	2
$\sqrt[3]{27}=$	3
$\sqrt[3]{64}=$	4
$\sqrt[3]{125}=$	5

Maths: Year 10		Unit 15: Manipulating Expressions	Term: Summer Half Term 2
123	**Term**	A number and/or letter combination	
124	**Simplify**	Combining like terms through addition and/or subtraction	
125	**Expression**	A mathematical statement written using symbols, numbers or letters	
126	**Equation**	A statement showing that two expressions are equal	
127	**Variable**	A symbol for an unknown number	
128	**Coefficient**	The number in front of a variable	
129	**Substitute**	Replace a variable with a numerical value	
130	**Solve**	Find the value(s) of a variable that make an equation true	
131	**Expand**	Multiplying every term outside the bracket by everything inside the bracket	
132	**Factorise**	Dividing a common factor from terms to put brackets back into the expression	
133	**Sum**	The result of adding together	
134	**Difference**	The result of subtracting one number from another	
135	**Product**	The answer when you multiply two or more numbers together	
136	**Quotient**	The answer when one number is divided by another	

Components of Fitness

Health Related **Components of Fitness**		
1	**Cardiovascular Fitness**	Ability to exercise your whole body for long periods of time, without tiring.
2	**Muscular Strength**	The amount of force a muscle can exert against a resistance.
3	**Muscular Endurance**	The ability to use voluntary muscles repeatedly, without tiring.
4	**Flexibility**	The range of motion of your joints or the ability of your joints to move freely.
5	**Body Composition**	The percentage of body weight that is muscle, fat or bone

Skill Related **Components of Fitness**		
6	**Agility**	The ability to control the movement of the whole body and change position quickly.
7	**Balance**	Keeping the body stable while at rest or in motion.
8	**Coordination**	The ability to use two or more body parts together.
9	**Power**	The ability to undertake strength performances quickly.

Fitness Testing

Skill Related **Components of Fitness**		
10	**Reaction Time**	The time between the presentation of a stimulus and the onset of movement.
11	**Speed**	The rate at which an individual can perform a movement or cover a distance.

Fitness Testing		
1	**12 Minute Coopers Run**	Test Cardiovascular Fitness.
2	**Harvard Step Test**	Tests Cardiovascular Fitness and good Muscular Endurance in the legs is needed.
3	**Hand Grip Strength Test**	Tests muscular strength in the hands using a grip dynamometer.
4	**1 Minute Press Up Test**	Test Muscular Endurance
5	**1 Minute Sit Up Test**	Test Abdominal Muscular Endurance
6	**30m Sprint Test**	Tests a person's speed
7	**Sargent Jump Test**	Tests leg power using a vertical jump
8	**Sit and Reach Test**	Measures the flexibility of the hamstrings and lower back

Methods of Training

Methods of Training		
1	**Continuous**	Working at a moderate, steady pace for a minimum of 15 minutes or more.
2	**Fartlek**	A type of continuous training where there is a change in pace or intensity and varied terrains.
3	**Circuit**	A series of exercises performed one after the other with a rest in between. A circuit is 6-10 exercises.
4	**Interval**	Training that involves set periods of work followed by set periods of rest.
5	**Plyometrics**	Skipping, jumping bounding and hoping, where the muscles lengthen and then quickly shorten
6	**Weight/Resistance**	Training where a performer has to mange an additional weight or resistance.

Principles of Training		
6	**Specificity**	Matching the training to the needs of the sport or position.
7	**Progressive Overload**	Gradually increasing the overload or intensity, to increase fitness without risk of injury.
8	**Reversibility**	The loss of training adaptations due to a reduction in training levels.

Fitness Testing

Principle of Training		
9	**Thresholds of Training**	To improve aerobic and anaerobic fitness you must train at the correct intensity. **- Anaerobic Zone: 80-90% of Maximum HR** **- Aerobic Zone: 60-80% of Maximum HR**
10	**Overtraining**	A decrease in performance due to insufficient rest and recovery from training sessions.
11	**Individual needs**	Matching the training to the requirements of the individual.
12	**FITT:** - **Frequency** - **Intensity** - **Time** - **Type**	**Frequency** – How often you Train **Intensity** – How hard you Train **Time** – How long you Train for **Type** – What exercises or training methods you use.

Health and Fitness		
1	**Health**	A state of complete emotional, physical, social and metal well-being.
2	**Exercise**	Physical activity that maintains or improves health and fitness.
3	**Fitness**	Ability to meet the demands of the environment.
4	**Performance**	How well a task is done

Health and Performance		
1	**Health**	A state of complete emotional, physical and social wellbeing and not merely the absence of disease and infirmity.
2	**Exercise**	A form of physical exercise to improve health or fitness or both'
3	**Performance**	How well a task is completed.
4	**Fitness**	The ability to meet the demands of the environment.
5	**Serotonin**	A chemical found in the body which controls your mood.
6	**Sedentary Lifestyle**	Where there is little, irregular or no physical activity
7	**Well-Being**	The state of being happy comfortable or healthy
8	**Social health**	The ability to interact with others, adapt to social situations and from relationships
9	**Longevity**	How long a person lives
10	**Depression**	A persistent feeling of sadness and loss of interest in life
11	**Dehydration**	The loss of water and salts essential for normal body function
12	**Hydrate**	Take on Water
13	**Overweight**	Having more weight than is considered healthy by medical professionals
14	**Metabolic rate**	The rate at which metabolic processes take place, the rate at which a body uses up energy
15	**Passive Smoking**	Breathing on the smoke from other peoples cigarettes
16	**Bronchitis**	Inflammation of the lining of the Bronchial tubes
17	**Adrenaline**	A hormone that increase rates of blood circulation and breathing.
18	**Sedative**	A drug that has a calming or sleep-inducing effect
19	**Osteoporosis**	A condition causing the bones to become brittle and fragile from the loss of tissue, resulting from hormone changes, or a deficiency in calcium or vitamin D

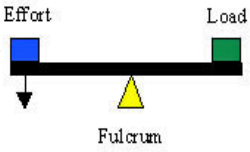
Lever Systems

1	**Lever**	Is a bone and is shown as a straight line
2	**Fulcrum**	Is a pivot or joint and is shown as a triangle F
3	**Effort**	Is a force provided by muscles and is shown by an arrow E
4	**Load**	Is the weight of the body/object being moved, it is shown as a square L
5	**1st Class Lever**	The fulcrum is in between the effort and the load
6	**2nd Class Lever**	The load is in between the fulcrum and the effort
7	**3rd Class Lever**	The effort is in between the fulcrum and the load

Mechanical advantages and disadvantages

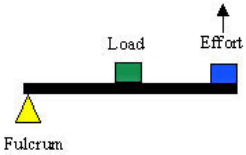
Lever	Advantage	Disadvantage
2nd class	Provides force to lift heavy loads	Small range of movement and cannot move a load quickly
This is due to the load being closer to the fulcrum than the effort		
3rd class	Provides speed and a wide range of movement	A greater force is needed to move the load
This is due to the effort closer to the fulcrum than the load		

1st Class Lever



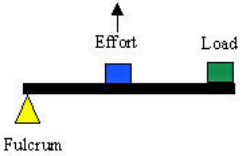
Header a ball (Atlas)

2nd Class Lever



Planter Flexion (Ankle)

3rd Class Lever



Bicep Curl (Flexion at Elbow)

Planes and Axis

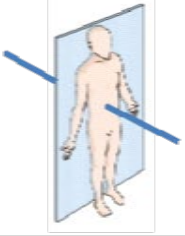
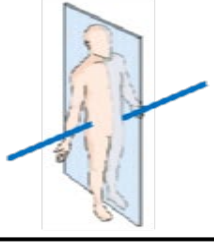
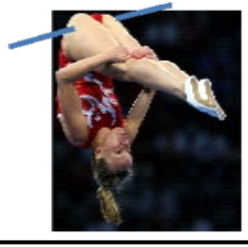
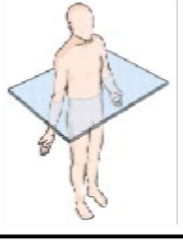
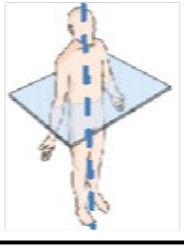
1	**Plane**	A plane is an imaginary line that movement direction occurs in
2	**Axis**	An axis is a line about which the body or body part can turn

Planes

Name	Frontal	Sagittal	Transverse
Definition	Splits the body into front and back halves	Splits the body into left and right halves	Splits the body into top and bottom halves
Movement	Side to side	Forwards & Backwards	Turning

Axis

Name	Sagittal Axis	Frontal Axis	Vertical Axis
Definition	Front to back of body	Side to side	Top to bottom
Movement	Cartwheel Adduction/ Abduction	Somersault	Rotate and Twist

Plane of movement	Axes of movement	Sporting example
		
Frontal plane Separates the front and the back of the body	**Sagittal axis** Goes from the front to the back of the body	**Cartwheel** The only movements are abduction and adduction
		
Sagittal plane Separates the left and the right side of the body	**Frontal axis** Does from one side to the other side of the body	**Somersault** The only movements are flexion and extension
		
Transverse plane Separates the top and the bottom of the body	**Vertical axis** Goes from the top of the body to the bottom of the body	**Full twist (diving)** The only movements are rotating and twisting

Health & Fitness

Exercise improves fitness, an increase in fitness will improve performance. Exercise improves health		
1	**Fitness**	The ability to meet the demands of the environment.
2	**Health**	A state of complete emotional, physical and social wellbeing and not merely the absence of disease and infirmity
3	**Exercise**	A form of activity done to maintain and improve health or physical fitness. It is not competitive sport
4	**Performance**	How well a task is performed
5	**Fitness Testing**	Completed at the start of a Personal Exercise Programme to measure strengths and weaknesses. Used to plan and set targets and monitor during and at the end of the programme to establish fitness levels.
6	**PARQ**	Physical Activity Readiness Questionnaire to identify health issues that may prevent a person taking part in physical activity.

Warm Up

1	**Phase 1: Pulse Raiser**	Raise heart rate and speed up oxygen delivery to muscles, increasing temperature to reduce the risk of injury.
2	**Phase 2: Stretching**	Increase elasticity and range of movement, increasing flexibility. Static and then dynamic stretches.
3	**Phase 3: Skill Related**	Physically and mentally prepare for the activity. E.g., drills

Cool Down

5	**Phase 1: Light Exercise**	Removal of lactic acid and carbon dioxide. Bringing the breathing rate and heart rate back to resting.
6	**Phase 2: Stretching**	Improves flexibility. Static for 8-10 seconds.

