# Year 9 Knowledge Organiser M2 2019 (Core)

"Knowledge is a treasure, but practice is the key to it." — Lao Tzu

Sapere Aude

#### What is a Knowledge Organiser?

A Knowledge Organiser (KO) is a set of key facts or information that you need to know and be able to recall to help you master a unit or topic. Each subject has created a list of key facts which covers the basic information that you are expected to learn.

#### Do I need to bring my Knowledge Organiser to school every day?

Yes, your KO should be brought in every day like your community card and your planner. Your teachers may well want you to use your KOs in lessons. They are yours forever and you may want to annotate or highlight on them when your teacher talks about things in them. They will certainly be used in lessons when you have a cover teacher and you can use them whenever you find yourself with some spare time.

## What do I do with my Knowledge Organiser at the end of term?

You should store it, along with previous KOs, in your folder. You are building a revision guide; the information in your KOs are things you will need to continue to know and understand.

#### What happens if I don't complete my KO homework each night?

Your mentor will check your KO homework each day using the Homework Timetable and stamp the page for that day to acknowledge successful completion. If you have not completed your KO homework satisfactorily (as set out below) then you will have a compulsory 30 min prep session that same day. If you fail to attend the prep session you will spend the next day in ALC.

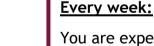
## What happens if I lose my Knowledge Organiser?

If you lose your KO you will be required to purchase a new one via finance.

## Beginning of each half term:

New Knowledge Organisers (KO) are given to you by your mentors. These are to be stored in your KO folder and brought to school every day.





You are expected to show evidence of your learning in each subject. Teachers will start lessons with a "Do Now" activity based around the KOs. Mentors will give house points each morning for outstanding KO homework.

I came to give life - life in all its fullness High Expectations - No Excuses



#### Last week of half term:

You are tested in each subject to show how much knowledge you have learnt.



# How to Self-Quiz

Your Knowledge Organiser is a vital document. It contains all the key things from your lessons that you will need to work on committing to your long-term memory.

The best method when you are working on memorising things from your Knowledge Organiser is to self-quiz using the look, cover, write, check technique. Use your self-quizzing book for this.

Look	Read the piece of information carefully, two or three times.
Cover	Now cover up what you have just read.
Write	Now try and write down the piece of information you have just read.
Check	Did you write the information down correctly? If not, correct it with a red pen and then repeat!



Each night you should complete one full page (minimum) of selfquizzing in your quiz book. You should write the title (subject) and date at the top of each page. There should be no gaps on the page except for one line underneath the title. You should tick any correct answers and correct any incorrect answers in red pen.

Use the RAG column to self-assess how confident you are on each line once you have completed your self-quizzing.

	History 9th Tuly
	History 9 July
1	Malinul - The Daid reliance between 1066 and 1600 x
+,	Medieval - The period of history between 1066 and 1600 × Medieval - The period of history between 1066 and 1500
2	Chronology - The order that things haplen in time. Putting things in
	Chronological order is putting things in the order they happened.
3.	Century - A period of 1000 years × Century - A period of 100 years.
4.	Decade - A period of 100 years. × Decade - A partial of 10 years.
S.	Anglo Saxons - The People who lunce in England before the Norman
	Longuest in 1066.
6,	E duind the Confessor - King of Endand between MAZ to 1066. He dies
0	Without any children and So there is no heir. /
7.	Without any children and So live isno heir. A Heir - Aperon who is legally allowed to take over power and froteity
~	from someone when they all.
8,	Hardd Godwinson - Angle-Saxon Earl of Wessex, one of the most forced
	Men in England. Hardd's sister was named to King John Hardd was a
	broke and respected solder with a tough streak. *
	Hardel Godwinson - Anglo-Saxon, Earl of Wesser, One of the most
_	powerful run in England. Hardek Sister was married to King Educat Harda Was a brane and refercted Soldier with a tough Streak.
9.	Hand Hadas - William King of War law William and Williams I
h	Harald Hardrada - Villey Kiry of Norwey, Hittor come Villingshad ruled Britan before Post search Warrior in Europe - Hardrada
0	Means pard ruler and his nichraine was the Ridhless, Harold Was Syllorta
	by Tostig Hadd Godwinson's brother who warded revenge,
0.	William of Normany - Duke of Normany, William came grown a trabling Burilly
	William of Normany - Duke of Normany, Villiam care gran a fighting parily. fle was a brave Soldier. Edwards Son, Edward had Wild in Normany gron
	1016-1042. Edward had Sufforedly fromised that William Should become
	Kind OF Northew. " William of Normandry - Duke of Normander France.
	William Came from a publicity family He was a prover boldier. Edwardy Courses,
	Edward had lured in Norminday from 10/6-10/12. Edward had Supposedly
11	promised, that william Should become hing of England
011.	10A2 - Edward the Congession becomes prince X
	10A2 - Edward the Congession becomes Minuy,



