

Core Questions
Year 9
Summer Term
2022/23



Contents

English	3
Maths	6
History	7
Religious Studies	8
Computer Science	9
ICT	11
Spanish	13
Childcare	15
Health and Social Care	18
Business.....	22
BTEC Sport.....	24
Textiles	26
Art	27
Photography.....	28
Geography.....	29
Science	34

English

1. Who are the four members of the Birling family?	Mr Birling, Mrs Birling, Eric and Sheila.
2. What are the family celebrating at the beginning of the play?	The engagement of Sheila Birling and Gerald Croft.
3. How is Eva Smith linked with Mr Birling?	Mr Birling fires Eva Smith for organising a strike.
4. How is Eva Smith linked with Sheila Birling?	Eva Smith is fired by the manager of Milwards, a department store, after Sheila complains about Eva.
5. How is Eva Smith linked with Gerald Croft?	Eva Smith, or Daisy Renton as she was called when she met Gerald, had an affair with Gerald.
6. How is Eva Smith linked with Mrs Birling?	Pregnant with Eric's child, Eva Smith goes to Mrs Birling's charity for help. Mrs Birling refuses to give help.
7. How is Eva Smith linked with Eric Birling?	Eric meets Eva and becomes drunk. It is suggested that Eric sexually assaults Eva. Eva becomes pregnant with Eric's child.
8. What are 'stage directions'?	Notes to the director and actors about what the stage should look like, and how characters should enter and exit, how actors should perform and say their lines.
9. How is the lighting described at the beginning of the play?	'Pink and intimate' suggesting that the Birlings see the world through 'rose-tinted glasses'. They do not see the harsh realities of the world.
10. How is the lighting described when the inspector enters the stage?	'Bright and hard' suggesting that the Birlings are being put under the 'spotlight': we are seeing the Birlings for who they really are from this point onwards.
11. Who reacts strangely to the news that Eva changed her name to Daisy Renton?	Gerald. He knew her as this name and realises that he is involved with Eva's death.
12. Why does Gerald want Sheila to leave the room?	Gerald had an affair with Eva Smith. He was in a relationship with Sheila at the time.
13. How does Mrs Birling criticise Eva Smith?	She believes that it is her responsibility for being in the situation she is in (pregnant and needing money). She is 'prejudiced' towards her for using a false name. She believes that she is lying about refusing to take stolen money.
14. How does Mrs Birling behave in front of the Inspector?	With authority. She is not intimidated by him at all. She then patronises him: she thinks that he is 'impertinent'.
15. What is a 'morality play'?	A play that deals with the differences between right and wrong.
16. When was the play written?	1945.
17. How do Sheila and Mr Birling respond to the news that Mrs Birling denied help to a pregnant girl?	They are both horrified. Sheila empathises with Eva, whereas Mr Birling thinks it will make the family look bad.

18. Why does Sheila try to stop Mrs Birling criticising the father of Eva's baby?	She suspects that Eric is the father from the clues that the Inspector has given.
19. When is the play set?	1912.
20. Why wouldn't Eva marry Eric?	She thought he too young and foolish. Also, they were from different social classes.
21. What is the Inspector's final message before he leaves?	If we do not help others, we shall all experience 'fire, blood and anguish'.
22. What do Mr Birling and Mrs Birling focus on after the Inspector leaves?	Covering up what they have done. They are more concerned with the family's reputation rather than the fate of Eva Smith.
23. What do Eric and Sheila feel after the Inspector leaves?	They feel guilty for their role in Eva's death.
24. How do Mr Birling, Mrs Birling and Gerald feel when they realise the Inspector is not a real police officer?	They feel relieved. They think that they have had a trick played on them.
25. Why do Eric and Sheila react differently to their parents?	They still feel guilty: even though there may not have been a real 'Eva Smith', what they did still happened.
26. How does the play end?	Mr Birling receives a call saying that a girl has just been brought into the Infirmary after drinking disinfectant and that a police inspector is on his way to ask the family some questions.
27. Finish the quote: 'As if we're all mixed up like _____	'bees in a hive'
_____.'	
28. Finish the quote: 'The famous younger generation who _____.'	'know it all'
_____.'	
29. Finish the quote: 'We do not live alone. We are members of _____.'	'one body'
_____.'	
30. Finish the quote: 'I accept no _____ for it at all.'	'responsibility'
_____.'	
31. Finish the quote: 'Girls of that _____'	'class'
_____'	
32. Finish the quote: 'But these girls aren't _____	'cheap labour'
_____. They're people.'	
33. Finish the quote: 'You're not the kind of man a chap could go to when he's in _____'	'trouble'.

34. Finish the quote: 'Everything's alright now Sheila. What about this _____?'	'ring?'
35. Finish the quote: 'We've been _____'.	'had'

Maths

	Question	Answer
1	What does the letter m in the equation $y=mx+c$ stand for?	M represents the gradient of the straight line
2	What does the letter c in the equation $y=mx+c$ stand for?	C represents the y intercept of the straight line
3	What is meant by gradient?	Gradient is how steep a straight line is
4	What is the definition of parallel lines?	Parallel lines never meet, they have the same gradient
5	What does the term scale factor mean in relation to enlargements?	Scale factor is how many times bigger the lengths in an enlarged shape are
6	What is meant by similar shapes?	Similar shapes are two or more shapes where one is an enlargement of the other
7	What is meant by congruent shapes?	Congruent shapes are shapes that are the same in terms of shape and size
8	What is a point of invariance?	A corresponding point on the object and the image that is in the same place
9	When enlarging a shape what name is given to the original shape?	The object
10	When enlarging a shape what is the name given to the new enlarged shape?	The image
11	What is direct proportion?	Direct proportion is where the response variable increases proportionally with the control variable
12	What is inverse proportion?	Inverse proportion is where the response variable decreases proportionally with the control variable
13	What is the relationship between Speed, Distance and Time?	Speed = distance / time
14	What is the relationship between Density, Mass and Volume?	Density = Mass / volume
15	What are the sum of internal angles for triangles, and quadrilaterals?	The sum of internal angles in a triangle is 180 degrees, and the sum of internal angles in a quadrilateral is 360 degrees