Aerobic & Anaerobic

1	**Aerobic Exercise**	Uses oxygen for moderate, long distance exercise (Marathon)
2	**Aerobic Equation**	**Glucose + O_2 → CO_2 + H_2O + Heat + Energy**
3	**Anaerobic Exercise**	Does not use oxygen for short, high intensity exercise (Sprint)
4	**Anaerobic Equation**	**Glucose → lactic Acid + Energy**

Short Term Effects of Exercise

1	**Short Term Effects of Exercise**	To meet the increased demands to the exercise undertaken
2	**Muscular System**	Muscle Fatigue. Anaerobic exercise leads to lactic acid accumulation, creating an oxygen deficit.
3	**Cardiovascular System**	• Increase in heart rate • Increase stroke volume • Increase blood pressure • Increase cardiac output • Vascular shunting occurs
4	**Respiratory System**	• Increase depth of breathing • Increase rate of breathing • Increase gas exchange • Increase in tidal volume • Oxygen deficit

Long Term Effects of Exercise

1	**Skeletal System**	Increased bone density & stronger ligaments and tendons
2	**Muscular System: Aerobic Adaptations**	• Hypertrophy of the slow twitch muscle fibres • increased myoglobin content • increased size of mitochondria
3	**Muscular System: Aerobic Adaptations**	• Hypertrophy of the fast twitch muscle fibres • increased strength • increased tolerance to lactic acid
4	**Respiratory System**	• Increased number of alveoli • Increased strength of intercostal muscles • Increased strength of the diaphragm • Increased tidal volume & vital capacity
5	**Cardiovascular System**	• Increased elasticity of the muscular wall of veins and arteries • Reduced resting blood pressure • Increase size and strength of the heart (cardiac hypertrophy) • Increase in resting stroke volume • Lower resting heart rate • Increase in maximum cardiac output • Increased capillarisation • Increased number of red blood cells • Faster recovery rate.

Term 3 Addiction

Clinical characteristics Symptoms and diagnosis of addiction	Theories of addiction Nature (e.g. genes) and nurture (e.g. peer influences))		Therapies for addiction Treating addiction with a reductionist approach (aversion therapy) or a more holistic approach (12-step recovery programme)	
Griffiths suggests that 'salience' is important - the addiction becomes the most important thing **Dependence versus addiction** **Dependence: psychological reliance/stop withdrawal symptoms** **Addiction: dependence plus the 'buzz' or sense of escape (mood modification)** **Substance misuse versus abuse** **Misuse is not following the 'rules' whereas abuse is using the substance to 'get high' (experience the buzz) or sense of escape.** **The difference is in the person's intentions.** **Diagnosing addiction** **ICD-10 states that an addiction diagnosis is made only if three or more characteristics are present together during the previous year.**	Biological explanation Hereditary factors Genetic information has a moderate to strong effect on addiction Genetic vulnerability Multiple genes increase risk of addiction (nature) Stressors in the environment act as a trigger (nurture) Kaij's study KET STUDY Aim: to see if alcohol addiction is due to nature (hereditary factors) or nurture (using twins) Method: male twins registered with temperance board for alcohol problems were interviewed as well as their relatives Results: 61% of identical (MZ twins) and 39% of nonidentical (DZ) twins both alcoholic Twins with social problems were overrepresented Conclusion: alcohol abuse related to genetic vulnerability Not 100% genetic or MZ twins would be all the same Not 100% environmental or MZ and DZ twins would be the same	Psychological explanation Peer influence Peers are people who are equal in terms of e.g. age or education Social learning theory We learn through observing others and imitating rewarded behaviours We identify with peers and therefore are more likely to imitate them Social norms We look to others to know what is 'normal' or acceptable, which creates social norms, social norms may be overestimated Social identity theory We identify with and want to be accepted by our social groups, this creates pressure to conform to the social norms of the group Creating opportunities for addictive behaviour Peers provide opportunities for addictive behaviour e.g. smoking, peers provide direct instruction	Aversion therapy Based on classical conditioning – association between addiction and unpleasant experience is learned Treating alcoholism – Antabuse (drug) causes nausea / vomiting Just before the vomiting the alcoholic has several alcoholic drinks Neutral stimulus (alcohol) associated with unconditioned response (vomiting) which then becomes a conditioned response to seeing alcohol Treating gambling Phrases on cards about gambling or non-gambling behaviour Electric shock (unconditioned stimulus) given for any gambling-related phrase (neutral stimulus) Association of gambling behaviours with pain Treating smoking Rapid smoking in a closed room causes nausea which is then associated with smoking	Self-management programmes 12-Step recovery programmes – individuals organise therapy without professional guidance AA is an example Higher power Key element is giving control to higher power and letting go Admitting and sharing guilt Members of group and higher power listen to confession to accept the sinner Lifelong process Recovery is never complete The group offers support in case of relapse Self-help groups Peer sharing and support, may avoid religious element and include local traditions

	Term 3 Addiction			
Clinical characteristics **Symptoms and diagnosis of addiction**	Theories of addiction Nature (e.g. genes) and nurture (e.g. peer influences))		Therapies for addiction Treating addiction with a reductionist approach (aversion therapy) or a more holistic approach (12-step recovery programme)	
Diagnosing addiction **ICD-10 states that an addiction diagnosis is made only if three or more characteristics are present together during the previous year.** **Clinical characteristics from ICD-10** **1. strong desire to use the substance** **2. persisting despite knowing harm** **3. difficulty controlling use** **4. higher priority given to substance** **5. withdrawal symptoms if activity stopped 6. evidence of tolerance i.e. needing more to achieve same effect**	Biological explanation Evaluation Flawed study: temperance board data only includes drinkers who made a public display of their alcohol abuse, so the results lack validity Supported by later studies: Kendler found MZ twins are more likely to both be alcoholics than DZ twins showing genes affect alcoholism Misunderstanding genetic vulnerability: inheriting certain genes does not make addiction inevitable as life events also play a role	Psychological explanation Evaluation Supporting research: Simons-Morton and Farhat reviews 40 studies and found a positive correlation between peers and smoking It may be peer selection: the direction of influence may be different; peers may actively select others who are like them rather than conforming to the social norm of the group Real-world application: Tobler et al created peerpressure resistance training to help prevent young people from smoking	Evaluation Treatment adherence issues – many addicts drop out before treatment is completed so it is difficult to assess treatment's effectiveness Poor long-term effectiveness – McConaghy et al found nine years later that aversion therapy was no more effective than a placebo A holistic approach: aversion therapy gets rid of the immediate urge to use the addictive substance and CBT can provide longer-lasting support	Evaluation Lack of clear evidence – unclear evidence on effectiveness because doesn't include people who leave without success Individual differences – dropout rates are high as programme is demanding and requires motivation Holistic – focuses on whole person with social support to cope with emotions

Year 10 : Brain and Neuro Psychology

Key terms

Key Term	Definition
ANS	Autonomic nervous system – it is 'automatic' as the system operates involuntarily. It has 2 main divisions: the sympathetic and the parasympathetic nervous system.
CNS	Is made up of the brain and spinal cord. Where all complex commands and decisions are made.
Nervous system	Consists of the central nervous system and the peripheral nervous system.
PNS	Peripheral nervous system transmits info about voluntary activity, communicating between the CNS and the rest of the body. Coordinates some reflex responses.
SNS	Somatic nervous system – transmits info from sense organs to the CNS. Receives info from the CNS that directs muscles to act.
Fight or flight response	Is the immediate physiological response of an animal when confronted with a threatening or stressful situation. The sympathetic division of the ANS causes the release of adrenaline. This makes the body physiologically aroused and prepares the body to be able to fight the threat or run from it.
The James-Lange theory	Is a theory of emotion which suggests that our experiences of physiological changes comes first, which the brain then interprets as an emotion.
Emotion	A strong feeling or mood that has important motivational properties, it drives an individual to behave in a particular way.
Excitatory	Some neurotransmitters such as adrenaline (also a hormone) generally increase the positive charge of the next neuron, making it more likely to fire.
Inhibitory	Some neurotransmitters, such as serotonin, generally increase the negative charge of the next neuron, making it less likely to fire.
Neurons	Are cells that communicate messages through electrical and chemical signals throughout the nervous system. 3 different types: sensory, relay and motor.
Neurotransmitter	Is a chemical that is released from the synaptic vesicles. These send signals across the synaptic cleft from one neuron to another. Neurotransmitters can cause excitation or inhibition of the net neuron in the chain.
Synaptic transmission	Is the process by which neighbouring neurons communicate with each other. Neurons send chemical messages across the gap (the synaptic cleft) and separates them.
Hebb's theory of learning & neuronal growth	An early theory of 'plasticity' in the brain which suggests that learning causes synaptic connections between groups of neurons to become stronger. The groups of neurons are called cell assemblies, and the neuronal growth that occurs between these will create more efficient learning in the brain.
Cerebellum	The 'little brain' at the base of the brain above the spinal cord that coordinates movement with sensory input (sensorimotor) and also has a role in cognition.
Cerebral cortex	The very thin layer of brain tissue that gives the brain its pinky-grey appearance. Highly folded and complex in humans, which is what separates our brain from that of animals. It is the main centre of the brains conscious awareness.
Localisation	Refers to the theory that different brain areas are responsible for specific functions and behaviours.
Interpretive cortex	Is an area of the temporal lobe of the brain where interpretations of memories are stored, i.e. the emotional component of the memory.
Cognitive neuroscience	How mental processes (such as perception, learning and memory) and brain activity/biological structures of the brain are connected/influence one another.
Neurological damage	Any event, such as illness or injury which can result in neuron damage in the brain may lead to a loss of function or change in behaviour.
CT scan	A computerised tomography scan uses X-rays and a computer to create detailed images of the inside of the body, including the brain. The result is cross-sectional photographs.
Fmri	A functional magnetic resonance imaging scan uses radio waves to measure blood oxygen levels in the brain. Those areas of the brain that are most active will use most oxygen and 3D images of this activity are shown on a computer screen
PET Scan	Positron emission tomography scan is a scan that allows live brain activity to be observed. An injection of the radioactive substance is given to the patient. Those areas of the brain that absorb most glucose are usually represented in red on a computer screen.
Episodic memory	Describes memory for personal events. Includes memories of when the events occurred and of the people, feelings and sequence of what happened.
Semantic memory	Store for our knowledge of the world. Includes facts and our knowledge of what words and concepts mean.

Structure & function of the nervous system

Structure of the NS

The nervous system has 2 jobs:

1. Collect and respond to information in environment
2. Control working of different organs and cells in body, inc. brain. Subdivisions:

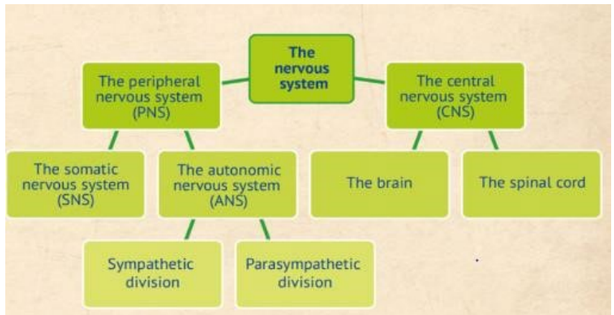
Functions of the NS

CNS – brain & spinal cord. Brain divided into 2 hemispheres; left & right. Right controls left. Left controls right. Centre of conscious awareness, decision making takes place here. Brain stem at the base of the brain: controls many basic functions e.g. sleep & reflexes. Brain stem connects brain to spinal cord. Spinal cord carries messages between brain and rest of body.