I came to give life - life in all its fullness High Expectations - No Excuses



Week	Activity	Monday	Tuesday	Wednesday	Thursd	ay	Friday, Saturday, Sunday
1 4 <sup>th</sup> Nov	Self Quizzing	English Lines 1 - 10 (Language) Lines 1 - 12 (Literature)	Science (Separate) Lines 1 - 15 Science (Combined) Lines 1 - 10 R.S. Lines 1-2	History Lines 1 - 9 Geography Lines 1 - 4	Art Business Computing Drama Food Tech Geography H & SC Music Music Tech PE Psychology Spanish	1 - 8 1 - 3 1 - 5 1 1 - 8 1 - 4 1-5 1 - 5 1 - 5 1 - 5 1 - 2 1 - 10 1 - 43	Maths (H) Lines 1-8 Maths (F) Lines 1-7 Sports Science (Core PE) Lines 1 Sports Leaders (Core PE) Lines 1 - 5
2 11 <sup>th</sup> Nov	Self Quizzing	English Lines 11 - 24 (Language) Lines 13 - 18 (Literature	Science (Separate) Lines 16 - 29 Science (Combined) Lines 11 - 20 R.S. Lines 3-4	History Lines 10 - 18 Geography Lines 5 - 13	Art Business Computing Drama Food Tech Geography H & SC Music Music Tech PE Psychology Spanish	9 - 16 4 - 7 6 - 10 2 - 7 9 - 16 5 - 13 6-10 6 - 10 6 - 11 3 - 5 11-20 44-59	Maths (H) Lines 9-15 Maths (F) Lines 8-15 Sports Science (Core PE) Lines 2 Sports Leaders (Core PE) Lines 6 - 10
		English Lines 25 -	Science (Separate) Lines 30 -	History Lines 19 -	Art Business Computing Drama	17 - 24 8 - 12 11 - 15 8 - 11	Maths (H) Lines 16- 24 Maths (F) Lines 16- 24

#### The Bishop of Winchester Academy Weekly Homework Grid 2019 - 2020 Year 9, Michaelmas 2 - Commencing Monday 4<sup>th</sup> November



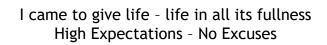
3

18th

Nov

Self

Quizzing



27

Geography

Lines 14 -

23

Food Tech

Geography

H & SC

Music

Music

Tech

PE

17 -

24

14 -

23

11-15

11 -

19 12 -

14

6 - 8

**Sports** 

Science

(Core PE)

Lines 3 - 4

**Sports** 

Leaders

(Core PE)

Lines 11 20

43

Science

(Combined)

Lines 21 -

30

R.S.

Lines 5-6

34

(Language)

Lines 19 -

24

(Literature



Week	Activity	Monday	Tuesday	Wednesday	Thursc	lay	Friday, Saturday, Sunday
					Psychology Spanish	21-30 60-90	
					Art	25 - 32	
					Business	13 - 17	Maths (H) Lines 25-
			Science		Computing	16 - 20	<mark>33</mark> Maths (F)
		English	(Separate) Lines 44 -	History	Drama	12 - 20	Lines 25- 32
4	Self	Lines 35 - 40	58 Science	Lines 27 - 36	Food Tech	25 - 32	Sports Science
25 <sup>th</sup> Nov	Quizzing	(Language) Lines 25 -	(Combined) Lines 31 -	Geography Lines 24 -	Geography	24 - 32	(Core PE) Lines 5
		30 (Literature	40 R.S. Lines 7-8	0 32 S.	H & SC Music	16-18 20 - 35	Sports Leaders (Core PE)
					Music Tech	15 - 19	Lines 21 - 25
					PE	9 - 10 31-35	
					Psychology Spanish	91- 111	
			Science (Separate) Lines 59 - 72		Art	33 - 40	
					Business	18 - 22	Maths (H)
					Computing	21 - 24	Lines 34- 47
		English		History	Drama	21 - 34	Maths (F) Lines 33-
5	C - LE	Lines 41 - 49		Lines 37 - 45	Food Tech	33 - 40	42 Sports
2 <sup>nd</sup> Dec	Self Quizzing	(Language) Lines 31 - 34	Science (Combined) Lines 41 -	Geography Lines 33 -	Geography	33 - 37 19-23	Science (Core PE)
		(Literature)	49 R.S.	37	H & SC Music	36 - 46	<mark>Lines 6</mark> Sports Leaders
			Lines 9-10		Music Tech	20 - 27	(Core PE) Lines 26 -
					PE	11 - 15	<mark>30</mark>
					Psychology	36 - 40	
					Spanish	1-111	