History

	Core Question	Answer
1	What type of weapon ended the Second World War with Japan?	Atomic
2	What does the term 'Cold War' mean?	A war without fighting / a war of words / ideological conflict
3	Name one difference between capitalism and communism	Democracy vs. dictatorship / individual profit vs. state owned / freedom of speech vs. limits
4	How had Russia taken over Eastern Europe?	Rigged elections / murder & Terror
5	What was the name of the American policy that aimed to stop the spread of communism?	Truman Doctrine / Policy of Containment
6	Name a Proxy War of the Cold War	Korea and Vietnam War
7	How did USA, Britain and France counter the Berlin Blockade	Airlift
8	In which zone was Berlin?	East Germany – USSR zone.
9	Which country was the first to launch a satellite?	USSR
10	When did Neil Armstrong step on the moon?	1969
11	When was the Berlin Wall first set up?	13 th August 1961 – Barbed wire Fence
12	When did the Berlin Wall Fall	9 th November 1989
13	Why was the Bay of Pigs a disaster for Kennedy?	He had cancelled the order for air support and so the rebels who had been landed at Bay of pigs were captured and murdered.
14	Why was discovering Nuclear missiles on Cuba worrying for the USA?	Cuba was only 90 miles away - biggest cities like Washington DC and New York, would be well within range of these missiles. The lives of 80 million Americans were at stake.
15	What tactics did the Viet Cong use in the Vietnam war?	Guerrilla tactics – Booby traps, tunnels, no uniform.
16	How many were killed in the My Lai massacre?	Approx. 400

Religious Studies

1	List some of the reasons people commit crimes.	Poverty, opposition to an unjust law, hate, greed, addiction, mental illness, upbringing
2	What is a hate crime?	Crimes (often violence) targeted at a person because of their race, religion, sexuality, disability or gender.
4	What is corporal punishment?	Punishment of an offender by causing them pain – now illegal in the UK.
5	What is capital punishment?	A form of punishment where the offender is put to death for their crimes.
6	What is justice?	Everyone being treated fairly.
8	State a bible quote that tells Christians that they should forgive others.	<p>"Forgive us our sins as we forgive those who sin against us." – The Lord's Prayer</p> <p>"Lord, how many times shall I forgive my brother when he sins against me? Up to seven times?' Jesus answered, 'I tell you, not seven times, but seventy-seven times." – Matthew 18:21-22</p> <p>"Father forgive them, for they do not know what they are doing." – Jesus speaking as he is being crucified in Luke 22:34.</p>
9	What is a crime?	An offence which is punishable by law, e.g. stealing or murder.
10	What is a punishment?	Something legally done to somebody as a result of being found guilty of breaking the law.
11	What is meant by evil?	The opposite of good. A force or the personification of a negative power that is seen in many traditions as destructive and against God.
12	What is meant by poverty?	Being without money, food or other basic needs of life (being poor).
13	What is a mental illness?	A medical condition that affects a person's feelings, emotions or moods, and perhaps their ability to relate to others.
14	What is an addiction?	A physical or mental dependency on a substance or activity which is very difficult to overcome.
15	What is meant by greed?	Wanting to possess wealth, goods or items of value which are not needed.
17	What is an aim of punishment?	The reason giving a particular punishment – what do they want to achieve by the end of the punishment?
18	What is retribution?	An aim of punishment; to get your own back – revenge – "An eye for an eye".
19	What is deterrence?	An aim of punishment; to put people off committing crimes.
20	What is reformation?	An aim of punishment; to change someone's behaviour for the better.
21	What is meant by free-will?	The ability of people to make decisions for themselves without constraint.
22	What is prison?	A secure building where offenders are kept for a period of time set by a judge.
23	What is community service?	Making offenders do unpaid work in the community.
24	What is forgiveness?	Showing mercy, and pardoning someone for what they have done wrong.
25	What is meant by the sanctity of life?	The idea that all life is holy as it is created and loved by God. Christians believe that human life should not be misused or abused.

Computer Science

1	What are the three components of computer systems?	Inputs, processing, and outputs
2	What system is used for many purposes such as web browsing and games?	General purpose system
3	What system has only one specific task to do	Dedicated system
4	What system is part of a larger mechanical or electrical system?	Embedded system
5	Examples of computer system are	Digital washing machine Tablet computer Digital watch
6	An example of a dedicated system is	Computer to control a robot in a factory
7	An example of an embedded system is	Microwave oven
8	An example of a general-purpose system is	Tablet computer
9	Taking everyday 'things' and connecting them to the internet is called	Internet of Things (IoT)
10	What makes it possible for two computer systems to communicate with each other?	Interfaces
11	How components of computers fit together is known as	computer architecture
12	What two items are used to cool processors?	Heat sink Fan
13	What does RAM stand for?	Random Access Memory
14	What does CPU stand for?	Central Processing Unit
15	Examples of primary storage are	RAM Registers on CPU
16	What does BIOS stand for?	Basic Input Output System

17	What does GPU stand for?	Graphics Processing Unit
18	Examples of secondary storage are	Hard disk Flash drive
19	What type of computer architecture do most computers use today?	Von Neumann architecture
20	The main processing component in a computer is known as	Central Processing Unit (CPU)
21	In the fetch-execute cycle, an instruction is fetched then executed. What happens between these two steps?	Decode
22	What part of the CPU coordinates the timing of the units and the flow of data?	Control unit
23	What part of the CPU is responsible for arithmetic operations like addition and subtraction?	ALU
24	What part of the CPU contains a very small amount of storage?	Registers
25	An intermediate type of memory between registers and RAM is called	Cache
26	The unit KHz means	Thousand per second
27	The unit MHz means	Million per second
28	The unit GHz means	Billion per second
29	A processor states that it is dual core. How many cores does it have?	2 cores
30	A dual core processor has a clock speed of 1.7 GHz. How many operations will it carry out per second?	$1.7 * 2 = 3.4$ operations per second

	To do this	Press
1	Create new presentation.	Ctrl+N
2	Add a new slide.	Ctrl+M
3	Apply bold formatting to the selected text.	Ctrl+B
4	Open the Font dialog box.	Ctrl+T
5	Cut selected text, object, or slide.	Ctrl+X
6	Copy selected text, object, or slide.	Ctrl+C
7	Paste cut or copied text, object, or slide.	Ctrl+V
8	Insert a hyperlink.	Ctrl+K
9	Insert a new comment.	Ctrl+Alt+M
10	Undo the last action.	Ctrl+Z
11	Redo the last action.	Ctrl+Y
12	Go to the next slide.	Page down
13	Go to the previous slide.	Page up
14	Start the slide show.	F5
15	End the slide show.	Esc
16	Print a presentation.	Ctrl+P
17	Save the presentation.	Ctrl+S
18	Close PowerPoint.	Ctrl+Q
19	Open the File menu.	Alt+F

20	Open the Home tab and format slides, fonts, paragraphs, or drawings.	Alt+H
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Spanish