PNS – means on the 'outside'. PNS supports actions of CNS. Done through millions of nerve cells called neurons. PNS divided into ANS & SNS.

ANS – is automatic as it acts involuntary. Coordinates vital functions such as breathing, heart rate and digestion. Involved in body's response to stress. Has 2 parts: SYMPATHETIC & PARASYMPATHETIC.

SNS – controls voluntary movements of muscles. Only exception are reflexes that are not under voluntary control. Takes in info from sensory organs.



ANS

ANS control homeostasis: maintains a balanced internal state e.g. body temperature at 37'.

No conscious control because functions are vital to life e.g. heartbeat.

Sympathetic NS – physiological arousal, triggered when stressed and leads to fight or flight.

Parasympathetic NS – opposite to sympathetic; rest and digest.

Flight or fight

Brain detects threat – hypothalamus identifies a threat (stressor).

Sympathetic NS kicks in – fight or flight.

Release of adrenaline: ANS changes from parasympathetic to sympathetic. Adrenaline released into bloodstream.

Fight or flight – Immediate & automatic. Physiological changes due to adrenaline release, e.g increase in HR. Body gets ready to confront (fight) or run (flight.

Once threat has passed – parasympathetic kicks in.

James-Lange Theory of Emotion

Physiological arousal first

Hypothalamus arouses sympathetic NS. Adrenaline released leading to physiological arousal (fight or flight).

Emotion afterwards

Brain interprets physiological arousal. Causes emotion. E.g. fear. **E.G.** Meet bear in forest. Sympathetic arousal: muscles tense, HR increases. Interpret as fear.

No physical changes = no emotion

Speaking in front of class, no increase in HR means you don't experience any sense of fear.

Evaluation:

1. Emotions do come after arousal; e.g. with phobias.
2. Challenged by Cannon-Bard theory – Some emotions occur at the same time as physiological arousal.
3. Extra: James-Lange theory may be too simple. Challenged by 2 factor theory, we need social cues to label emotion (Schachter & Singer).

Name: _____

Religious Studies GCSE

Definitions and Teachings Knowledge Organiser

Thematic Paper

Theme A: Relationships and Families

Religious Teachings

	Topic	Beliefs	Quotation
Teaching 1	Homosexual Relationships	Some Christians will be firmly against same sex relationships. Others will be more tolerant as they believe all people should be loved.	Men who have sex with men will not inherit the kingdom of God. - Bible
Teaching 2	Homosexual Relationships	There are clear teachings in the Qur'an that same sex relationships are wrong. The purpose of a relationship for Muslims is to be married and start a family.	Must you lust after males and abandon the wives that God has created for you? You are exceeding all bounds. - Qur'an
Teaching 3	The purpose of families	The expression of love and commitment within a marriage is like the love Jesus has for his followers.	Husbands, love your wives, just as Christ loved the Church. - Bible
Teaching 4	The purpose of families	Parents have a duty to protect their children and to raise them properly, and children must respect their parents.	Honour your children and protect their manners. - Hadith
Teaching 5	Sex outside marriage	Marriage is a sacred vow and an important commitment made before God, so adultery is wrong.	You shall not commit adultery. - Bible
Teaching 6	Sex outside marriage	Sex should only take place within marriage so adultery is always wrong.	Do not go anywhere near adultery: it is an outrage, and an evil path. - Qur'an
Teaching 7	Contraception	Catholics are against all artificial forms of contraception (see below). Some other Christians may approve of its use as part of a loving relationship.	Every sexual act should have the possibility of creating new life. - teaching of the Roman Catholic Church
Teaching 8	Contraception	The teaching below is used to argue that contraception is allowed to make life easier.	God wishes to lighten your burden; man was created weak. – Qur'an
Teaching 9	Marriage	Marriage is a sacrament in the Catholic Church and is an important commitment which should be for life (see below). Most Christians believe you should be married before starting a family.	For better, for worse, for richer, for poorer, in sickness and in health, to love and to cherish, til death do us part. - Church of England marriage vows
Teaching 10	Marriage	All Muslims should plan to marry and to start a family. They should aim to raise their children as good Muslims.	There is no institution more beloved and dearer to God than marriage. - Hadith
Teaching 11	Divorce and Remarriage	Many Christians will be against divorce and remarriage (see below). However other Christians may now accept this as part of modern life.	Anyone who divorces his wife and marries another women commits adultery against her. - Jesus
Teaching 12	Divorce and Remarriage	Divorce is permitted but it should be the last divorce. There are teachings that divorce displeases Allah.	Divorce is permitted but it should be the last divorce. There are teachings that divorce displeases Allah.
Teaching 13	Gender Equality	There are teachings which suggest that man should rule over women but many Christians would see these as old-fashioned.	To the woman he said "your husband …will rule over you" – Genesis

			God created mankind in his own image, male and female he created them. - Genesis
Teaching 14	Gender Equality	All humans are created equally by God and all will be judged equally. Men and women are equally important, although they may have different roles.	Men and women have the same religious and moral responsibilities, and will be rewarded by God for good deeds - Qur'an

Definitions

D1	Cohabitation	A couple living together without being married/in civil partnership.	D10	Gender prejudice	Negative thoughts, feelings or beliefs about a person or group based on their gender.
D2	Compassion	Sympathy and concern for the suffering of others.	D11	Heterosexuality	Being physically/sexually attracted to persons of the opposite gender.
D3	Contraception	Precautions taken to prevent pregnancy and to protect against contracting or transmitting STIs (sexually transmitted infections).	D12	Homosexuality	Being physically/sexually attracted to persons of the same gender.
D4	Divorce	Legal ending of a marriage.	D13	Nuclear family	Family unit made up of two parents and their child(ren).
D5	Extended family	Family unit comprising two parents and their children, but also grandparents, cousins etc.	D14	Polygamy	The practice of having multiple spouses (wives and/or husbands).
D6	Family planning	Planning when to have a family and how big a family to have by use of birth control practices and/or contraception.	D15	Procreation	Having a child; seen as a duty in many religions.
D7	Gender discrimination	Acting on prejudices against someone because of their gender.	D16	Remarriage	Marriage for the second time, after divorce ending an earlier marriage.
D8	Gender equality	Belief that all genders have equal status and value, so	D17	Vows	Promises made during a marriage ceremony.

		discrimination against any is wrong.			
D9	Gender prejudice	Negative thoughts, feelings or beliefs about a person or group based on their gender.			

Theme B: Religion and Life

Religious Teachings

	Topic	Beliefs	Quotation
Teaching 15	Origins of the Universe	Fundamentalist Christians believe the Genesis creation account is literally true. Liberal Christians believe the creation story is a myth, or symbolic.	"In the beginning God created the heaven and the earth" – Genesis (Bible)
Teaching 16	Origins of the Universe	Muslims believe God made the universe from nothing. Some Muslims believe the account of creation in the Qur'an describes the Big Bang.	"Your Lord is God who created the heavens and earth in six days" – Qur'an
Teaching 17	The Value of the World	The Earth is valuable because God created it. People have a duty to look after God's creation (stewardship). Christians teach that God gave humans power (dominion) over the earth.	"Rule over the fish in the sea and the birds in the sky" – Genesis (Bible)

Teaching 18	The Value of the World	The Earth is valuable because God created it. People have a duty to look after God's creation (stewardship).	"It is He who has made you successors on the earth" – Qur'an
Teaching 19	The use and abuse of the environment	We must protect the earth against misuse. We must show stewardship over creation.	"The Earth is the Lord's and everything in it" -Psalms (Bible)
Teaching 20	The use and abuse of the environment	We must protect the earth against misuse. We must show stewardship over creation.	"Do not seek from it more than what you need" -Hadith
Teaching 21	The use and abuse of animals	Some Christians believe God gave animals to humans to eat. Animal testing that is essential for human needs is OK but animals should be looked after.	The one who eats everything (including meat) must not treat with contempt the one who does not, and the one who does not must not judge the one who does, for God has accepted them" – Romans (Bible)
Teaching 22	The use and abuse of animals	Killing animals for food is allowed. Animal testing that is essential for human needs is OK but animals should be looked after.	"It is God who provides livestock for you, some for riding and some for food" – Qur'an
Teaching 23	The origins of Human Life	Many Christians believe that it is possible to believe in God and evolution. Some are creationists who reject the theory of evolution as not in keeping with scripture.	Genesis chapter 2 teaches that God created the first man, Adam, and breathed life into him.
Teaching 24	The origins of Human Life	Many Muslims believe that it is possible to believe in God and evolution. Some are creationists who reject the theory of evolution as not in keeping with scripture.	"You humans were lifeless and He gave you life" – Qur'an
Teaching 25	Abortion	Taking human life is wrong because of the sanctity of life. Some Christians will argue that abortion is sometimes the most loving option.	"For you created my inmost being; you knit me together in my mother's womb" – Psalms (Bible)
Teaching 26	Abortion	Taking human life is wrong because of the sanctity of life. Abortion is permitted only when the mother's life is in danger.	"Do not kill your children for fear of poverty – We shall provide for them and you" – Qur'an
Teaching 27	Euthanasia	Some Christians believe euthanasia is wrong due to the sanctity of life. Some Christians will argue that it can sometimes be the most loving thing to do.	"Love your neighbour" – Jesus, in Luke (Bible)
Teaching 28	Euthanasia	Muslims believe euthanasia is wrong due to the sanctity of life. Predestination means that God has a person's life planned out and we should not change this.	"No soul may die except with God's permission at a predestined time" – Qur'an
Teaching 29	Death and the afterlife	Death is the beginning of eternal life which will be spent with God. God will judge us on our actions and our faith.	"God so loved the world that He gave His only son, that whoever believes in Him shall have eternal life" – John (Bible)

Teaching 30	Death and the afterlife	Death is the beginning of eternal life which will be spent with God. God will judge us on our actions and whether we accepted the teachings of the Qur'an.	"Those who believe, do good deeds, keep up the prayer…will have their reward with their Lord" – Qur'an

Definitions

D18	Abortion	The deliberate ending of a pregnancy.	D27	Natural resources	Resources which are found in nature – fossil fuels (eg coal, oil, natural gas), plants etc.
D19	Afterlife	Beliefs about what happens to 'us' after our body has died; in many religions this relates to life after death or immortality in some form.	D28	Pollution	Contamination of an environment with harmful substances.
D20	Animal experimentation	The use of animals for medical research and product testing.	D29	Quality of life	The standard of health, comfort and happiness/fulfillment experienced by a person or group.
D21	Awe and Wonder	Sense of wonderment at nature; often linked to the feeling that God is involved/revealed through it.	D30	Responsibility	Having a duty or obligation to act in a certain way.
D22	Big Bang Theory	Scientific theory about the origins of the universe; belief that the universe began almost 14 billion years ago with a reaction of particles from a singularity followed by a process of inflation and expansion.	D31	Sanctity of life	Belief that life is sacred/special because it was created by God, or because we are each unique individuals.
D23	Death	The end of the physical, bodily life.	D32	Scientific	Knowledge based on what can be observed (eg regularities in nature) and experimentation.