		ENGLISH LANGUAGE - YEAR 9 - M2 Unseen Fiction	RAG
1.	Emotive Language	Language that makes the reader experience a certain emotional response to the writing, e.g. The neglected child sat shivering in the corner; he was abandoned and unloved.	
2.	Hyperbole	Over-the-top exaggeration for effect, e.g. I have never seen such outrageous behaviour in all of my life.	
3.	Dialect	Different spoken forms of the same language which give the reader an insight into a character's personality and intellect.	
4.	Motif	A recurring element or symbol in a text (or work of art), the repetition of which contributes to establishing a theme. E.g. "rotten applefeverish heat plague of fliessickened trees" The repeated references to illness could symbolise the moral sickness within the narrative.	
5.	Alliteration	The repetition of the same sounds (mainly consonants) usually at the beginning of words to add emphasis to the feeling the sentence creates.	
6.	Juxtaposition	The fact of two things being seen or placed close together with contrasting effect e.g. romantic Romeo and blazing Tybalt.	
7.	Oxymoron	A figure of speech in which apparently contradictory terms appear in conjunction e.g. The silence was deafening.	
8.	Listing	A number of connected items written one after the other e.g. "Phoebe saw that the garden was over-flowing with foxgloves, lupins, daisies, sun-flowers and pretty weeds of all shapes and heights." The listing gives a vivid sense of the garden's abundance and beauty.	
9.	Intensifier	Used to emphasise meaning e.g. She was <b>so</b> upset; I felt <b>extremely</b> sorry for her.	
10.	Anaphora	Repetition of the same word or words at the beginning of successive phrases or sentences e.g. Love is the question. Love is the answer. Love is everything.	
11.	Simple Sentence	A sentence consisting of only one clause with a subject and a verb e.g. Joe waited for the train. Joe = subject. Waited = verb.	
12.	Compound Sentence	A sentence with more than one subject which is joined by a conjunction e.g. Joe waited for the train but the train was late. Joe & train = subjects. Waited & was = verbs. But = conjunction.	
13.	Sentence	A sentence containing a main clause and subordinate clause e.g. Joe waited for the train as he was going to London. Joe waited for the train = main clause. As he was going to London = subordinate clause.	
14.	Minor Sentence	A word, phrase or clause functioning as a sentence but lacking the grammatical completeness and independence of a full sentence e.g. Fire! More coffee?	





		ENGLISH LANGUAGE - YEAR 9 - M2 Unseen Fiction	RAG
15.	Main Clause	A main clause can stand alone as a sentence (it makes sense on its own) e.g. The man was happy.	
16.	Subordinate Clause	A clause, typically introduced by a conjunction, that forms part of and is dependent on a main clause (it does not make sense on its own) e.g. as it was his birthday.	
17.	Embedded Clause	A subordinate clause breaks up a main clause to add information into a sentence. It does this by using commas e.g. The man, who was daring, was going skydiving.	
18.	Analytical Verbs	seem, tend, look like, appear to be, think, believe, doubt, be sure, indicate, suggest, assume, consider, hypothesize, claim, presume	
19.	Modal Verbs	will, must, would, may, might, could	
20.	Adverbs of Frequency	often, sometimes, usually	
21.	Modal Adverbs	certainly, definitely, clearly, probably, possibly, perhaps, conceivably	
22.	Modal Adjectives	certain, definite, clear, probable, possible	
23.	Modal Nouns	assumption, possibility, probability	
24.	Exposition	The setting of the scene for the reader; this could be a description of setting or the <b>backstory</b> of a character.	
25.	Climax	An exciting or tense part of the text.	
26.	Resolution	The conclusion of the narrative, where conflicts are resolved or meaning is revealed.	
27.	Enigma	A person or thing that is mysterious or difficult to understand.	
28.	Circular Narrative	The idea that the narrative <b>begins at the end or the middle of events</b> , often beginning with the climax and ending in the same place it began.	
29.	Foreshadow	A warning or indication of (a future event).	
30.	Flashback	A part of a novel set in a time earlier than the main story.	
31.	Zoom In	Focus the reader's attention on a more detailed description to provide them with more information. This may be linked with a setting, character or plot development.	
32.	Zoom Out	Draw the reader's attention away from something specific to provide them with a general overview of something. This may be linked with a setting, character or plot development.	