1	In my family there are five people: my parents, my siblings and I.	En mi familia hay cinco personas: mis padres, mis hermanos y yo.
2	We live in Malaga <u>that is</u> in the south of Spain.	Vivimos en Málaga, <u>que está</u> en el sur de España.
3	I have a brother older <u>who is called</u> Antonio, he has 18 years.	Tengo un hermano mayor <u>que se llama</u> Antonio tiene dieciocho años.
4	I think that he is selfish and rude but is not honest, <u>for that</u> I fight with him.	Pienso que es egoísta y maleducado pero no es honrado, <u>por eso me peleo</u> con él.
5	<u>However</u> , my sister younger is <i>more nice</i> and I spend a lot of time with her.	<u>Sin embargo</u> , mi hermana menor es más simpática y paso mucho tiempo con ella.
6	<u>Unfortunately</u> I don't get on well with my dad because he me gets on the nerves , <u>for that</u> I argue with him.	<u>Desafortunadamente</u> , no me llevo bien con mi padre porque me pone de los nervios , <u>por eso discuto</u> con él.
7	<u>On the other hand</u> , my mum is very understanding, <u>although</u> she gets angry for nothing .	<u>Por otro lado</u> , mi madre es muy comprensiva, <u>aunque se enfada por nada</u> .
8	<u>In addition</u> , I have a friend Ana <u>whose</u> mother is very caring, we are friends <u>since it does</u> 5 years.	<u>Además</u> , tengo una amiga Ana <u>cuya</u> madre es muy cariñosa, somos amigas <u>desde hace</u> 5 años.
9	<u>The end of the week last</u> , I went to the cinema with Ana <u>where</u> we saw a film scary.	<u>El fin de semana pasado</u> , fui al cine con Ana, <u>donde vimos</u> una película escalofriante.
10	It was unforgettable, <u>although</u> it gave me fear .	Fue inolvidable <u>aunque me dió miedo</u> .
11	If I had more time , I would like to go out more with my friends.	Si tuviera más tiempo , me gustaría salir más con mis amigos.

12	<u>The next end of week</u> , I'm going to go to the bowling alley with my relatives, it's going to be fun.	<u>El próximo fin de semana</u> , voy a ir a la bolera con mis parientes, va a ser divertido.
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	CORE QUESTION	ANSWER
1	Define the term 'development'	Development is about the way children learn to use their bodies and gain skills.
2	Define the term 'growth'	The way babies and children's bodies get larger and heavier. It is a change in physical weight or height.
3	Give two examples of how growth is measured	Height and weight. Additionally head circumference for infants.
4	What is the Personal Child Health Record ('Red Book')	The is the booklet given to parents/carers at birth to track the progress of the baby and record immunisations
5	What is a centile chart?	Centile chart uses a baby/child's weight and height to track their progress against the averages. E.g. 50 th or 90 th centile line
6	Why is it important that we track and measure growth?	Ensures that a child is meeting expected patterns and can highlight potential issues at an early stage.
7	What are the principles of development?	The skills and knowledge gained by a child over time, ensuring they meet the milestones/norms expected for their stage of development.
8	What is holistic development	This is looking at the 'whole' of the child, checking how all areas of development impact each other.
9	Define physical development	It includes development of each of your body systems and is affected by both inherited, genetic and lifestyle factors.
10	What is a motor skill?	Motor skills are movement and actions of the muscles and can be categorised into gross and fine motor skills.
11	Explain the term 'fine motor skill'	A fine motor skill also referred to as dexterity is the coordination of small muscles, in movements involving the synchronisation of hands and fingers with the eyes, such as writing, being able to button up a skirt or even blinking.
12	Explain the term 'gross motor skill'	A gross motor skill involve movement and coordination of the arms, legs and other large body parts. They involve actions such as walking, running, throwing and swimming.
13	What are the primitive reflex's	Rooting, sucking, startle, grasping, walking
14	Define hand-eye co-ordination	Moving two or more body parts at the same time in a smooth and precise action. E.g. running and kicking a ball.

15	Define cognitive intellectual development	The growth of the brain and development of your thought processes. This links to the thinking and learning of different skills, processing of information, memory and problem-solving skills.
16	Define communication and language development	This is speaking, listening and understanding of words and noises. Being able to communicate with others. E.g. showing emotions or speaking.
17	Define social development	Making connections with people and becoming part of society. This includes your family, friends and community you live in. the development of being secure and having positive relationships with others.
18	Define emotional development	The growth and understanding of feelings. The ability to give love, care and affection and to feel secure linked to self-esteem. Developing trust, independence and emotional resilience.
19	Define emotional resilience	Emotional resilience is your ability to respond to stressful or unexpected situations and crises
20	Define the term 'attachment'	An attachment is a strong emotional bond between an infant and their primary caregiver. A secure attachment is required for the infant's holistic needs to be met and to develop healthy attachments with others in the future. A lack of secure attachments can lead to distrust in others.
21	List 3 things that children need to feel emotionally stable	Consistency, love & affection and routines.
22	Define security	Security is mainly a feeling of being cared for, being safe and loved are closely linked with attachment.
23	Explain the term independence	This is about reaching for a stage when an individual cares for themselves and makes their own decisions. Becoming independent such as: feeding themselves, washing and dressing themselves. They can start to make their own decisions on what they want to eat too.
24	Define contentment	An emotional state when infants and children feel happy in their environment and with the way they are being cared for.
25	Identify the two parts of language development that occur during infancy.	Pre-linguistic stage 0 - 13months Linguistic stage 13 months +
26	List the factors that could impact overall development	Physical, environmental, social, financial are all factors that impact development.
27	What is a physical factor?	A physical factor could link to issues affecting a mother's pregnancy, disabilities or additional needs, health issues or a balanced diet.

28	What is an environmental factor?	Environmental links to multiple areas such as the house you live in and its conditions, the environment e.g. supportive/stable parents.
29	What is a social factor?	A social factor links to discrimination, impacts of relationships, effects of siblings, and relationships with extended friends and family.
30	What is a financial factor?	Financial links to money, the income parents have, impact of high income and the ability to access services.