D24	Dominion	Belief that humans have been given control/charge of the world.	D33	Stewardship	Duty given by God to humankind to look after the created world, and all life within it.
D25	Environment	The world around us; this can be made up natural or artificial surroundings.	D34	Evolution	Scientific theory of the development of species which involves a process of natural selection and survival of the fittest.
D26	Euthanasia	Assisting with the ending of life for a person who is terminally ill or has degenerative illness; often known as assisted suicide.			

Theme D: Peace and Conflict

Religious Teachings

	Topic	Beliefs	Quotation
Teaching 31	Peace and Conflict	Killing is wrong, but it can sometime be right to fight for your faith or for justice.	"He will judge between the nations. Nation will not take up sword against nation" – Isaiah (Bible)
Teaching 32	Peace and conflict	Killing is wrong, but it can sometime be right to fight for your faith or for justice.	"The servants of the Lord of Mercy are those who walk humbly on the earth, and who, when aggressive people address them, reply with words of peace" – Qur'an
Teaching 34	Violence, protest and terrorism	Protest can be used to achieve justice.	"Do not repay anyone evil for evil" – Romans (Bible) "Turn the other cheek" - Jesus
Teaching 34	Violence, protest and terrorism	Fighting is only allowed in self-defence or to defend the faith against attack.	"Do not kill each other, for God is merciful to you" – Qur'an
Teaching 35	Reasons for War	Retaliation is wrong.	"The love of money is the root of all evil" – 1 Timothy (Bible)

Teaching 36	Reasons for War	Fighting in self-defence is OK and fair retribution can create justice.	"Those who have been attacked are permitted to take up arms because they have been wronged" – Qur'an
Teaching 37	Nuclear War and WMD	Only God has the right to end life. The indiscriminate killing of large numbers of innocent people can never be justified.	"You shall not murder" – One of the 10 Commandments, Exodus (Bible)
Teaching 38	Nuclear War and WMD	God created all life so it should be protected. The indiscriminate killing of large numbers of innocent people can never be justified.	"Do not contribute to your destruction, but do good, for God loves those who do good" – Qur'an
Teaching 39	Just War	Augustine and Aquinas developed the concept of a Just War – one which follows rules of fairness.	"Blessed are the peacemakers" - Jesus
Teaching 40	Just War	Lesser Jihad means that Muslims should fight under certain conditions.	"Know that the evil of war is swift, and its taste bitter" - Hadith
Teaching 41	Holy War	Most Christians now reject "Eye for an eye" in favour of Jesus' teaching love and forgiveness.	"Eye for an eye, tooth for a tooth" – Exodus (Bible) "All who live by the sword dies by the sword" - Jesus
Teaching 42	Holy War	Holy War must follow the rules of lesser jihad.	"Fight in the cause of Allah but do not transgress limits" – Qur'an
Teaching 43	Pacifism	Some Christians are pacifists. The Quakers are a Christian denomination who strongly support pacifism.	"Blessed are the peacemakers" - Jesus
Teaching 44	Pacifism	Islam is a religion of peace and Muslims must accept peace where possible. Islam is not a pacifist religion because of the duty of lesser jihad.	"If they incline towards peace you must also incline towards it, and put your trust in God" – Qur'an
Teaching 45	Victims of War	Victims of war should be loved and cared for. There are a number of Christian charities who do this.	"Love your neighbour" – Jesus The parable of the Good Samaritan teaches that everyone is our neighbour, regardless of race, gender, beliefs, etc.
Teaching 46	Victims of War	Victims of war should be loved and cared for. There are a number of Muslim charities who do this.	"Whoever saved a life, it would be as if they saved the life of all mankind" – Qur'an

Definitions

D35	Conflict	Dispute between sides, can be between individuals, groups or nations.	D44	Peace-making	Working to bring about peace and reconciliation.

D36	Forgiveness	Letting go of blame against a person for wrongs they have done; moving on.	D45	Protest	A statement or action to express disagreement; can be an organised event to demonstrate disagreement with a policy or political action.
D37	Holy War	War that is believed to be sanctioned by God.	D46	Reconciliation	Making up and rebuilding relationships between two groups/sides after disagreement.
D38	Justice	Bringing fairness back to a situation.	D47	Retaliation	To pay someone back for their harmful actions.
D39	Just War	Set of rules for fighting a war in a way believed to be justified and acceptable to God.	D48	Terrorism	Use of violence and threats to intimidate others; used for political purposes to build fear in the ordinary population and to secure demands from Government.
D40	Nuclear deterrence	Having nuclear weapons with the aim of deterring/preventing other states attacking for fear of retaliation and nuclear war (possibly leading to Mutually Assured Destruction).	D49	Victims of war	Those who are harmed during a war, for example those killed, injured or left homeless.
D41	Nuclear weapons/war	A weapon of mass destruction which causes widespread damage and loss of life. Nuclear war would be a war fought using these weapons.	D50	Violence	Behaviour involving physical force which intends to hurt, kill or cause damage.
D42	Pacifism	Belief that all violence is wrong, which then affects all behaviours.	D51	War	Armed conflict between two or more sides.
D43	Peace	The opposite of war; harmony between all in society.	D52	Weapons of Mass Destruction	Weapons which cause widespread, indiscriminate damage (eg nuclear, chemical, biological).

Theme E: Crime and Punishment

Religious Teachings

	Topic	Beliefs	Quotation
Teaching 47	Reasons for crime	Christians believe no one is evil but everybody makes mistakes. We are created good.	"Do not covet anything that belongs to your neighbour" – one of the 10 Commandments, Exodus (Bible)
Teaching 48	Reasons for crime	Muslims believe that no human, except for Muhammad, is perfect and that doing wrong things is failure to resist temptation.	"Competing for more distracts you until you go in your grave" – Qur'an
Teaching 49	Attitudes to criminals	The Ten Commandments forbid theft, murder etc. Murder is wrong because only God should take life.	The Parable of the Sheep and Goats makes clear that helping prisoners is like helping Jesus. "I was in prison and you visited me" – Jesus "You shall not murder" – One of the 10 Commandments, Exodus (Bible)
Teaching 50	Attitudes to criminals	In the UK Muslims support UK law even though it is not shari'ah. Shari'ah punishments are severe for serious crimes that are prohibited in the Qur'an.	"God commands justice…and prohibits injustice" – Qur'an "Do not take life, which God has made sacred" – Qur'an
Teaching 51	Aims of punishment	Most Christians now reject "eye for an eye".	"Eye for an eye, tooth for a tooth" – Exodus (Bible)

		Most Christians would say that reformation is the most important aim.	"Love your neighbour" – Jesus
Teaching 52	Aims of punishment	Retribution is accepted where crimes are against shari'ah. Some shari'ah punishments are carried out in public to deter others.	"Cut off the hands of thieves – a deterrent from God" – Qur'an
Teaching 53	Suffering and persecution	Christians have a duty to help those who are suffering. They recognise that good can sometimes come from persecution.	"We glory in our suffering because it produces perseverance, character and hope" – Romans (Bible)
Teaching 54	Suffering and persecution	Muslims have a duty to help those who are suffering. Allah allows suffering for reasons that we as humans cannot understand.	"You are sure to be tested…If you are steadfast and mindful of God, that is the best course" – Qur'an
Teaching 55	Treatment of criminals	Most Christians believe that prisoners should be treated with love and respect to encourage them to reform. Christians do not support corporal punishment.	"Do not take revenge…leave room for God's wrath. It is mine to avenge; I will repay says the Lord" – Romans (Bible)
Teaching 56	Treatment of criminals	Corporal punishment is used in some Muslims countries. Shari'ah law emphasises retribution and deterrence.	"We prescribed for them a life for a life, and eye for an eye" – Qur'an
Teaching 57	Forgiveness	Christians believe that God is forgiving so will try to forgive.	[when asked how many times we should forgive] "Not seven times, but seventy seven times" - Jesus
Teaching 58	Forgiveness	Only Allah can truly forgive. Showing forgiveness to others is important to create a good world.	"Pardon each other's faults and God will grant you honour" - Hadith
Teaching 59	Death Penalty	God gave life and only God has the right to take life away. Some Christians would argue that the death penalty helps protect society. Others would argue that forgiveness and reformation are more important.	"Eye for an eye, tooth for a tooth" – Exodus (Bible)
Teaching 60	Death Penalty	The death penalty exists in shari'ah law and is seen as an effective deterrence and fair retribution.	"Do not take life which God has made sacred, except by right" – Qur'an

Definitions

D53	Addiction	Being addicted to/dependent on a particular substance; can be a cause of crime (eg stealing money to pay for illegal drugs).	D73	Law	The rules a country demands its citizens follow, the breaking of which leads to punishment.
D54	Community service	Punishment involving the criminal doing a set number of hours of physical labour/work in their local community.	D74	Mental illness	A medical condition that can cause changes to a person's behaviour; can be a cause of crime.

D55	Corporal punishment	Punishment in which physical pain is inflicted on the criminal.	D75	Murder	Unlawfully killing another person.
D56	Crime	Action which breaks the law; can be against the person (eg murder), against property (eg vandalism), or against the state (eg treason).	D76	Poverty	The state of being without the things needed for a reasonable quality of life; can be a cause of crime.
D57	Death penalty	Capital punishment; the execution of a criminal which is sanctioned by the state.	D77	Principle of utility	The concept of acting out of the greater good for the most people. (eg removing a dangerous criminal from society in order to protect others).
D58	Deterrence	Aim of punishment; the threat of punishment as a way to put a person off committing crime (eg knowing they could go to prison if they steal).	D78	Reformation	Aim of punishment; helping the criminal see how and why their behaviour was wrong, so that their mindset changes for the better.
D59	Evil intentions	Having the desire to deliberately cause suffering or harm to another.	D79	Retribution	Aim of punishment; getting the criminal back for their crimes.
D60	Forgiveness	Letting go of blame against a person for wrongs they have done; moving on.	D80	Sanctity of life	Belief that life is sacred/special because it was created by God, or because we are each unique individuals.
D70	Greed	Reason for committing crime – wanting or desiring something or more of something.	D81	Theft	Taking something without the owner's consent.
D71	Hate crime	A crime committed because of prejudice views about a person or group.	D82	Unjust law	A legal requirement within a society that is believed to be unfair; a cause of crime if a person believes they cannot follow (or must act against) a law they believe is unjust.

D71	Prison	Imprisonment is a form of punishment where a criminal is locked in a secure guarded building (prison) for a period of time.	D83	Upbringing	The environment a child lives in, and the instructions they receive, while they are growing up; can be a cause of crime.