		ENGLISH LANGUAGE - YEAR 9 - M2 Unseen Fiction	RAG
33.	Perspective Change	A literary tool, which serves as a lens through which readers observe characters, events and happenings. A writer may narrate the story from his perspective, or from a character's perspective. Its purpose is to make the voice of a writer distinctive from other writers.	
34.	Apostrophe for Possession (')	Used to show that one thing belongs to or is connected to something e.g. Joe's shoe; the dog's bowl; the girls' bedroom; the children's playground.	
35.	Apostrophe for Contraction (')	Used to show that a letter is missing. It often joins two words together e.g. you are becomes you're; does not becomes doesn't; it is becomes it's.	
36.	Colon (:)	A colon precedes an explanation or list. The shop sells everything I need: bread, milk, tomatoes and baked beans.	
37.	Semi Colon (;)	This indicates a pause, typically between two main clauses, that is more pronounced than that indicated by a comma e.g. It was a hot day; there was going to be trouble.	
38.	Parenthesis: Brackets, Dashes or Commas	A word or phrase inserted as an explanation or extra information e.g. Skip (the guard dog) had done a fantastic job.	
39.	Ellipsis ( )	Used in writing to create suspense.	
40.	Structuring	Foremost, Primarily, Firstly, Secondly, Thirdly, Lastly, Finally	
41.	Adding	Moreover, Furthermore, In addition, As well as, What is more, Besides, In any case, Additionally, Equally, Likewise, It could be argued	
42.	Contrast	On the other hand, Alternatively, However, Nevertheless, Whereas, Whilst, Conversely, Although, Despite, On the contrary	
43.	Compare	Likewise, Similarly, Equally, As well as, Equivalent to	
44.	Generalising	On the whole, In general, Broadly speaking	
45.	Cause/Effect	Therefore, As a result, Consequently, Because, Hence, Since, Until	
46.	Exemplifying	For example, For instance, This can be seen	
47.	Linking	For, Likewise, Similarly, In much the same way, Just like, Correspondingly	
48.	Time	As soon as, At the same time, Meanwhile, Eventually, Initially, Afterwards, Subsequently, Henceforth	





		ENGLISH LANGUAGE - YEAR 9 - M2 Unseen Fiction	RAG
49.	Summing Up	In conclusion, In summary, Thus, Accordingly, To sum up, Overall	





		ENGLISH LITERATURE - YEAR 9 - M2 Of Mice and Men	RAG
	Key Quotation		
1.	Appearance	"The first man sharp, strong features."	
2.	Character	"Hide till I come for you. Say that over."	
3.	Dreams	"We'd jus' live there. We'd belong there."	
4.	View of	"He ain't bright. Hell of a nice fella, but he ain't bright. I've	
	Lennie	known him for a long time."	
5.	View of	"I'm scared. You gonna have trouble with that Curley guy."	
	Curley		
6.	View of	The men view Curley's Wife as a "tart". George refers to her as	
	Curley's Wife	a "rattrap" and "jail bait" during the novel. "She's gonna make	
		a mess."	
	Kan Onetationa		
-	Key Quotations		
7.	Appearance	"dragging his feet a little, the way a bear drags his paws."	
8.	Character	"I didn't wanta hurt him."	
9.	Dreams	"An' I could tend the rabbits." Unlike other things, Lennie	
		always remembers "the rabbits" which tells us it is Lennie's	
		main ambition and his personal dream.	
10.	View of	"because I got you to look after me, and you got me to look	
10.	George	after you"	
11.	View of	"I didn't wanta hurt him."	
	Curley		
12.	View of	"Lennie sat in the barn and looked at the little dead puppy."	
	Animals		
13.		s - Curley's wife	
15.	Appearance	"She has full, rouged lips and wide-spaced eyes, heavily made up."	
14.	Character	She seeks attention from the men on the ranch. "Ain't I got a	
		right to talk to nobody?"	
15.	Dreams	"An' a guy tol' me he could put me in the pitchers"	
16.	View of	"He ain't a nice fella."	
17.	Curley View of the	Curlov's wife insults the all of the men on the ranch by referring	
17.	Ranchers	Curley's wife insults the all of the men on the ranch by referring to them as "bindle stiff"s, meaning tramps.	
18.	View of	"They left all the weak ones here." She is cruel to the men left	
	Crooks,	behind at the ranch. The irony is that she is also describing	
	Lennie and	herself as a "weak one".	
	Candy		
4.0	Key Quotation	-	
19.	Appearance	"His arms gradually bent at the elbows and his hands closed into fists."	
20.	Character	"Curley's like a lot of little guys. He hates big guys."	
21.	View of	"He glanced coldly at George and then at Lennie [Lennie]	
	Lennie	shifted his feet nervously."	