Health and Social Care

	CORE QUESTION	ANSWER
1	Define the term 'development'	Development is about the way children learn to use their bodies and gain skills.
2	Define the term 'growth'	The way babies and children's bodies get larger and heavier. It is a change in physical weight or height.
3	Give two examples of how growth is measured	Height and weight. Additionally head circumference for infants.
4	What is a life stage?	Life stages refer to different phases of life that all individuals pass through in normal lifetime.
5	List the 6 life stages	Infancy, childhood, adolescence, early adulthood, middle adulthood and later adulthood.
6	What is a motor skill?	Motor skills are movement and actions of the muscles and can be categorised into gross and fine motor skills.
7	Define physical development	It includes development of each of your body systems and is affected by both inherited, genetic and lifestyle factors.
8	Define intellectual development	The growth of the brain and development of your thought processes. This includes things like memory, problem-solving and understanding the world around us.
9	Define emotional development	The growth and understanding of feelings. The ability to give love, care and affection and to feel secure linked to self-esteem.
10	Define social development	Making connections with people and becoming part of society. This includes your family, friends and community you live in.
11	Explain the term 'fine motor skill'	A fine motor skill also referred to as dexterity is the coordination of small muscles, in movements involving the synchronisation of hands and fingers with the eyes, such as writing, being able to button up a skirt or even blinking.
12	Explain the term 'gross motor skill'	A gross motor skill involve movement and coordination of the arms, legs and other large body parts. They involve actions such as walking, running, throwing and swimming.
13	What is the age range for infancy?	0-2years
14	Define the term 'attachment'	An attachment is a strong emotional bond between an infant and their primary caregiver. A secure attachment is required for the infant's holistic needs to be met and to develop healthy

		attachments with others in the future. A lack of secure attachments can lead to distrust in others.
15	Explain the term 'bonding'	Bonding is the formation of a mutual emotional and psychological closeness between parents or primary caregiver's and with their new born child. Babies usually bond with their parents in the minutes, hours, or days following the birth. This can be done through a physical closeness and is often the reason healthcare professionals advise skin to skin interactions after the birth of the baby with both parents.
16	List 3 things that children need to feel emotionally stable	Consistency, love & affection and routines.
17	Define security	Security is mainly a feeling of being cared for, being safe and loved are closely linked with attachment.
18	Explain the term independence	This is about reaching for a stage when an individual cares for themselves and makes their own decisions. Becoming independent such as: feeding themselves, washing and dressing themselves. They can start to make their own decisions on what they want to eat too.
19	Define contentment	An emotional state when infants and children feel happy in their environment and with the way they are being cared for.
20	List the four areas of intellectual development that occur in childhood	Memory recall, language development, problem solving and abstract/creative thinking.
21	Identify the two parts of language development that occur during infancy.	Pre-linguistic stage 0 - 13months Linguistic stage 13 months +
22	Define puberty	The physical changes that occur prepare the body for sexual reproduction.
23	Identify the two categories of sex characteristics	Primary Sex Characteristics - Any of the external physical characteristics of sexual maturity. Secondary Sex Characteristics - Any of the body structures directly concerned in reproduction, as the testes, ovaries and external genital.
24	Explain the term 'abstract thinking'	This is the ability to think using concepts and ideas rather than through objects and doing tasks. For example: A seven year old child may be able to calculate how long it takes to travel to a destination by train by pushing the fingers of a clock around its face, whereas teenagers can usually do this calculation in their heads.

25	Explain the term 'logical thinking'	Adolescents also begin to think in a more logical way to solve problems and can empathise – see things from other people's perspective and realise that the world is not centred totally on them. This period is also a time when teenagers develop their own set of morals and ideas about what is right and wrong.
26	Define self-image	The mental picture we have of ourselves. Influenced by: personal appearance, the media, comparing ourselves to others, things other people say about us.
27	Define self-esteem	How much you like, accept and respect yourself, how much you value yourself.
28	Define peer pressure	A feeling that one must do the same things as other people of one's age and social group in order to be liked or respected by them.
29	Explain the term 'physically mature'	People are at their peak of physical fitness and have reached their full height. Women are at their most fertile.
30	Define lifestyle	Lifestyle involves the choices made that affect health and development such as diet, exercise, opinions, behaviours and interests. Can also be referred to as 'way or style of living'.
31	Define menopause	A reduction in hormones causes a women's periods to stop
32	Explain social isolation	The absence of social interactions, contacts and relationships with family and friends, with neighbours on an individual level, and with 'society at large' on a broader level.
33	List some of the physical developments that can occur during menopause.	Ovaries stop releasing eggs, menstruation stops, reduction in the production of oestrogen, temperature regulation – causes 'hot flushes' or 'night sweats', loss or thinning of hair, disturbed sleep and possibly osteoporosis where bones become more brittle.
34	List some of the intellectual a developments that can occur during menopause.	Loss of memory, learn a new skill to stimulate and invigorate the mind.
35	List some of the emotional developments that can occur during menopause	Mood swings, low or reduced self-esteem, loss of confidence, grief as no longer able to conceive or depression.
36	Explain how social isolation may occur during menopause.	Social isolation may occur as women go through menopause as they may lose confidence in their abilities, lack self-esteem and this may lead to them distancing themselves away from their friends or family. They may develop depression as a result of this and find it difficult to develop the coping strategies needed in order to socialise with others.

37	List 4 physical developments that may occur during later adult hood	<p>Greater susceptibility to illness</p> <p>Slower recovery times</p> <p>Slowing down of physical responses</p> <p>The skin is thinner, joints are stiffer, muscles weaker and bones often more brittle.</p> <p>Less mobile</p> <p>Lose height</p>
38	Define the term 'genetic inheritance'	The genes a person inherits from their parents.
39	What is dementia	An illness that affects the brain and memory, and makes you gradually lose the ability to think and behave normally.
40	List 4 life events that could affect someone's emotional development during later adulthood	<p>Isolation from peers, Loss of independence, Progressive deterioration of health, Loss of significant other, Loss of friends,</p> <p>Being ignored despite having wisdom and experience</p>