B8 Photosynthesis Knowledge organiser

1. State the function of the cell wall.	Strengthens the cell, provide support
2. State the function of the chloroplasts.	Contain chlorophyll, absorb light to do photosynthesis
3. State the function of the permanent vacuole.	Contains cell sap to keep plant cells rigid, provide support
4. State three differences between animal and plant cells.	Plant cells have chloroplasts, permanent vacuole and cellulose cell wall. Animal cells do not
5. What substance makes up plants' cell walls?	Cellulose
6. Name the part of the plant that waterproofs the leaf surface.	Waxy cuticle
7. Name the cells that contains lots of chloroplasts for photosynthesis.	Palisade cells
8. Name the tissue which is where gas exchange takes place in the leaf	Spongy mesophyll layer
9. Which part of the plant allows gases to diffuse in and out of leaves?	Stomata
10. What controls the opening and closing of stomata?	Guard cells
11. Briefly describe the arrangement of xylem and phloem in the stem of a plant.	Organised in bundles, with xylem on the inside and phloem on the outside
12. Which specialised cell in plants make up the tissue for transporting water?	Xylem cells
13. State the function of xylem.	Transports water and mineral ions from roots to other parts of the plants
14. State the function of phloem.	Transports dissolved sugars from leaves to the rest of the plant
15. State a difference in structure between xylem and phloem.	X: dead, hollow tube, has lignin; P: living, has sieve plates, no lignin
16. Name the process of the transport of dissolved sugars in plants.	Translocation
17. Name one use of glucose in plants.	Respiration/Make and strengthen cellulose cell wall/Make starch for storage/Make lipids as energy store
18. What are the reactants for photosynthesis?	Carbon dioxide and water
19. How do the reactants enter the plant?	Carbon dioxide diffuses into the leaf via the stomata, water is absorbed from the soil through the roots by osmosis
20. What are the products of photosynthesis?	Glucose and oxygen
21. How does oxygen leave the plant?	Diffuses through the stomata
22. State the equation of photosynthesis.	$6CO_2 + 6H^2O \rightarrow C_6H_{12}O_6 + 6O_2$
23. Where does photosynthesis occur in the cell?	Chloroplast
24. Is photosynthesis endothermic or exothermic?	Endothermic
25. Name the pigment in chloroplasts and its role in photosynthesis	Chlorophyll, absorbs light
26. How are palisade cells adapted for photosynthesis?	Packed tightly together, near the surface of the leaf. Lots of chloroplasts with chlorophyll to absorb light
27. Briefly explain an adaptation of spongy mesophyll tissue in plants.	Big air spaces and large surface area for efficient gas exchange/diffusion of gases
28. State an adaptation of the leaf for efficient photosynthesis.	Broad leaves/Thin/Have chlorophyll/Air spaces/Guard cells to regulate stomata opening
29. How do stomata help maintain efficient gas exchange in leaves?	Allow gases to move in and out of leaf, maintaining steep concentration gradient
30. Root hair cells have lots of mitochondria to release energy. What is the energy used for?	Active transport of mineral ions into root hair cells

B8 Photosynthesis Knowledge organiser

31. How do the extensions in root hair cells help with their function?	Increase surface area for efficient water absorption
32. Define 'active transport'.	Movement of particles against the concentration gradient (low to high) using energy in the form of ATP
33. How are plant roots adapted for efficient water and mineral absorption?	Large SA (root hairs), transpiration stream
34. Why do plants need nitrate ions?	For production of DNA and to combine with carbon and hydrogen to make proteins. they are required for plant growth
35. Why do plants need magnesium?	To make chlorophyll
36. Why don't root hair cells contain any chloroplasts?	They are underground, no sunlight reaches them so they cannot carry out photosynthesis.
37. Why do plants need water?	For photosynthesis, to transport minerals, maintain structural rigidity and to regulate temperature
38. Define 'osmosis'.	Net movement of water molecules down the water concentration gradient through a partially permeable membrane
39. What will happen to a plant if its cells are not turgid?	Wilted/droopy leaves or bent stems
40. What does 'plasmolysed' mean?	The cell membrane becomes detached from cell wall
41. Define 'transpiration'.	Loss of water vapour by evaporation from the leaf surface through stomata
42. Briefly describe the transpiration stream.	Constant movement of water through xylem from roots to leaves
43. Give two adaptations of plants that live in hot/dry climates	Thick waxy skin to prevent evaporation, large stems to store water, deep roots to get groundwater, widespread shallow roots to create large S.A to absorb more water
44. Why is having fewer stomata an adaptation to living in the desert?	Reduces spaces that water can evaporate from, reduces transpiration rate
45. What are the factors that affect transpiration?	Wind/light intensity/humidity/temperature
46. Name the equipment used to estimate transpiration rate.	Potometer
47. Why must the same plant be used in repeats?	As they can have different sized leaves and therefore different transpiration rates
48. What is a limiting factor?	An environmental condition that when it is in short supply it slows down or prevents a reaction or process.
49. What are the factors that can affect the rate of photosynthesis?	Light intensity/temperature/carbon dioxide concentration
50. How does higher light intensity affect the rate of photosynthesis?	Increase
51. Why would photosynthetic rate decrease at higher temperatures?	Enzymes become denatured
52. State one factor to maintain in a greenhouse for optimal plant growth.	High CO2 levels/Constant light/Appropriate temperatures/Regulate watering
53. What do you need to measure to calculate the rate of photosynthesis?	the number of bubbles in a set amount of time

Biology B9 Respiration Knowledge Organiser

1. Outline the flow of air from the atmosphere into our lungs, starting from the nasal cavity.	Nasal cavity --> trachea --> bronchi --> bronchioles --> alveoli
2. What two structures change the pressure inside the chest cavity to ventilate lungs?	Intercostal muscles + Diaphragm
3. What does the diaphragm do when you inhale?	It contracts and flattens when you inhale. This creates a vacuum effect that pulls air into the lungs.
4. What does the diaphragm do when you exhale?	When you exhale, the diaphragm relaxes and the air is pushed out of lungs.
5. Describe the state of the diaphragm as we breathe in.	Contracts and flattens
6. Describe the state of the diaphragm as we breathe out.	Relaxes and return to dome shape
7. State the function of the ribcage.	Protect the heart and lungs
8. Describe what happens to the ribcage as we breathe in.	Ribcage moves up and out
9. Describe what happens to the ribcage as we breath out.	Ribcage moves down and in
10. State one adaptation of the lungs for efficient gas exchange.	Lots of alveoli to increase surface area; Rich blood supply/Extensive capillary network; Thin walls (one cell thick)
11. Why is it important for the lungs to have a rich blood supply?	Maintain steep concentration gradient for efficient diffusion
12. Define 'aerobic respiration'.	An enzyme-controlled process in which glucose reacts with oxygen and energy is released. Takes place in the mitochondria of cells.
13. State the word equation of aerobic respiration.	Glucose + Oxygen --> Carbon dioxide + Water

14. Is respiration endothermic or exothermic?	Exothermic
15. Where does aerobic respiration occur in the cell?	Mitochondria
16. Give one importance of respiration.	Metabolic reactions (eg. Build)/Muscle contraction/Maintaining body temp/Active transport
17. State one response of the body to exercise.	Increase heart rate/breathing rate/Glycogen converted to glucose/Increase blood flow to muscles
18. What happens to the glycogen stored in muscles when you exercise?	Converted into glucose for respiration
19. What happens to the glycogen stored in muscles when you exercise?	Converted into glucose for respiration
20. What is anaerobic respiration?	Breakdown of glucose to release small amount of energy without the use of oxygen
21. Name the toxic substance produced by anaerobic respiration.	Lactic acid
22. Define 'oxygen debt'.	Amount of oxygen needed to break down lactic acid
23. What do plants make in anaerobic respiration?	Ethanol and carbon dioxide
24. Give one use of yeast doing anaerobic respiration.	Making bread and alcohol
25. Give one example of a metabolic reaction in cells.	Convert glucose to glycogen, starch or cellulose. Make/breakdown molecules Photosynthesis or respiration

SCIENCE: BIOLOGY YEAR 11 TOPIC: Hormonal Coordination

Endocrine System and Glands		
1	What is the endocrine system?	System of glands that secrete hormones into the bloodstream
2	What does secrete mean?	To release or let out.
3	How do the effects of the endocrine system compare to the nervous system?	Endocrine system effects are slower but act for longer
4	Where is the pituitary gland located?	Brain
5	What is the function of the pituitary gland?	The master gland that secretes many hormones that act on other glands and organs.
6	What is the function of the Thyroid gland?	Controls the rate of metabolism in the body by secreting thyroxine
7	What is the function of the pancreas?	Controls blood glucose levels by secreting insulin and glucagon.
8	What is the function of the adrenal glands?	Secretes adrenaline for 'fight' or 'flight' response.
9	What is the function of the ovaries?	Controls menstrual cycle and puberty in females
10	What is the function of the testes?	Controls sperm production and puberty in males
Controlling Blood Glucose		
11	Which hormone is released when blood glucose levels are too high?	Insulin
12	How does insulin decrease blood glucose levels?	Blood glucose is packed into glycogen in the liver
13	Which hormone is released when blood glucose levels are too low?	Glucagon
14	How does glucagon increase blood glucose levels?	It breaks down glycogen in the liver back into glucose.
15	What is the cause of type 1 diabetes?	Pancreas produces insufficient insulin
16	What is the cause of type 2 diabetes?	Body cells no longer respond to insulin
Menstrual Cycle		
17	Typically, how long is the menstrual cycle?	28 days
18	What happens during days 1-7 of the menstrual cycle?	Uterus lining sheds
19	What happens during days 7-13 of the menstrual cycle?	Uterus lining builds up.
20	What happens on day 14 of the menstrual cycle?	Ovulation- an egg is released.
21	What happens during days 15-28 or the menstrual cycle?	The uterus lining is maintained.
22	What is the function of FSH?	Causes eggs to mature in the ovaries, and stimulates ovaries to produce oestrogen
23	Where is FSH released from?	Pituitary gland.
24	What is the function of LH?	Stimulates the release of an egg- ovulation.
25	Where is LH released from?	Pituitary gland
26	What is the function of oestrogen?	Causes lining of uterus wall to thicken Inhibits FSH Stimulates LH
27	Where is oestrogen released from?	Ovaries
28	What is the function of progesterone?	Maintains uterus lining. Inhibits FSH and LH
Controlling Fertility and Infertility		
29	What are the methods of hormonal contraception?	Oral contraceptives, injection, implant, skin patch, IUD
30	What are the methods of non-hormonal contraception?	Barrier methods (condom), copper IUD, spermicidal agents, sterilisation, abstinence
31	How do oral contraceptives work?	Contain hormones like oestrogen and progesterone to inhibit FSH production so no eggs mature.
32	What is infertility?	When a couple have difficulty becoming pregnant.
33	State the disadvantages of IVF treatment.	Emotionally and physically stressful Low success rate Can lead to risky multiple births
Other Hormones		
34	What is the function of adrenaline in the body?	Increases heart rate and boosts delivery of oxygen and glucose to brain and muscles to prepare the body for 'fight or flight
35	What is the function of thyroxine in the body?	Stimulates basal metabolic rate, so is important for growth and development
36	Name one hormone controlled by negative feedback.	Thyroxine

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SCIENCE: BIOLOGY YEAR 11 **TOPIC: Hormonal Coordination**

Plant Hormones

37	What is tropism?	A plants response to a stimulus
38	What is phototropism?	Plant shoots grow towards the light.
39	What is gravitropism?	Plant roots grow towards gravity.
40	What controls phototropism and gravitropism?	Auxins- a plant hormone.
41	What is the function of gibberellins?	A hormone that controls seed germination.
42	What can auxins be used for?	Weed killers, rooting powders, promoting growth.
43	What are gibberellins used for?	End seed dormancy, promote flowering and increase fruit size.