ENGLISH LITERATURE - YEAR 9 - M2				
		Of Mice and Men	RAG	
22.	View of Curley's Wife	"Curley burst into the room 'Seen my wife?' he demanded."		
	Key Quotation	s - Crooks		
23.	Appearance	"A stable buck and a cripple"		
24.	Character	"He kept his distance and demanded other people kept theirs"		
25.	Dreams	Crooks dreams of being seen as equal to everyone else. "This is just a nigger talkin' so it don't mean nothin'".		
26.	View of Loneliness	"Books ain't no goodA guy goes nuts if he ain't got nobody."		
27.	Curley's Wife	Curley's wife threatens to have Crooks lynched. "Crooks had reduced himself to nothing He said, 'Yes, ma'am,' and his voice was toneless."		
28.	View of Lennie	"Sometimes he talks, and you don't know what the hell he's talking about. Ain't that so?' He leaned forward, boring Lennie with his deep eyes."		
29.	View of George	"You got George. You know he's goin' to come back."		
	Key Quotation	s - Candy		
30.	Appearance	"The door opened and a tall, stoop-shouldered old man came in. He was dressed in blue jeans and he carried a big push- broom"		
31.	Character	Candy worries about the future. "They'll can me purty soon. Jus' as soon as I can't swamp out no bunk houses they'll put me on the county."		
32.	Dreams	"Maybe if I give you guys my money, you'll let me hoe the garden even after I ain't no good at it. An' I'll wash dishes an' little chicken stuff like that."		
33.	View of Curley's Wife	But a change came over old Candy. "You ain't wanted here."		
34.	View of his Dog	"I had him since he was a pup." His dog is his companion and his equivalent of a friend.		





SEPARATE SCIENCE - YEAR 9 - M2				
-		rgy, Organisation and the Digestive System		
1.	Conservation of Energy	Energy cannot be created or destroyed.		
2.	Dissipated	The energy that is not usefully transferred and stored in less		
	Energy /	useful ways.		
	Dissipation of			
	Energy			
3.	Efficiency	Useful energy transferred by a device ÷ total energy supplied to the device.		
4.	Elastic	Energy stored in an elastic object as a result of it being		
	Potential	deformed. For example, a stretched spring.		
	Energy			
5.	Hooke's Law	The extension of a spring is directly proportional to the force applied, as long as its limit of proportionality is not exceeded.		
6.	Input Energy	Energy supplied to a device.		
7.	Power	The energy transformed or transferred per second. The unit of power is the watt (W).		
8.	Spring Constant	Force per unit extension of a spring.		
9.	Useful Energy	Energy transferred to where it is wanted in the way that is		
		wanted.		
10.	Wasted Energy	Energy that is not usefully transferred.		
11.	Work	The energy transferred by a force. Work done (joules, J) =		
		force (newtons, N) x distance moved in the direction of the		
		force (metres, m)		
12.	Black Body	The radiation emitted by a perfect black body (a body that		
	Radiation	absorbs all the radiation that hits it).		
13.	Infrared	Electromagnetic waves between visible light and microwaves		
	Radiation	in the electromagnetic spectrum.		
14.	Specific Heat	Energy needed to raise the temperature of 1 kg of a		
	Capacity	substance by 1 °C.		
15.	Thermal	Property of a material that determines the energy transfer		
	Conductivity	through it by conduction.		
16.	Biofuel	Any fuel taken from living or recently living materials, such as		
		animal waste.		
17.	Carbon-Neutral	A biofuel from a living organism that takes in as much carbon		
		dioxide from the atmosphere as is released when the fuel is		
		burned.		
18.	Geothermal	Energy released by radioactive substances deep within the		
40	Energy	Earth.		
19.	National Grid	The network of cables and transformers used to transfer		
		electricity from power stations to consumers (i.e. homes,		
20	Nuclear Fuel	shops, offices, factories etc.)		
20.	Nuclear Fuel	Substance used in nuclear reactors that releases energy due to nuclear fission reactor.		
21.	Nucleus	Tiny positively charged object composed of protons and		
<b>∠</b> 1.		neutrons at the centre of every atom.		
1		inclusions at the centre of every atom.	Î	