Business

Entrepreneur	Individual who has a business idea and plans to set up a new business
Creativity	The use of imagination or original ideas to create something
Innovation	The creation, development and implementation of a new product, process or service
Risk-taking	The act or fact of doing something that involves danger or risk in order to achieve a goal
Negotiation	Discussion aimed at reaching an agreement
Communication	Giving or exchanging of information by speaking, writing, or using some other medium
Confidence	A feeling or belief that you can do something well or succeed at something
Determination	The ability to continue trying to do something, even if it is difficult
Work-life balance	The amount of time you spend doing your job compared with the amount of time you spend with your family and doing things you enjoy
Market	A place where buyers and sellers come together to trade goods and services
Market share	The section of a market controlled by a particular business
Market research	The actions of a business to gather information about customers' needs and wants
Primary (field) research	Gathering data and information that has not been collected before
Secondary (desk) research	Gathering data and information that has already been collected before
Qualitative data	Data based on the opinions of those being asked
Quantitative data	Data collected that is based on facts of numbers; it is easier to analyse than qualitative data
Target market	A particular group of customers at which a good or service is aimed
Market segmentation	The division of a market into groups or segments
Fixed costs	Costs that remain unchanged when the output of a business changes
Variable costs	Costs that vary directly with (and are dependent on) the level of output
Total costs	Calculated by adding together all the business's costs for a particular level of output. Fixed Costs + Variable Costs
Revenue	The money a business earns from selling goods or providing services
Total revenue	The total amount of money earned at a particular output level. It is calculated as selling price per unit x output level (number of sales)
Profit	A financial gain. Profit is calculated as total revenue – total costs
Break-even	The point at which a business makes no profit and no loss. It is the point at which total costs equal total revenue
Cash	Cash is legal tender that can be used to exchange goods, debt, or services
Marketing mix	The four Ps of marketing are the key factors that are involved in the marketing of a good or service. They are the product, price, place, and promotion of a good or service
Digital advertising media	The process of publishing promotional material through online platforms such as social media, search engines, websites, and any other program that can be accessed digitally
E-Commerce	The buying and selling of goods and services over the internet
Non-digital advertising media	Advertising via traditional methods such as leaflets, radio, newspapers, magazines, posters/billboards and cinema
Sales promotion	Sales promotion is the process of persuading a potential customer to buy the product. Sales promotion is designed to be used as a short-term tactic to boost sales
Public relations	Public relations covers a broad series of activities where a business manages its relationships with different parts of the public, e.g. customers, the media, local communities, suppliers, employees and investors.
Product lifecycle	Shows the journey of a product from its development and launch to its eventual removal from sale
Extension strategies	Actions a business can take to extend the life of a product and increase sales

Penetration pricing	Introducing a product at a lower price than usual to attract customers, then gradually increasing the price over time
Competitive pricing	Setting a price that is similar to that of a local competitor
Price skimming	Introducing a product at a high price then gradually lowering the price over time
Psychological pricing	Setting a price that appears attractive to a customer
Sole trader	Sole trader a simple business structure in which one individual runs and owns the entire business
Partnership	A partnership is a business where there are two or more owners of the enterprise. Most partnerships are between two and twenty members
Private Limited Company (Ltd)	A business that is owned by its shareholders, run by directors and where the liability of shareholders for the debts of the company is limited
Franchise	Franchising arises when a franchisor grants a licence (franchise) to another business (franchisee) to allow it trade using the brand / business format.
Memorandum of Association	Details of the nature, purpose and structure of the company
Articles of Association	Details of the internal rules of a company
Unlimited liability	The business owner(s) are personally liable for the debts of the business in the event that the business cannot pay them
Limited liability	The business owners are only liable for the debts of a business up to the amount of money they have invested in the business
Personal savings	Money that a business owner invests in their own business
Loans	Long-term source of finance offered by banks, building societies and other financial institutions
Crowdfunding	
Grants	Sums of money available from various charities or the government to help individuals set up a business
Business angels	Wealthy entrepreneur who provides a business owner with a substantial sum of money to help set up a business; in return then receive a proportion of the business's profits
Chamber of Commerce	a local association to promote and protect the interests of the business community in a particular place

Yr9 BTEC Sport - Core Questions:		
1	What is a rule?	Rules (or laws) as regulated by the national or international governing body for the sport. For example, the Fédération Internationale de Football Association (FIFA) laws of football, the International Rugby Board (IRB) laws of rugby, the Badminton World Federation (BWF) rules of badminton, and the International Orienteering Federation (IOF) rules of orienteering.
2	What is a regulation?	For example, relating to players and participants, equipment, playing surface, facilities, health and safety, time, officials (referee, umpire, judge, starter, timekeeper).
3	How might one of these rules be applied?	Explain your thoughts on what happens in a game/sport and verify these. Use your knowledge on how they are applied to the game with the full set of consequences.
4	What is the scoring systems of you sports?	For example, the method of scoring goals or points, method and/or requirements of victory. Discuss VAR, Extra-time, penalties etc.
5	What are the roles of officials?	For example, the roles of umpires, referees, referees' assistants, judges, timekeeper, starters, table officials, third umpire, fourth official.
6	What are the responsibilities of these officials?	For example, appearance, equipment, fitness, qualifications, interpretation and application of rules, control of players, accountability to spectators, health and safety (equipment, facilities, players), fair play, use of technology, effective communication (voice, whistle, signals).
7	Can you think of some examples of sports leaders?	For example, sports coaches, fitness instructors, school/college coaches, local club coaches, national club coaches, amateur coaches.
8	What attributes make a good sports leader?	<ul style="list-style-type: none"> ● Skills (communication, organisation of equipment & knowledge). ● Advanced skills (activity structure, target setting, use of language, evaluation). ● Qualities (appearance, enthusiasm, confidence) Additional qualities (leadership style, motivation, humour, personality).
9	What responsibilities do sports leaders have?	<ul style="list-style-type: none"> ● Coreresponsibilities(professional conduct, health and safety, equality). ● Wider responsibilities(insurance,childprotection,legalobligations,ethicsand values, rules and regulations).

10	Discuss the differences between a coach and a captain?	Skills, advanced skills, qualities, responsibilities. In game vs out of the game.
11	What are the 7 food groups?	Carbohydrates, fats, proteins, vitamins, minerals, fibre, water.
12	What is the difference between a macronutrient and a micronutrient?	Macro is large in calories and the volume that we eat: carbohydrates, fats and proteins. Micros are smaller amounts which are found in foods: Vitamins & minerals, fibre and water.
13	Explain the function of protein within the body?	Used for growth and repair.
14	What does is the RDA (recommended daily amount) of calories for an adult male and female?	2000 Female 2500 Male
15	What are supplements, and please use examples.	These are diet boosting foods or drinks which give you extra nutrients to support your lifestyle. Protein shake.
16	What are the 3 components of a warm-up?	Pulse raiser (running, skipping, ect) Dynamic Stretches Sport Specific Drill
17	What happens to the body when we warm up?	Muscles require higher amounts of oxygen, heart rate and oxygen intake thus increases to transport oxygenated blood to the working muscles via the blood vessels. This increase blood flow prepares the body for exercise.
18	What is the difference between a static and dynamic stretches?	Static means to stretch and not move. Dynamic means movement stretches
19	Give an example of a sport's specific warm-up.	Dribbling with a ball, passing, controlling shots. This is all done at a low to medium level of intensity.
20	Name all 11 of the components of fitness, breaking them down into physical and skill.	BASSFM (Acyrom) Balance, Aerobic Endurance, Strength, Speed, Flexibility and Muscular Endurance. BCRAP (Acronym) Balance, coordination, reaction time, agility, power.