Water and Nitrogen Balance

44	What is water balance in the body called?	Osmoregulation
45	How is water lost from the body?	Lungs during exhalation, skin in sweat.
46	How is excess water and ions removed from the body?	By the kidneys as urine.
47	How are excess amino acids removed by the body?	They are deaminated in the liver to form ammonia, then ammonia is converted to urine.
48	Which organ system do the kidneys belong to?	Urinary system.
49	How do kidneys produce urine?	By filtration of the blood and selective reabsorption of useful substances such as glucose, some ions and water.
50	What does urine contain?	Water, urea and salts.
51	Which hormone controls water levels in the body?	ADH.
52	Where is ADH released from?	Pituitary gland.
53	What is the function of ADH?	It increases how much water is reabsorbed into the body.
54	When blood water levels fall what happens?	More ADH is released.
55	When blood water levels rise what happens?	Less ADH is released.
56	What is osmoregulation and ADH release an example of?	Negative feedback.
57	What are treatments for kidney failure?	Organ transplant or by using kidney dialysis

1.	State the law of conservation of energy.	Energy cannot be created or destroyed, it can only transfer from one place to another.
2.	How does the law of conservation of energy apply to chemistry?	In all chemical reactions, energy is either transferred to the surroundings or from the surroundings.
3.	What is an exothermic reaction?	A reaction where energy is transferred to the surroundings.
4.	Give two examples of exothermic reactions.	Combustion, respiration
5.	What happens to the temperature of the surroundings during an exothermic reaction?	They increase. The thermometer is included in "the surroundings" so shows the temperature increasing.
6.	What is an endothermic reaction?	A reaction where energy is transferred from the surroundings.
7.	Give two examples of endothermic reactions.	Thermal decomposition reactions, citric acid and sodium hydrogencarbonate.
8.	What happens to the temperature of the surroundings during an endothermic reaction?	They decrease. The thermometer is included in "the surroundings" so shows the temperature decreasing.
9.	State two uses of exothermic reactions	Self-heating cans, hand warmers
10.	State two uses of endothermic reactions	Some cooling sports injury packs
11.	What are reactants?	The substances involved in a chemical reaction

12.	What are products?	The substances formed when reactants have a chemical reaction
13.	What is a reaction profile?	A diagram which shows whether the reactants have more or less energy than the products.
14.	If the reactants have more energy than the products, what kind of a reaction must have taken place?	An exothermic one. The missing energy has been transferred to the surroundings.
15.	If the reactants have less energy than the products, what kind of a reaction must have taken place?	An endothermic one. The extra energy has been take in by the surroundings.
16.	Is breaking bonds endothermic or exothermic?	Endothermic. Chemical bonds are strong so require energy to break (like when you have to put energy in to separate magnets from each other)
17.	Is making bonds endothermic or exothermic?	Exothermic. Energy is released when chemical bonds are formed (like how two magnets move together when close and generate kinetic energy)
18.	How do we work out the overall energy change of a reaction?	Work out the difference between the energy needed to break all the bonds in the reactants and the energy released to form all the bonds in the products.

SCIENCE: PHYSICS YEAR 11 TOPIC: FORCES IN ACTION

P8: Forces in balance

1	What is air resistance?	The force exerted on an object by the air, when it moves through it.
2	What is displacement?	The length and direction of the straight line from the initial position of an object to its position at a later time. Vector
3	What is distance?	The length of the path along which an object moves. scalar.
4	Define a force	Anything that changes the size, direction or speed of an object.
5	Define a non-contact force	A force that involves areas of effect which are not physically touching
6	Define friction	A force that opposes motion between two surfaces that are in contact
7	Define an interaction pair	A pair of forces that are equal in strength, but opposite in direction.
8	Define the normal reaction force	The force exerted by a hard surface on an object that presses on it.
9	What is a resultant force?	The sum, taking their directions into account, of all the forces acting on an object.
10	What are contact forces?	A force that involves objects that are physically touching
11	What is a scalar quantity?	Only has a magnitude
12	What is a vector quantity?	Has a magnitude and a direction
13	Is Acceleration a vector or scalar?	Vector because it requires a change in velocity
14	What is the uniform acceleration of a falling object under gravity?	10 m/s/s
15	Define weight	The effect of gravity on mass
16	Define mass	The amount of matter in an object
17	What is newtons first law?	If the resultant force is 0 - the object remains stationary or is travelling at a constant speed
18	What is newtons second law?	F = ma
19	What is newtons third law?	For every action there is an equal sized force in the opposite direction
20	Define Inertia	the property of an object to remain in a constant state unless acted on by an external resultant force

P9: Motion

1	What is average speed?	The distance moved by an object divided by the time taken for this to happen. Scalar
2	What is a distance-time graph?	A way of summarising the motion of an object by showing how far it has moved from its starting point at every instant during its journey.
3	Define instantaneous speed	The rate at which an object is moving at a given moment in time.
4	What is velocity?	Speed in a given direction.
5	What is a velocity-time graph?	A graph that can be used to plot the velocity of an object versus time.
6	State the equation which links distance, speed and time	s=vt
7	State the equation which links acceleration, change in velocity and time taken	a=Δv/t
8	What is the unit of weight?	Newtons (N)
9	What is the unit of mass?	kilograms (kg)
10	What is the unit of speed or velocity?	metres per seconds (m/s)
11	What are the units of acceleration?	metres per second squared (m/s^2)
12	On a distance time graph a straight line represents…	constant speed
13	On a distance time graph a horizontal line represents…	stationary
14	On a distance time graph the gradient is used to calculate the …	speed or velocity
15	On a velocity time graph an upwards straight line represents …	acceleration
16	On a velocity time graph a downwards straight line represents …	deceleration
17	On a velocity time graph a horizontal line represents …	constant speed
18	On a velocity time graph a horizontal line along the x-axis represents…	stationary object
19	Calculating the area under a velocity time graph gives the …	distance travelled

Knowledge Organiser Chemistry **UNIT 6 Combined and Single Science: Chemical changes**

1.	What is formed when a metal reacts with oxygen?	A metal oxide
2.	What is the reactivity series?	A list of elements ordered by their reactivity
3.	How can metals be placed in order of their reactivity?	Add the metals to water or acid and see which ones react the most (by how much fizzing there is)
4.	Explain why some metals are more reactive than others	They lose electrons more readily (easily)
5.	What is the name for a reaction where oxygen is removed from a compound?	Reduction
6.	Define oxidation in the terms of loss and gain of oxygen	Oxidation is the gain of oxygen
7.	Define reduction in the terms of loss and gain of oxygen	Reduction is the loss of oxygen
8.	What is a redox reaction	One in which both oxidation and reduction occur
9.	Which metals are found as the metal themselves in Earth's crust?	Gold and silver
10.	Which kinds of metal can be extracted from their oxides by reduction with carbon?	Those less reactive than carbon
11.	Which kinds of metal cannot be extracted from their oxides by reduction with carbon?	Those more reactive than carbon
12.	Explain why gold and silver can be found as the metal themselves in the Earth's crust	They are very unreactive
13.	What process is used to extract metals more reactive than carbon from their ores?	Electrolysis

14.	Define acids in terms of pH	A substance with a pH of less than 7
15.	Define acids in terms of ions	A substance which releases H^+ ions in solution
16.	State the three common acids and give their formulae	Hydrochloric acid, HCl(aq) Sulfuric acid, H_2SO_4(aq) Nitric acid, HNO_3 (aq)
17.	What is a neutral solution?	A solution with a pH of 7.
18.	How do you measure pH?	With an indicator or pH probe.
19.	Compare an alkali and a base?	Both can neutralise an acid but a alkali is a soluble base.
20.	Give an example of a base	Calcium oxide
21.	Give an example of an alkali	Sodium hydroxide
22.	Which ions are always present in a solution of an alkali?	OH^-
23.	What is a salt?	A compound formed when some or all of the hydrogen from an acid is replaced by a metal
24.	What type of salts are formed by the three main acids?	Hydrochloric acid produces chlorides Sulfuric acid produces sulphates Nitric acid produces nitrates
25.	Which ions always react together in a neutralisation reaction between acids and alkalis?	H^+ and OH^-
26.	Write the equation showing the reaction between H^+ and OH^- ions	$H^+ + OH^- \rightarrow H_2O$

27.	Complete the equation: metal + acid →	→ salt + hydrogen gas
28.	Complete the equation: metal hydroxide + acid →	→ salt + water
29.	Complete the equation: metal oxide + acid →	→ salt + water
30.	Complete the equation: metal carbonate + acid →	→ salt + water + carbon dioxide
31.	How do you make a soluble salt from an acid?	React the acid with a base.
32.	If a salt is in solution, how do you extract it as a solid?	Allow the water to evaporate off (crystallisation)
33.	What is a strong acid?	An acid which completely splits up into its ions in water. E.g. when HCl is in water all the HCl molecules split up into H^+ and Cl^-
34.	What is a weak acid?	An acid which will have some molecules which do not split up into their ions when in water.
35.	What is the relationship between the strength of an acid and its pH?	As an acid increases in strength the pH decreases.
36.	What is a concentrated acid?	An acid where there are lots of acid particles in the water.
37.	What is a dilute acid?	An acid where there are fewer acid particles in the water.
38.	What is the relationship between pH and concentration of H^+ ions in solution?	As the concentration of H^+ ions in solution increases, pH decreases
39.	When creating the formula of an ionic compound what do you have to do?	Make sure the charges of the ions cancel out

		e.g. $MgCl_2$ as Mg = 2+ and Cl = 1-
40.	What is the formula of the carbonate ion?	CO_3^{2-}
41.	What is the formula of the hydroxide ion?	OH^-
42.	What is the formula of the sulphate ion?	SO_4^{2-}
43.	What is the formula of the nitrate ion?	NO_3^-
44.	Is this process oxidation or reduction and why? $Al \rightarrow Al^{3+} + 3e^-$	Oxidation, aluminium has lost electrons
45.	Is this process oxidation or reduction and why? $Na^+ + e^- \rightarrow Na$	Reduction, sodium ions have gained electrons
46.	What is a spectator ion?	One that does not change during a chemical reaction
47.	How do you write an ionic equation?	1. Split the aq species into ions and rewrite the equation into ions 2. Cross out the spectator ions (ions that do not change in the reaction) 3. Write the ionic equation
48.	What is a half equation?	One that shows the movement of electrons during a chemical reaction

Knowledge Organiser Chemistry **UNIT 6 Combined and Single Science: Electrolysis**