SEPARATE SCIENCE - YEAR 9 - M2			
		rgy, Organisation and the Digestive System	
22.	Reactor Core	The thick steel vessel used to contain fuel rods, control rods	
		and the moderator in a nuclear fission reactor.	
23.	Renewable	Energy from natural sources that is always being replenished	
	Energy	so it never runs out.	
24.	Active Site	The site on an enzyme where the reactants bind.	
25.	Amino Acids	Molecules made up of carbon, hydrogen, oxygen and nitrogen	
		that are the building blocks of proteins.	
26.	Amylase	Enzyme that speeds up the digestion of starch into sugars.	
27.	Bile	Neutralises stomach acid to give a high pH for the enzymes	
		from the pancreas and small intestine to work well. It is not	
		an enzyme.	
28.	Carbohydrases	Enzymes that speed up the breakdown of carbohydrates into	
		simple sugars.	
29.	Carbohydrates	Molecules that contain only carbon, hydrogen and oxygen.	
		They provide the energy for the metabolism and are found in	
		foods such as rice, potatoes and bread.	
30.	Catalyst	A substance that speeds up the rate of another reaction but is	
		not used up or changed itself.	
31.	Denatured	The breakdown of the molecular structure of a protein so it	
		no longer functions.	
32.	Differentiate	The process where cells become specialised for a particular	
		function.	
33.	Digestive	Organ system where food is digested and absorbed.	
	System		
34.	Enzymes	Biological catalysts, usually proteins.	
35.	Fatty Acids	Part of the structure of a lipid molecule.	
36.	Glycerol	Part of the structure of a lipid molecule.	
37.	Lipase	Enzymes that speed up the breakdown of lipids into fatty	
		acids and glycerol.	
38.	Lipids	Include fats and oils and are found in foods such as butter,	
		olive oil, and crisps. They are made of carbon, hydrogen and	
		oxygen.	
39.	Metabolism	The sum of all the reactions taking place in a cell or the body	
		of an organism.	
40.	Organ	An aggregation (collection) of different tissues working	
		together to carry out specific functions.	
41.	Organ System	A group of organs that work together to carry out specific	
10	<b></b>	functions and form organisms.	
42.	Proteases	Enzymes that speed up the breakdown of proteins into amino	
42	Dreate	acids.	
43.	Proteins	Molecules that contain carbon, hydrogen, oxygen, and	
		nitrogen and are made of long chains of amino acids. They	
		are used for building the cells and tissues of the body and to	
	Cimple Current	form enzymes	
44.	Simple Sugars	Small carbohydrate units, for example glucose.	
45.	Tissue	A group of specialised cells with a similar structure and	
		function.	





SEPARATE SCIENCE - YEAR 9 - M2			
		rgy, Organisation and the Digestive System	
46.	Aorta	The artery that leaves the heart from the left ventricle and	
		carries oxygenated blood to the body.	
47.	Arteries	Blood vessels that carry blood away from the heart. They	
		usually carry oxygenated blood and have a pulse.	
48.	Atria	The upper chambers of the heart.	
49.	Capillaries	The smallest blood vessels. They run between individual cells	
	-	and have a wall that is only one cell thick.	
50.	Coronary	The blood vessels that supply oxygenated blood to the heart	
	Arteries	muscle.	
51.	Double	The circulation of blood from the heart to the lungs is	
	Circulatory	separate from the circulation of blood from the heart to the	
	System	rest of the body.	
52.	Epidermal	The name given to cells that make up the epidermis or outer	
		layer of an organism.	
53.	Guard Cells	Surround the stomata in the leaves of plants and control their	
		opening and closing.	
54.	Haemoglobin	The red pigment that carries oxygen around the body in the	
		red blood cells.	
55.	Palisade	The upper layer of the mesophyll tissue in plant leaves made	
	Mesophyll	up of closely packed cells that contain many chloroplasts for	
		photosynthesis.	
56.	Phloem	The vascular tissue in plants which conducts sugars and other	
		metabolic products downwards from the leaves.	
57.	Plasma	The clear yellow-liquid part of the blood that carries	
		dissolved substances and blood cells around the body.	
58.	Platelets	Fragments of cells in the blood that play a vital role in the	
		clotting mechanism of the blood.	
59.	Pulmonary	The large blood vessel that takes deoxygenated blood from	
	Artery	the right ventricle of the heart to the lungs.	
60.	Pulmonary	The large blood vessel that carries oxygenated blood from the	
_	Vein	lungs back to the left atrium of the heart.	
61.	Red Blood Cells	Biconcave cells that contain the red pigment haemoglobin	
		and carry oxygen around the body in the blood.	
62.	Spongy	The lower layer of mesophyll tissue in plant leaves that	
	Mesophyll	contains some chloroplasts and many large air spaces to give	
		a big surface area for the exchange of gases.	
63.	Statins	Drugs used to lower blood cholesterol levels and improve the	
	••••••	balance of high- to low-density lipoproteins in the blood.	
64.	Stent	A metal mesh placed in a blocked or partially blocked artery.	
•		They are used to open up the blood vessel by the inflation of	
		a tiny balloon.	
65.	Translocation	The movement of sugars from the leaves to the rest of the	
		plant through the phloem.	
66.	Transpiration	The loss of water vapour from the leaves of plants through	
55.		the stomata when they are opened to allow gas exchange for	
		photosynthesis. It involves evaporation from the surface of	
		the cells and diffusion through the stomata.	
	1	the cetts and dimusion through the stornata.	1





