Gloucester Academy

Year 9

Summer Homework

Knowledge Organiser

Knowledge is power. Information is liberating.

Summer Homework - Instructions

For your Summer Homework you need to do self quizzing in your homework practice book using the information in this booklet

Each week you have one set of words to complete. In other words you will do one page of self-quizzing per week.

If you run out of space in your practice book you may complete it on paper.

This will be checked on your return to school.

Please remember to learn the information properly by memorising the information before writing it down, then marking in purple pen and redoing it if you got it wrong.

Please also remember to fill a whole side of A4, so if you get half way down, just redo it until you reach the bottom of the page.

Year 9s - Maths - Week 1

	Piece of Information	Answer
1	Integer	A whole number, this can be positive, negative or zero.
2	Prime number	A number that only has two factors, 1 and itself.
3	Multiple	The times table for the given number.
4	Factor	Numbers that divide into a given number. Decimals are not included.
5	Lowest Common Multiple (LCM)	The smallest number that can be divided by all the numbers in the question.
6	Highest Common Factor (HCF)	The biggest number that will divide into all the numbers in the question.
7	Square numbers	1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, ...
8	Cube numbers	1, 8, 27, 64, 125, 216, 343, 512, 729, 1000, 1331, 1728, ...
9	Area of a circle	πr^2 , where r is the radius.
10	Circumference of a circle	$2\pi r$, where r is the radius or πd , where d is the diameter.

Year 9s - Maths - Week 2

		Answer
11	Area of a trapezium	$\frac{a+b}{2} \times h$, where a and b are the parallel sides, and h is the perpendicular height.
12	$Sin\Theta = \frac{Opposite}{Hypotensue}$	Trig function for right angled triangles when you know two sides and an angle. This links the opposite and the hypotenuse sides.
13	$Cos\Theta = \frac{Adjacent}{Hypotensue}$	Trig function for right angled triangles when you know two sides and an angle. This links the adjacent and the hypotenuse sides.
14	$Tan\Theta = \frac{Opposite}{Adjacent}$	Trig function for right angled triangles when you know two sides and an angle. This links the opposite and the adjacent sides.
15	$\frac{360°}{n}$	Exterior angle of a regular polygon, where n is the number of sides.
16	(n - 2) x 180°	Sum of interior angles of any polygon, where n is the number of sides.
17	Volume of a prism	Area of the cross-section x length.
18	Volume of a cylinder	$\pi r^2 \times h$, where r is the radius and h the height.
19	Surface area of a cylinder	$2\pi rh + 2\pi r^2$, where r is the radius and h the height.
20	$c^2 = a^2 + b^2$	Pythagoras' Theorem, to find an unknown side when two sides of a right angled triangle are known.

Year 9s - English - Week 3

	Piece of Information	Answer
1	Propaganda	Convinced young soldiers to sign up - that fighting in WWI was noble. Also presented Germans as evil monsters.
2	The realities of war	The poor treatment of soldiers, the pointless deaths (futility of war), lack of care from commanding officers and the fact the Germans weren't evil monsters.
3	Stanhope	The Captain of an infantry company. He's a young man, and has seen three years of combat. He has gained the respect of his men, who see him as a brave leader, but he's also seen as something of an alcoholic.
4	Free verse	Poetry that does not rhyme or have a regular rhythm.
5	Enjambment	When a poet continues a sentence without a pause beyond the end of a line. When used there will not be any form of punctuation at the end of a line in the poem.
6	Democracy	A form of government in which the people have the authority to choose their own leaders.
7	Fascism	A political system based on a very powerful leader who takes control of the country's social and economic life.
8	Goldstein	The symbolic leader of the Brotherhood, in Orwell's 1984, and author of a book about the Party.
9	Dictator	A ruler with total power over a country, typically one who has obtained control by force.
10	Surveillance	Close observation, especially of a suspected spy or criminal.

Year 9s - English - Week 4

11	World War 1	1914-1918. Considered one of the most brutal and bloodiest conflicts in history.
12	Shell Shock	Nowadays known as 'post-traumatic stress disorder.' Soldiers were effectively paralysed with fear.
13	Robert Graves	A soldier who served three times in the first world war and was eventually discharged after his third wounding. His poem challenges the idea that war is full of glory and honour.
14	Osborne	Second-in-command to Stanhope. He's a bit older than the other soldiers, but he is well-liked. He helps keep Stanhope grounded and takes care of him when he's too drunk.
15	Enjambment	When a poet continues a sentence without a pause beyond the end of a line. When used there will not be any form of punctuation at the end of a line in the poem.
16	Caesura	When a poet uses punctuation to create a pause in the middle of a line of poetry.
17	In medias res	A poem that starts in the middle of the action. E.g. A poem starting with an explosion.
18	George Orwell	George Orwell, was an English novelist, essayist, journalist and critic. His work is characterised by social criticism and opposition to totalitarianism.
19	Censorship	The suppression of any parts of books, films or news that are considered obscene, politically unacceptable, or a threat to security.
20	Indoctrinate	To teach (a person or group) to accept a set of beliefs without question.

Year 9s - Science - Week 5

	Piece of Information	Answer
1	Independent variable	A factor that we change.
2	Dependent variable	A factor that we measure.
3	Control variable	A factor that we keep the same.
4	Apparatus	The equipment used in a practical/investigation.
5	Mean	Total of all of the values ÷ The number of values.
6	Repeatable.	When after repetition, under the same conditions by the same investigator, gives similar results.
7	Reproducible	A measurement is reproducible if the investigation is repeated by another person, or by using different equipment or techniques, and the same results are obtained.
8	Precise	Precise measurements are ones in which there is very little spread about the mean value
9	Accurate	A measurement result is considered accurate if it is judged to be close to the true value.
10	Diffusion	Diffusion is the spreading out of the particles resulting in a net movement from an area of higher concentration to an area of lower concentration.

Year 9s - Science - Week 6

11	Osmosis	The movement of water molecules across a selectively permeable membrane from a region of higher water concentration to a region of lower water concentration.
12	Homeostasis	Homeostasis is the regulation of the internal conditions of a cell or organism to maintain optimum conditions for function in response to internal and external changes.
13	Photosynthesis	A reaction in plants that uses light energy to produce glucose and release chemical energy.
14	Cellular respiration	A chemical reaction that occurs in the mitochondria of your cells to release energy.
15	Ohm's law	$V = I \times R$
16	Kinetic Energy	The energy stored by a moving object. It can be calculated with $KE = \frac{1}{2}mv^2$
17	Gravitational Potential Energy	The energy stored at height. It can be calculated with $GPE = mgh$
18	Elastic Potential Energy	The energy stored in a stretched object. It can be calculated with $EPE = \frac{1}{2}k^2$
19	Work	The energy applied when a force causes an object to move. Work = force x distance.
20	Power	The rate at which energy is transferred. It can be calculated with Power = current x potential difference