1.	What happens to an ionic substance when it is melted or dissolved in water?	The ions become free to move around
2.	What is the name for the positive electrode?	The anode
3.	What is the name for the negative anode?	The cathode
4.	Do positive ions move to the anode or the cathode?	Cathode
5.	Do negative ions move to the anode or the cathode?	Anode
6.	At which electrode would $Zn^{2}+(aq)$ turn into Zn(s)?	Cathode (needs to gain electrons)
7.	At which electrode would $Cl^{-}(aq)$ turn into $Cl_2(g)$?	Anode (needs to lose electrons)
8.	Balance the equation: $Al^{3+} + e^{-} \rightarrow Al$	$Al^{3+} + 3e^{-} \rightarrow Al$
9.	Balance the equation: $Cl^{-} \rightarrow Cl_2 + e^{-}$	$2Cl^{-} \rightarrow Cl_2 + 2e^{-}$
10.	Balance the equation: $O^{2-} \rightarrow O_2 + e^{-}$	$2O^{2-} \rightarrow O_2 + 4e^{-}$
11.	What will be the products for the electrolysis of molten iron bromide?	Iron and bromine
12.	What will be the products for the electrolysis of molten zinc oxide?	Zinc and oxygen
13.	For the extraction of which metals is electrolysis needed?	Ones more reactive than carbon, e.g. aluminium
14.	What are the two main disadvantages of using electrolysis to extract metals?	Requires a large amount of energy to melt the compounds and to produce

		the necessary electricity
15.	Why is aluminium oxide mixed with cryolite when extracting aluminium?	To lower the melting point
16.	What is produced at the anode and cathode in the electrolysis of aluminium oxide?	Aluminium at the cathode and oxygen at the anode
17.	Why does the anode need to be replaced in the electrolysis of aluminium oxide?	The oxygen reacts with the carbon electrode to produce carbon dioxide.
18.	In the electrolysis of sodium chloride solution, what are the products?	Chlorine gas and hydrogen gas
19.	Why is sodium not produced in the electrolysis of sodium chloride solution?	It is more reactive than hydrogen so hydrogen is produced instead.
20.	What is produced at the anode in electrolysis of solutions?	Either a halogen or oxygen (when there is no halogen present)
21.	For a molten NaCl, predict the products at each electrode	Pure metal (Na) at cathode, non-metal (chlorine) at anode
22.	For a NaCl (aq) solution, predict the products at each electrode	Hydrogen at anode and Chlorine at cathode

Knowledge Organiser Chemistry GCSE **UNIT 5 Combined Science: Chemical Calculations**

1.	What is the conservation of mass?	That atoms cannot be created or destroyed
2.	What is a balanced equation?	An equation that has an equal number of atoms in the reactants and products
3.	When a metal forms a metal oxide, why does the mass increase?	Because oxygen atoms have been added
4.	When an acid reacts with a metal, why does the mass decrease?	Because a gas is produced and escapes
5.	What is relative formula mass?	The sum of the relative masses of each atom in a compound
6.	What are the four state symbols and what do they stand for?	(s) solid (l) liquid (g) gas (aq) aqueous
7.	What symbol do we use for relative formula mass?	Mr
8.	What is a mole?	A big number of particles 6.022×10^{23}
9.	What is Avogadro's number?	The number of atoms in a mole 6.022×10^{23}
10.	What formula relates moles, mass and Mr?	Moles = mass /Mr
11.	What is a limiting reactant?	A reactant that does not have enough mass to react with all the product
12.	What is the unit for concentration?	g/dm^3
13.	Which formula relates concentration, mass and volume?	Concentration (g/dm^3) = mass (g) /volume (dm^3)
14.	If the amount of solute in a solution is increased, what happens to its concentration?	Increases

15.	If the volume of water in a solution is increased, what happens to its concentration?	Decreases

Knowledge Organiser Physics GCSE: **Forces and motion**

1.	A value with magnitude only is a _____?	scalar
2.	A value with magnitude and direction is a _____?	vector
3.	Distance an speed are examples of _____ quantities	scalar
4.	Force, displacement and velocity are examples of _____ quantities	vector
5.	What is a contact force?	A force between two object which are touching
6.	What ia a non-contact force?	A force between objects which are separated by space.
7.	Give two examples of contact forces	e.g. friction, air resistance
8.	List three non-contact forces	gravitational, electrostatic, magnetic
9.	Define weight	The force of gravity acting on an object's mass
10.	What device is used to measure weight?	A newtonmeter
11.	What is the name of the single point at which an object's mass appears to act?	centre of mass
12.	The centre of mas of an object is…	the single point at which the objects weight appears to act.
13.	The single force which has the same effect as the combination of all the different forces acting on an object is the _____ _____.	resultant force
14.	What is the unit of weight?	Newtons (N)
15.	What is the unit of mass?	kilograms (kg)
16.	What is unit of gravitational field strength?	newtons per kilogram (N/kg)
17.	What is the unit of work done?	Joules (J)
18.	What is the unit of force?	Newtons (N)
19.	What is the unit of distance?	metres (m)
20.	What is the unit of speed or velocity?	metres per second (m/s)
21.	What are the units of acceleration?	metres per second squared (m/s^2)
22.	The distance and object moves and the direction in which it moves is known as the _____	displacement
23.	The speed of an object in a particular direction is its _____	velocity
24.	When the force moving an object is balanced by frictional forces it is moving at its _____ _____	terminal velocity
25.	State Newton's First Law	The velocity of an object will only change if a resultant force is acting on the object.
26.	If balanced forces act on a moving object it will …	continue to travel at a constant speed
27.	If balanced forces act on a stationary object it will …	remain stationary
28.	State Newton's Second Law	Force = mass x acceleration (The acceleration of an object is proportional to the resultant force acting on the object, and inversely

		proportional to the mass of the object)
29.	State Newton's Third Law	Whenever two objects interact, the forces they exert on each other are equal and opposite
30.	The tendency of objects to continue in their state of rest or of uniform motion is known as …	inertia

SCIENCE: PHYSICS YEAR 11 TOPIC: FORCES IN ACTION

P8: Forces in balance

1	What is air resistance?	The force exerted on an object by the air, when it moves through it.
2	What is displacement?	The length and direction of the straight line from the initial position of an object to its position at a later time. Vector
3	What is distance?	The length of the path along which an object moves. scalar.
4	Define a force	Anything that changes the size, direction or speed of an object.
5	Define a non-contact force	A force that involves areas of effect which are not physically touching
6	Define friction	A force that opposes motion between two surfaces that are in contact
7	Define an interaction pair	A pair of forces that are equal in strength, but opposite in direction.
8	Define the normal reaction force	The force exerted by a hard surface on an object that presses on it.
9	What is a resultant force?	The sum, taking their directions into account, of all the forces acting on an object.
10	What are contact forces?	A force that involves objects that are physically touching
11	What is a scalar quantity?	Only has a magnitude
12	What is a vector quantity?	Has a magnitude and a direction
13	Is Acceleration a vector or scalar?	Vector because it requires a change in velocity
14	What is the uniform acceleration of a falling object under gravity?	10 m/s/s
15	Define weight	The effect of gravity on mass
16	Define mass	The amount of matter in an object
17	What is newtons first law?	If the resultant force is 0 - the object remains stationary or is travelling at a constant speed
18	What is newtons second law?	F = ma
19	What is newtons third law?	For every action there is an equal sized force in the opposite direction
20	Define Inertia	the property of an object to remain in a constant state unless acted on by an external resultant force

P9: Motion

1	What is average speed?	The distance moved by an object divided by the time taken for this to happen. Scalar
2	What is a distance-time graph?	A way of summarising the motion of an object by showing how far it has moved from its starting point at every instant during its journey.
3	Define instantaneous speed	The rate at which an object is moving at a given moment in time.
4	What is velocity?	Speed in a given direction.
5	What is a velocity-time graph?	A graph that can be used to plot the velocity of an object versus time.
6	State the equation which links distance, speed and time	s=vt
7	State the equation which links acceleration, change in velocity and time taken	a=Δv/t
8	What is the unit of weight?	Newtons (N)
9	What is the unit of mass?	kilograms (kg)
10	What is the unit of speed or velocity?	metres per seconds (m/s)
11	What are the units of acceleration?	metres per second squared (m/s^2)
12	On a distance time graph a straight line represents…	constant speed
13	On a distance time graph a horizontal line represents…	stationary
14	On a distance time graph the gradient is used to calculate the …	speed or velocity
15	On a velocity time graph an upwards straight line represents …	acceleration
16	On a velocity time graph a downwards straight line represents …	deceleration
17	On a velocity time graph a horizontal line represents …	constant speed
18	On a velocity time graph a horizontal line along the x-axis represents…	stationary object
19	Calculating the area under a velocity time graph gives the …	distance travelled

Key terms

1.Agencies of social control	The groups in society who control and regulate our behaviour
2.Anomie	A sense of normlessness where people feel like there are no strict rules (a cause of crime)
3.Chivalry Thesis	The criminal justice system (police, courts) are less harsh on women as they are less likely to be seen as 'bad'
4.Corporate crime	Crime committed by businesses with the aim of making profit for that business
5.Crime	An illegal act which is punishable by law
6.Criminal justice system	The system of police/ courts /prisons to manage offenders and reduce re-offending
7.Dark figure of crime	All crimes that are not witnessed, reported or recorded by police
8.Deviance	An act which goes against societies norms but may not be illegal
9.Deviancy amplification	The process whereby the mass media can exaggerate the significance of a crime or deviance in society
10.Formal social control	Where behaviour is controlled by official agencies associated with the government
11.Informal social control	Where our behaviour is controlled by social pressure/agencies such as family
12.Institutional racism	Where an organisation e.g. police shows racism and discrimination overtly or covertly
13.Relative deprivation	Where an individual feels as though they are lacking the things that individuals who are similar to them have
14.Status frustration	Where working class males are disappointed with their position in society and cannot achieve well due to education
15. Strain theory	Where individuals do not have the legitimate means to achieve the goals of society
16.Subculture	A group of individuals whose norms and values are different from mainstream society
17.Victim survey	Individuals complete a questionnaire to report crimes that they have been victims of
18.White collar crime	Crime committed by middle class professionals
19. Self-report studies	Where individuals report crimes that they have committed themselves in a survey

Why is crime and deviance difficult to define?

1. It varies by place – where the act takes place could mean it's seen as criminal.	**2**. It varies by time – what is seen as criminal before may not be criminal now.	**3.** It varies by culture – what is deviant in one culture may not be in another.

Statistics on crime and deviance

Statistics	Advantages	Disadvantages
Police recorded crime: All crimes recorded by the police.	**1.**Large scale data, can compare trends over time and between different places.	**2**.Does not include the dark figure of crime, crimes may not be witnessed (e.g. drug taking, domestic violence), reported (due to fear) or recorded by the police (seen as trivial or time wasting) Only 60% of crimes are reported, only 40% of then recorded.
Victim surveys: Crime survey for England and Wales (CSEW) - These surveys question people about their experiences of being victims of crime in the past 12 months.	**3**.Can uncover crimes not reported/recorded by the police, can look at trends in who is likely to be a victim.	**4.**People may not be honest due to fear or may over exaggerate crimes, people may not realise they have been a victim of crime so don't report.
Self- report surveys: These surveys question ask people to report any crimes that they have committed themselves in the past 12 months.	**5.**Can uncover crimes not reported/recorded by the police, can look at trends in who is likely to be a criminal.	**6**.People may not be honest due to fear or may over exaggerate crimes – means statistics might not be accurate.