	Ene	SEPARATE SCIENCE - YEAR 9 - M2 rgy, Organisation and the Digestive System	RAG
67.	Urea	The waste product formed by the breakdown of excess amino acids in the liver.	
68.	Veins	Blood vessels that carry blood away from the heart. They usually carry deoxygenated blood and have valves to prevent the backflow of blood.	
69.	Vena Cava	The large vein that brings deoxygenated blood from the body into the heart.	
70.	Ventricles	Chambers of the heart that contract to force blood out of the heart.	
71.	White Blood Cells	Blood cells involved in the immune system of the body. They engulf pathogens and make antibodies and antitoxins.	
72.	Xylem	The non-living transport tissue in plants that transports water from the roots to the leaves and shoots.	





		COMBINED SCIENCE - YEAR 9 - M2	RAG
	Companyation	Eco School Part 2	
1.	Conservation of Energy	Energy cannot be created or destroyed.	
2.	Dissipated	The energy that is not usefully transferred and stored in less	
	Energy /	useful ways.	
	Dissipation of		
	Energy		
3.	Efficiency	Useful energy transferred by a device ÷ total energy supplied	
		to the device.	
4.	Input Energy	Energy supplied to a device.	
5.	Power	The energy transformed or transferred per second. The unit of	
_		power is the watt (W).	
6.	Useful Energy	Energy transferred to where it is wanted in the way that is	
		wanted.	
7.	Wasted	Energy that is not usefully transferred.	
	Energy		
8.	Work	The energy transferred by a force. Work done (joules, J) =	
		force (newtons, N) x distance moved in the direction of the	
		force (metres, m).	
9.	<b>Boiling Point</b>	Temperature at which a pure substance boils or condenses.	
10.	Density	Mass per unit volume of a substance.	
11.	•	The temperature at which a pure substance freezes.	
42	Point	The energy of the negatistic of a substance due to their	
12.	Internal	The energy of the particles of a substance due to their	
	Energy	individual motion and positions.	
13.	Latent Heat	The energy transferred to or from a substance when it changes	
		its state.	
14	Malting Daint	Tomporature at which a pure substance molts or freezes	
14.	Melting Point	Temperature at which a pure substance melts or freezes	
		(solidifies).	
15.	Physical	A change in which no new substances are produced.	
	Change		
16.	Alternating	Electric current in a circuit that repeatedly reverses its	
	Current (a.c.)	direction.	
17.	Direct Current	Electric current in a circuit that is in one direction only.	
-	(d.c.)		
18.	Earth Wire	The wire in a mains cable used to connect the metal case of an	
-		appliance to earth.	
19.	Fuse	A fuse contains a thin wire that melts and cuts the current off	
		if too much current passes through it.	





		COMBINED SCIENCE - YEAR 9 - M2 Eco School Part 2	RAG
20.	Live Wire	The mains wire that has a voltage that alternates (between +325 V and -325 V in Europe).	
21.	Neutral Wire	The wire of a mains circuit that is earthed at the local substation so its potential is close to zero.	
22.	Plugs	A plug has an insulated case and is used to connect the cable from an appliance to a socket.	
23.	Step-Down Transformer	Electrical device used to step-down the size of an alternating potential difference.	
24.	Step-Up Transformer	Electrical device used to step-up the size of an alternating potential difference.	
25.	Three-Pin Plug	A three-pin plug has a live pin, a neutral pin and an earth pin.	
26.	Biofuel	Any fuel taken from living or recently living materials, such as animal waste.	
27.	Carbon- Neutral	A biofuel from a living organism that takes in as much carbon dioxide from the atmosphere as is released when the fuel is burned.	
28.	Geothermal Energy	Energy released by radioactive substances deep within the Earth.	
29.	National Grid	The network of cables and transformers used to transfer electricity from power stations to consumers (i.e. homes, shops, offices, factories etc.)	
30.	Nuclear Fuel	Substance used in nuclear reactors that releases energy due to nuclear fission.	
31.	Nucleus	Tiny positively charged object composed of protons and neutrons at the centre of every atom.	
32.	Reactor Core	The thick steel vessel used to contain fuel rods, control rods and the moderator in a nuclear fission reactor.	
33.	Renewable Energy	Energy from natural sources that is always being replenished so it never runs out.	
34.	Continuous Data	Data that can take any value.	
35.	Correlation	An apparent link or relationship between two factors.	
36.	Discrete Data	Data that can only take certain values.	
37.	Gradient (of a straight line graph)	A measure of the slope of a straight line on a graph.	