Textiles

11.	What is quilting?	Quilting is the sewing together of three layers, the top, the central wadding and the backing. The piece are then stitched together.
12.	What is the definition of pattern?	A pattern is a design in which lines, shapes, forms or colours are repeated. The part that is repeated is called a motif. Patterns can be regular or irregular.
13.	What is free motion embroidery?	The art of drawing with a sewing machine.
14.	What is hot textiles?	Hot textiles is textiles pieces using heated tools or materials. This could include batik or plastic fusion.
15.	What is fusion?	The process of results of joining two or more things together to form a single entity.
16.	How do you develop (AO1) your own ideas in the style of an artist?	You can develop your own ideas in the style of an artist by exploring similar content/ subject matter, using a similar composition, exploring the same materials and techniques or using the formal elements in a similar approach, for example using the same colour palette.
17.	What is a continuous line?	A continuous line drawing is unbroken from the beginning to the end.
18.	What is 3D sculpture?	Three-dimensional art pieces, presented in the dimensions of height, width, and depth, occupy physical space and can be perceived from all sides and angles.
19.	What does refine mean?	Refining something means you are going to fine tune it and improve your work by making fine changes.
20.	What should your annotations include?	When annotating your art work you should discuss the content, process, contextual links and evaluation.

Art

	Core Question:	Answer:
Year 9 - Summer 1		
1	What are the formal elements of Art?	The formal elements of art are; line, shape, colour, tone, texture and pattern.
2	What is the difference between a natural form and a manmade object?	A natural form is something organic and untouched by man.
3	What does CEMIE stand for to support your annotations?	Content, Elements of Art, Materials & Processes, Intent, Evaluation
4	What is an organic shape?	Organic describes things that are natural or related to nature.
5	What is composition?	The placement or arrangement of the formal elements
Year 9 - Summer 2		
6	What does biomorphic mean?	Biomorphic forms or images are ones that while abstract nevertheless refer to, or evoke, living forms such as plants and the human body.
7	What 5 key elements make a successful artist research (AO1)?	Examples of the artist work, title, annotations, create background and artist copy.
8	What is symbolism in art?	Symbolism is the practice or art of using an object or a word to represent an abstract idea. An action, person, place, word, or object can all have a symbolic meaning .
9	What are the three main components of AO1 that help develop your ideas?	Mind map, mood board and artist research.
10	What are x4 mark making techniques?	Stippling, liner hatching, contour hatching cross-hatching, scrubbing, blending.

Photography

Formal Elements of Photography – Core Questions		
Year 9 – Spring Term		
Question	Answer	Mark
1.	What is a prop?	A prop is an item chosen to be used in a photographic shoot.
2.	What is the definition of staging?	Staging is the arrangements of props in a photographic shoot.
3.	What is typography?	Typography is the design of lettering.
4.	What are the formal elements of still life photography?	The formal elements of still life photography are line, shape, tone, colour, texture, form and composition.
5.	How can we develop a theme, from the starting point of literature?	We can take ideas from visual and other elements. For example, from Alice in Wonderland we can take the playing cards and the chess pieces.
6.	How can I respond to an Artist in my photography work?	I can take ideas for composition, colour, props and staging
7.	What does narrative mean?	Narrative is the storytelling element in a photographic work.
8.	What is the definition of context?	The circumstances that form the meaning of an idea. In your GCSE project, the context is your theme, such as 'Alice in wonderland.'

Geography

CQ	Question	Answer
1	What is urbanisation?	Increase in number of people living in a town or city
2	What are the two causes of urbanisation?	Rural-urban migration and internal growth
3	Where is the most rapid urbanisation happening?	NEEs and LICs
4	What is a megacity?	City with over 10 million people.
5	There were only two megacities in the world in 1950. Where were they?	New York City and Tokyo
6	Where is the highest concentration of megacities found today?	Asia
9	What is rural-urban migration?	Movement of people from the countryside to towns or cities
10	What are push factors?	Reasons why people leave an area.
11	What are pull factors?	Reasons why people choose to live in an area.
12	Give one push factor causing rural-urban migration in LICs	One of the following: <ul style="list-style-type: none"> • Natural disaster • Civil war • Lack of jobs outside farming • Lack of piped water • Lack of electricity
13	Give one pull factor causing rural-urban migration in LICs.	One of the following: <ul style="list-style-type: none"> • Better services such as schools • Better paid jobs • 'Bright lights' of the city • Reliable source of food
14	What is internal growth?	Population growth in a city due to a higher birth rate than death rate
15	One consequence of rapid urbanisation in LICs is the growth of informal housing. What is this?	Housing built on land that does not belong to the people building on it
16	One example of informal housing is a squatter settlement. What is this?	A collection of makeshift homes on illegally sourced land
17	Give one impact of living in a squatter settlement.	One of the following: <ul style="list-style-type: none"> • Poor infrastructure such as water • Children may leave education to support families • Disease spreads easily • Crime is common • Not recognised by government
35	Where is Birmingham located?	In the West Midlands region of the UK
36	Give one reason why Birmingham is locally important.	One of the following: <ul style="list-style-type: none"> • Jaguar Land Rover and MG Rover employ local people • Queen Elizabeth Hospital provides 1000 beds for the local community

		<ul style="list-style-type: none"> • 366 primary schools • 161 secondary schools • 6 universities
37	Give one reason why Birmingham is nationally important.	<p>One of the following:</p> <ul style="list-style-type: none"> • Second largest GDP in UK • Centre for UK transport network • Birmingham International Airport allowing UK nationals to travel abroad • 42% of UK conference and exhibition trade occurs in city
38	Give one reason why Birmingham is internationally important.	<p>One of the following:</p> <ul style="list-style-type: none"> • Jaguar Land Rover and MG Rover export vehicles to other countries • Cadburys chocolate made here and exported to other countries • 60,000 international students attend Birmingham universities
39	What is national migration?	<ul style="list-style-type: none"> • Movement of people from other places within the same country.
40	What is international migration?	<ul style="list-style-type: none"> • Movement of people from other countries.
41	Where is international migration into Birmingham from?	Caribbean, Southern Asia and Eastern Europe
43	Why does Birmingham have high amounts of migration from Pakistan?	Second largest Pakistani community in UK which attracts many to move to join family and friends
56	Birmingham has suffered from poor transport provision. What challenges does this face for the city?	Poor air quality and congestion
57	Which strategy has Birmingham City Council launched to make the city more sustainable?	Birmingham Transport Plan
58	What is the Birmingham Transport Plan introducing into the city?	Blue cycle lands, extension of the Midlands Metro, Birmingham Clean Air Zone and Sprint Bus Priority Corridor
59	Give one reason why the Birmingham Transport Plan is sustainable.	<p>One of the following:</p> <ul style="list-style-type: none"> • Less accidents for cyclists • Reduction of cars in the city centre • Reduction of air pollution from cars • People who cycle will be healthier • Easier to commute to jobs • Midlands Metro encouraged businesses into the city centre • More jobs in construction • Planting of trees by bus corridor encourages biodiversity
60	Where is Rio de Janeiro located?	South coast of Brazil in South America
61	What is the geography of Rio de Janeiro like?	Mountains to the north west and sea to the south east of the city