Social control

1.Informal social control	2.Formal social control
Agencies associated with the government which enforce formal rules/written laws Examples: The police, courts, prison service, probation Sanctions can include fines, imprisonment.	Agencies which enforce informal rules/norms/unwritten rules in society Examples: Family, peers, religion, media Sanctions can include social pressure, approval, disapproval, grounding etc.

Theories view on Social control

1.Functionalist	2. Marxist	3. Feminist
View social control positively as it maintains social order/cohesion.	View it negatively as it is used by the ruling class to control the working class.	View it negatively as it is used by men to control women.

Theories view on crime

1.Functionalist

Crime is inevitable and universal. It occurs when individuals can't achieve the goals of society.
Durkheim: Crime can be positive for society through – 1) Boundary maintenance
2) Changing society
3) Acts as a warning device
4) Provides jobs
Merton: Crime occurs due to strain – people cannot legally achieve the goals of society due to poor education/opportunities.
5 reactions – **conformity, innovation, retreatism, rebellion and ritualism.**

2.Marxist

Crime is negative and helps to maintain capitalism/keep the class divide. The ruling class create laws which benefit them and scapegoat the working class. The working classes are targeted by police and so are more likely to appear in crime statistics. Middle class/white collar crime less likely to be detected.

3.Feminist

Crime is negative and helps to maintain patriarchy in society. Crimes such as domestic violence and sexual crimes are not taken seriously and female victims are not supported. Female criminals are seen as 'double deviants' as they go against the law and expectations.

Key Sociologist

1.Merton (Functionalist)

Merton argued that all members of society hold the same values. However, Merton believed that they did not have the same opportunity to realise their shared goals. Strain theory says crime occurs when individuals cannot legally achieve the goals of society. There are 5 reactions to strain, not all are criminal – conformity, innovation, ritualism, retreatism and rebellion.

2.Cohen (Functionalist)

Cohen argues that working class boys hold the same goals as the rest of society, but that because of educational failure and poor employment prospects, they have little or no opportunity to realise those goals. They experience status frustration and join delinquent subcultures where they show vandalism, graffiti, joyriding etc. to gain status in their group.

3.Becker (Interactionist)

An act only becomes seen as criminal/deviant when it is labelled as such. An individual could accept the label through a self-fulfilling prophecy which becomes their master status (what they see as their most important characteristic). They could spiral into a deviant career by joining a criminal or deviant subculture and commit further acts.

4.Carlen (Feminist)

Used unstructured interviews with 39 working class women to understand reasons for crime. They turned to crime because they had less to lose and couldn't conform to the gender deal or the class deal. For example, they were less likely to have stable and happy relationships or well paid jobs – they were more likely to turn to crime as they had less to lose.

5.Heidensohn (Feminist)

She uses control theory to explain how patriarchy in society means women commit less crime. Women are controlled at home (by husbands), at work (by male bosses) and in public (by the threat or fear of male violence). Girls develop a bedroom culture. They have less opportunity for crime due to more controls being put over their behaviour.

Social class and crime

Trends – Working class are more likely to be convicted offenders / in prison

Reasons	Material and relative deprivation, Inadequate socialisation, Poorer education (strain theory), Status frustration (Cohen)
Why might statistics not be accurate?	Bias within the criminal justice system – working class crimes (blue collar) are targeted more by police than middle class (white collar) White collar crimes (e.g. fraud, tax evasion) are less likely to be detected – they take place in private, may not have a direct victim and are not policed Corporate crimes (e.g. horse meat scandal) are less likely to be detected – may not have a direct victim and can be covered up

Gender and crime

Trends – 94% of the prison population are male, ¾ of convicted offenders are male

Reasons	Gender socialisation (men are socialised to be tough, risk taking) Lack of male role models in society More opportunity for crime / subcultures
Why might statistics not be accurate?	Chivalry thesis – women may be treated more leniently in the CJS, seen as 'sad not bad' so don't appear in statistics Female crime is increasing – women are committing more crime than before Ladette subcultures – women committing typically 'male crime' Carlen – working class women have less to lose by committing crime

Ethnicity and crime

Trends – 13% of the prison population are black vs. 3% in the general population, 9x more likely to be stopped and searched

Reasons	Higher chance of poverty/deprivation, poorer family backgrounds (more lone parent), more chance of joining criminal subcultures
Why might statistics not be accurate?	Institutional racism / Macpherson Report – police/courts are more likely to target BAME individuals Stop and searches – 9X more likely for black individuals, 3x more likely to be arrested – more likely to appear in crime statistic Chief of Met policed voiced it is still racist, some forces have no BAME officers But… anti-racism training, increased recruitment of BAME officers

Age and crime

Trends – 15-24-year olds most likely to appear in crime statistics

Reasons	Socialisation, opportunity, subcultures, media But… The police might target young people, crimes may be easier to detect

Treatment of young offenders

Should young offenders be sent to prison/custody?

1.Yes	2.No
Protects the public, can access rehabilitation programmes, can act as a deterrent	Prisons may act as universities of crime, 73% reoffend, may join prison gangs

Prison as a punishment

Is prison the best form of punishment?

1.Yes	2.No
Functionalists – can rehabilitate offenders, act as a deterrent	Universities of crime, 45% reoffend, not suitable for those with disabilities/mental health issues

Violent crime

Is violent crime an issue in society?

1.Yes	2.No
Statistics may not show true extent of violent crime Gun crime/knife crime are increasing Influence of the media in promoting violence	Some statistics suggest violent crime has decreased since the 1990s Anti-violence and anti-gang education introduced into schools

The media and crime

Is violent crime an issue in society?

1.Yes	2.No
Functionalist view – the media shows a range of views, pluralism, no one group dominates	Marxists – conflict view, agenda setting, media owned by ruling class, scapegoats working class, Exaggerates violent/sexual crimes

A. Time expressions	B. Impersonal "se" verbs + verb "celebrar"	C. Location	D. Type of celebration + examples of real traditions
A principios de abril *(early April)* ***A mediados de enero*** *(mid January)* ***A finales de agosto / A fines de agosto*** *(late August)* ***El 28 de julio*** *(on the 28th of July)* ***Todos los años*** *(Every year)* ***Habitualmente*** *(usually/normally)* ***En octubre*** *(In October)* ***En invierno*** *(in winter)* ***En verano*** *(in summer)* ***En primavera*** *(in spring)* ***En otoño*** *(in autumn)* ***En Navidad*** *(at Christmas)* ***En Pascua*** *(at Easter)*	**se celebra** *(it is celebrated)* **se festeja** *(it is celebrated)*	***En España*** ***En México*** ***En Alicante*** ***En Inglaterra*** ***En Escocia*** ***En Londres***	***la fiesta*** *(festivity/celebration)* ***el festival de cine / el festival de música*** *(cinema/music festival)* ***la feria*** *(fair)* ***el carnaval*** *(carnival)* ***el desfile / la procesión / la cabalgata*** *(parade)* ***las corridas de toros*** *(bullfighting)* ***la nochebuena*** *(Christmas Eve)* ***la nochevieja*** *(New Years Eve)*
	celebramos *(we celebrate)* **los ingleses celebramos** *(English people we celebrate)* **los españoles celebran / los mexicanos celebran / los colombianos celebran …** *(Spanish / Mexican / Colombian people celebrate)*	***En las playas de Argentina*** *(in the beaches of…)* ***En la costa de Alicante*** *(in the coast of…)* ***En las calles de Pamplona*** *(in the streets of …)* ***En las ciudades de México*** *(in the cities of…)* ***En los parques de Colombia*** *(in the parks of…)*	*El festival de cine de San Sebastián* *El festival de música de Benicassim / Arenal Sound / Glastonbury / Coachella* *Las procesiones de Semana Santa en Andalucía* *La Feria de Abril en Sevilla* *El Carnaval de Colombia* *El día de Muertos (México)* *La fiesta de San Fermín* *La fiesta de La Tomatina* *La fiesta de las hogueras de San Juan*

E. Golden opinion starters + name of tradition / festivities

Espero poder ir a / al (I hope I can go to…)	**(name of tradition/ festivities)**
Me fascina / me apasiona… *(I am fascinated by…)*	*El festival de cine de San Sebastián*
Me encantaría ir a / al *(I would love to go to…)*	*El festival de música de Benicassim*
Quisiera asistir a/ al *(I would love to go to…)*	*Las procesiones de Semana Santa en Andalucía*
Tengo ganas de ir / Tengo la intención de ir… *(I feel like/ I have the intention of going to…)*	*La Feria de Abril en Sevilla*
Mi sueño es asistir al *(My dream is to go to the…)*	*El Carnaval de Colombia*
Siempre he soñado con ir a / al… *(I have always dreamed of going…)*	*El día de Muertos (México)*
Me parece estúpido… *(I find stupid)*	*La fiesta de San Fermín (Pamplona)*
Me parece absurdo… *(I find absurd)*	*La fiesta de La Tomatina (Buñol)*
Me parece injusto… (I find unfair…)	*La fiesta de las hogueras de San Juan (Alicante)*
Me parece decepcionante… (I find disappointing)	Las corridas de toros (bullfighting)

F. Describing what is done

Debido a que… (because)	**La gente** *(the people)*	**se viste(n) con trajes regionales** *(wear traditional / regional costumes)*
		se viste(n) de manera especial *(wear special clothes)*
	Las personas *(the people)*	**se reúne(n) con sus familias** *(get together with their families)*
		celebra(n) sus tradiciones y culturas *(celebrate their traditions and cultures)*
	Los chicos y chicas *(boys and girls)*	**recuerda(n) a sus antepasados** *(remember their ancestors)*
		bailan y cantan canciones juntos *(sing and dance songs together)*
		comen y beben mucho *(eat and drink a lot)*
ya que *(because)*	**en general** *(generally)*	**hay actividades para todas las edades** *(there are activities for all ages)*
		se pueden ver desfiles asombrosos *(one can see amazing parades)*
		se puede disfrutar de tu música / de tus películas favorita(s) *(one can enjoy their favourite music/films)*
		se come comida tradicional muy rica *(one can eat delicious traditional food)*
		se malgasta mucha comida *(a lot of food is wasted)*
		es una forma de maltrato animal *(it is a way of animal mistreat / abuse)*

G. Extending opinion. Specific

Sin duda, lo que más me fascina son… *(without a doubt, the thing that amazes me the most is…)*

Los fuegos artificiales (*the firework)*

Las atracciones *(the attractions)*

Los bailes regionales *(the regional dances)*

Los disfraces y la ropa *(the customs and clothes)*

Los desfiles / las procesiones *(the parades)*

Las tapas y las comidas *(the food)*

Las flores y la decoración (*flowers and decoration)*

Los santos / las