62	Give one reason why Rio de Janeiro is locally important.	<p>One of the following:</p> <ul style="list-style-type: none"> • Provides jobs in tourism for locals • Free healthcare at 14 main hospitals • Largest public school network in the world with 1000 schools • Home to 12 universities
63	Give one reason why Rio de Janeiro is nationally important.	<p>One of the following:</p> <ul style="list-style-type: none"> • Goods can be imported for Brazil through the Port of Rio de Janeiro • 5% of Brazils GDP produced through manufacturing in Rio de Janeiro • Centro area home to most of Brazils banks • Largest companies in Brazil have their headquarters in Rio de Janeiro • Home to main production of Brazilian TV
64	Give one reason why Rio de Janeiro is internationally important.	<p>One of the following:</p> <ul style="list-style-type: none"> • Hosts world events such as World Cup and Olympics • Tourist attraction for international tourists • Port of Rio de Janeiro allows China and US to export goods to Brazil • Rio de Janeiro International Airport allows foreign workers to do visit the city for business
65	Where is international migration into Rio de Janeiro from?	Portugal, South Korea and China
66	Why is most international migration into Rio de Janeiro from Portugal?	Brazil used to be a Portuguese colony which attracts many older people from Portugal to retire to Rio de Janeiro as Portuguese is the main language
67	Where is national migration into Rio de Janeiro from?	Northeast Region of Brazil
68	What is the Northeast Region of Brazil like?	Poor and rural
69	Give one push factor causing rural-urban migration from the Northeast Region of Brazil to Rio de Janeiro.	<p>One of the following:</p> <ul style="list-style-type: none"> • Frequent drought • Literacy rate is only 25% • High levels of unemployment • Farming is only option • Wages are usually less than \$2 per day • Drug cartels exploit farmers • Lack of infrastructure such as piped water
70	Give one pull factor causing rural-urban migration from the Northeast Region of Brazil to Rio de Janeiro.	<p>One of the following:</p> <ul style="list-style-type: none"> • Better access to services such as hospitals • High range of jobs in the city

		<ul style="list-style-type: none"> Better entertainment such as nightlife and carnivals
71	Give one way international migration has affected Rio de Janeiro's character.	<p>One of the following:</p> <ul style="list-style-type: none"> Strengthened Portuguese language Strengthened Roman Catholic church as most Portuguese migrants are Roman Catholic <p>Feijoada which is a Portuguese dish is now national dish of Brazil</p>
72	Give one way national migration has affected Rio de Janeiro's character.	<p>One of the following:</p> <ul style="list-style-type: none"> Growth of favelas City is growing outwards onto hillside High amounts of under 35 year olds <p>Wider rich poor divide</p>
73	Where is Copacabana in Rio de Janeiro?	Wealthy neighbourhood next to Copacabana beach
74	Where is Rocinha in Rio de Janeiro?	Favela build on steep hillside overlooking city
80	Give one challenge created by favela neighbourhoods in Rio de Janeiro.	<p>One of the following:</p> <ul style="list-style-type: none"> Disease spreads easily Infant mortality rate is 50 per 1000 Limited waste collection 10% do not have access to piped water 50% lack proper sanitation 30% have no electricity Residents tap into electricity illegally causing power cuts Poor quality houses collapse in landslides
81	Give one challenge created by poor waste disposal in Rio de Janeiro.	<p>One of the following:</p> <ul style="list-style-type: none"> Diarrheal diseases common Rivers are biologically dead Raw sewage has polluted sea surrounding Rio de Janeiro
82	Which strategy has the Rio de Janeiro State Government used to make the city more sustainable?	Favela Bairro Project
83	What did the Favela Bairro Project do?	<p>One of the following:</p> <ul style="list-style-type: none"> Gave residents access to credit to buy materials to improve homes Hillsides secured Roads were paved and widened Water supply and drainage system put in place Services such as day-care and adult education classes introduced Pacifying Policy Unit set up
84	Give one reason why the Favela Bairro Project made Rio de Janeiro more sustainable.	<p>One of the following:</p> <ul style="list-style-type: none"> Less disease

		<ul style="list-style-type: none"> • Infant mortality rate decreased • Almost all homes made from concrete and brick • Most dangerous homes on hillslopes removed or replaced • Most houses have basic sanitation • More homes connected to electricity • People living in favelas make up two thirds of tourism sector
85	<p>Give one reason why the Favela Bairro Project made Rio de Janeiro less sustainable.</p>	<p>One of the following:</p> <ul style="list-style-type: none"> • People lacked construction skills and some homes did not improve • New infrastructure was no maintained • Pacifying Police Unit removed crime lords who had kept order • Pacifying Police Unit took bribes • Project cost \$2 billion of taxpayer money

Energy Stores Core questions

	Question	Answer
1	What is a kinetic energy store?	Energy an object has because it is moving
2	What is a gravitational energy store?	Energy an object has because it has been raised up high
3	What is a thermal energy store?	Energy an object has because of the movement of its particles
4	What is a chemical energy store?	Energy stored in a fuel, food or battery because of the chemical bonds
5	What is an elastic energy store?	Energy stored in an object because it has been stretched or squashed
6	What is a nuclear energy store?	Energy stored in the atomic nucleus
7	State 3 ways energy can be transferred between objects	Light (electromagnetic radiation) sound, electric current
8	Define "specific heat capacity"	The energy needed to heat 1kg by 1 degree centigrade
9	What is "dissipation"?	When energy spreads out and can't be used
10	What is a "closed system"?	A group of objects which energy is prevented from leaving or entering
11	What happens to the amount of energy in a closed system?	It remains constant
12	Give the formula for efficiency	Efficiency = Useful energy out/ total energy in
13	What is an "energy resource"?	An energy store that can be transferred usefully
14	What is a renewable energy resource?	An energy resource that can be replenished and won't run out
15	What is a non-renewable energy resource?	An energy resource that can't be replenished
16	State 7 renewable energy resources	Wind, tidal, hydroelectric, wave, solar, geothermal, biomass
17	State 3 non-renewable energy resources	Coal, crude oil, natural gas
18	What is a fossil fuel?	A fuel made over millions of years from dead plants and animals
19	State 3 fossil fuels	Coal, crude oil, natural gas
20	What is "power"?	Rate of energy transfer
21	What is the formula for gravitational potential energy?	GPE = mgh
22	What are is the unit for energy?	joules (J)
23	What is the formula for kinetic energy?	KE = $\frac{1}{2}mv^2$
24	What is the formula relating energy, power and time?	P = E/t
25	What is the unit of power?	watts (W)

Infection and Response Core questions

	Question	Answer
1	What is a pathogen?	Microorganisms that cause infectious (communicable) disease.
2	State the 4 types of pathogens.	<ul style="list-style-type: none"> • Virus • Bacteria • Protists • Fungi

3	State 3 ways pathogens can be spread.	<ul style="list-style-type: none"> • Direct contact • Air • Water
4	How do viruses cause harm?	They live and reproduce inside cells, causing cell damage.
5	How do bacteria cause harm?	They produce toxins that damage tissues and make us feel ill.
6	What are protists?	Single celled eukaryotes.
7	State the three viral diseases you need to know about.	<ul style="list-style-type: none"> • Measles • HIV • Tobacco mosaic virus.
8	How does rose black spot affect plants?	Leaves drop off, limiting photosynthesis.
9	State the type of pathogen which causes malaria.	Protists.
10	Define the term vector.	Organism which transmits an infectious pathogen without being infected itself.
11	How is transmission of gonorrhoea different to salmonella?	Gonorrhoea is a sexually transmitted disease.
12	State 4 ways to reduce or prevent disease.	<ul style="list-style-type: none"> • Being hygienic. • Destroying vectors. • Isolate infected individuals. • Vaccination.
13	What is meant by 'non-specific defence systems'?	All types of pathogen are defended against in the same way – 1 st line of defence.
14	State 4 nonspecific defence systems in the human body.	<ul style="list-style-type: none"> • Skin • Nose • Trachea • Stomach
15	State the 3 ways white blood cells defend against pathogens.	<ul style="list-style-type: none"> • Phagocytosis. • Antibody production. • Antitoxin production.
16	State what all pathogens have on their surfaces.	Antigens
17	What are antibodies?	Special proteins produced by white blood cells that attach to antigens.
18	What is an antitoxin?	A chemical that neutralises toxins.
19	What is vaccination?	Using a weakened version of a pathogen to create immunity within the body.
20	What are painkillers?	Drugs that relieve symptoms.
21	What are antibiotics?	Drugs that kill bacteria. They have <u>no</u> effect on viruses.
22	What causes bacterial resistance?	Mutations in DNA of bacteria.

23	State 2 ways you can help prevent bacterial resistance.	Stop over-prescribing drugs. Finish the whole course of antibiotics.
24	State where aspirin originated from.	Willow.
25	State where digitalis originated from.	Foxgloves.
26	State where Penicillin originated from and who discovered it	Mould (<i>Penicillium</i>). Alexander Fleming.
27	What are drugs tested on in the first stages of testing?	Human cells and tissues
28	What are drugs tested on in stage 2 of testing?	Animals.
29	What are these drugs being tested for during drug testing?	Toxicity, efficacy (whether it works) and dose.
30	What is a double-blind test?	1 group of patients are given a placebo and 1 group are given the real drug but neither doctor nor patient know.
31 (T)	What are monoclonal antibodies?	Specific antibodies produced from a single clone of cells.
32 (T)	What is hybridoma?	The fusion of tumour cells with mouse B-lymphocytes.
33 (T)	State a use of monoclonal antibodies in industry.	Pregnancy tests - binding HCG in the urine.
		Laboratories - measuring levels of hormones and chemicals in blood to detect pathogens.
		Research - identifying specific molecules by binding them with dyes.
		Radioactive substances - delivering toxic drugs to the cancer cells.
34 (T)	State some ways plant diseases can be detected.	Stunted growth. Spots on leaves. Rot. Discolouration. Malformation of stems or leaves. Presence of pests.
35 (T)	What is chlorosis?	Caused by magnesium deficiency – magnesium is needed to make chlorophyll.

Quantitative Chemistry

	Core question	Knowledge
1	What is an atom?	The smallest part of an element that can still be recognised as that element.

2	What is a compound?	A substance made when two or more elements are chemically bonded together.
3	What is an element?	A substance made up of only one type of atom. An atoms of the same element have the same number of protons.
4	What is an electron?	A tiny particle with a negative charge. Electrons orbit the nucleus of atoms or ions in shells.
5	What is electronic structure?	A set of numbers to show the arrangement of electrons in their shells (or energy levels).
6	What is a neutron?	A dense particle found in the nucleus of an atom. It is electrically neutral, carrying no charge.
7	What is the nucleus (of an atom)?	The very small and dense central part of an atom that contains protons and neutrons.
8	What is a proton?	A tiny positive particle found inside the nucleus of an atom.
9	What is the mass number?	The number of protons plus neutrons in the nucleus of an atom.
10	What is atomic number?	The number of protons (which equals the number of electrons) in an atom. It is sometimes called the proton number.
11	What is an ion?	A charged particle produced by the loss or gain of electrons.
12	What is an isotope?	Atoms that have the same number of protons but different number of neutrons.
13	What is a product?	A substance made as a result of a chemical reaction.
14	What is a reactant?	A substance we start with before a chemical reaction takes place.
15	What is a word equation?	A way of describing what happens in a chemical reaction by showing the names of all reactants and the products they form.
16	What is a balanced symbol equation?	A symbol equation in which there are equal numbers of each type of atom (element) on either side of the equation.
17	What are the state symbol?	The abbreviations used in balanced symbol equations to show if reactants and products are solid (s), liquid (l), gas (g) or dissolved in water (aq).
18	What is the law of conservation of mass?	The total mass of the products formed in a reaction is equal to the total mass of the reactants.

19	What is relative atomic mass A_r ?	The average mass of the atoms of an element compared with carbon-12 (which is given a mass of exactly 12). The average mass must take into account the proportions of the naturally occurring isotopes of the element.
20	What is relative formula mass M_r ?	The total of the relative atomic masses, added up in the ratio shown in the chemical formula, of a substance.
21	What is Avogadro's constant?	The number of atoms, molecules, or ions in a mole of any substance (i.e., 6.02×10^{23} per mol).
22	What is concentration?	The amount of a substance dissolved in a given volume of liquid.
23	What is a mole?	6.02×10^{23} atoms or molecules of a substance. (Remember a mole of an element has a mass of its formula mass in grams).
24	What is titration?	A method for measuring how much of liquid A is needed to react with a particular volume of liquid B.
25	What is yield?	The mass of product that a chemical reaction produces.
26	What is the equation used to calculate percentage yield?	$\text{Percentage Yield} = \frac{\text{Actual mass of product}}{\text{Theoretical mass}} \times 100$