		COMBINED SCIENCE - YEAR 9 - M2 Eco School Part 2	RAG
38.	Line of Best Fit	A straight or curved line that represents the general trend of data. An equal number of data points should be above and below the line of best fit.	
39.	Mean	The arithmetical average of a series of numbers.	
40.	Median	The middle value of a list of numbers.	
41.	Mode	The number that occurs most often in a set of data.	
42.	Order of Magnitude	A comparison of the size of values. Two values are the same order of magnitude if their difference in size is small in comparison to other values being compared.	
43.	Percentage	A number expressed as a fraction of 100.	
44.	Qualitative Data	Data that is descriptive or categorical.	
45.	Quantitative Data	Data that is numerical or a measurement.	
46.	Ratio	A way of comparing two or more quantities, showing how many times one quantity is contained within the other.	
47.	SI System of Units	A system of units for physical quantities that are considered the standard units.	
48.	Significant Figures (s.f.)	The important digits within a number. All non-zero digits are significant. Zeros may be significant if followed by another non-zero digit.	
49.	Standard Form	A way of displaying large and small numbers.	





		MATHS - YEAR 9	- M2	RAG
		Higher Tier		NAG
1.	Population	The whole group you are interested in.	e.g. the population of the UK.	
2.	Sample	A sample is a small selection of items from a population. A sample is biased if individuals or groups from	A sample could be selecting 10 students from a year group at school.	
		the population are not represented in the sample.		
3.	Sample Size	The larger a sample size, the closer those probabilities will be to the true probability.	A sample size of 100 gives a more reliable result than a sample size of 10.	
4.	Biased sample	A sample that does not properly represent the population.		
5.	Random Sample	A sample where each member of the population has an equal chance of being selected for the sample.		
6.	Hypothesis	A hypothesis is a statement that might be true or false but you haven't got enough evidence to support it either way YET. A hypothesis must be testable.	For example: Children who go to bed earlier score higher on their class tests.	
7.	Data Cycle	The data Cycle has five parts to it: 1. Planning 2. Collecting Data 3. Processing and Representing data 4. Interpreting results 5. Communicating results clearly and evaluating methods		
8.	Constraints	During the planning phase you should consider the constraints of your investigation: • Time • Cost • Convenience • Ethical issues • Confidentiality	For example, people might not want to answer personal questions about their age or where they live.	



		MATHS - YEAR 9 Higher Tier			RAG
9.	Primary	Data which you have collected yourself.		do a survey on your their favourite food.	
10.	Secondary	Data which someone else has collected.		use census data to al trends in salaries.	
11.	Quantitative	Numerical data	For example, how have or how tall y		
12.	Qualitative	Descriptive data (using words not numbers)	For example, your	favourite food.	
13.	Discrete	Numerical (quantitative) data which can be counted	For example, how have.	many siblings you	
14.	Continuous	Numerical (quantitative) data which can be measured	For example, your	mass or height.	
15.	Grouped	Data that has been bundled	Foot length, <i>l</i> , (cm)	Number of children	
		in to categories.	10 ≤ <i>l</i> < 12	5	
			12 ≤ <i>l</i> < 17	53	
		Seen in grouped frequency tables, histograms, cumulative frequency etc.			
16.	Expression	A mathematical statement written using symbols, numbers or letters.	3x + 2 or 5y <sup>2</sup>		
17.	Equation	A statement showing that two expressions are equal.	2y - 17 = 15		
18.	Identity	An equation that is true for all values of the variables An identity uses the symbol: ≡	$2x \equiv x + x$		
19.	Formula	Shows the relationship between two or more variables.	Area of a rectangl or A= L x W	e = length x width	
20.	Expand	To expand a bracket, multiply each term in the bracket by the expression outside the bracket.		= 3x + 21	
21.	Factorise	The reverse of expanding. Factorising is writing an expression as a product of terms by 'taking out' a common factor.	6x - 15 = 3(2x - 5) common factor.	5), where 3 is the	



		MATHS - YEAR 9		RAG
		Higher Tier		
22.	Solve a linear equation Inverse	To find the answer/value of something. Use inverse operations on both sides of the equation (balancing method) until you find the value for the letter. Opposite	Solve $2x - 3 = 7$ Add 3 on both sides 2x = 10 Divide by 2 on both sides x = 5 The inverse of addition is subtraction.	
		opposite	The inverse of multiplication is division. The inverse of cubing is cube rooting. The inverse of sine is sine <sup>-1</sup> .	
24.	Substitution	Replace letters with numbers. Be careful of $5x^2$ . You need to square first, then multiply by 5.	a = 3, b = 2  and  c = 5. Find: 1. $2a = 2 \times 3 = 6$ 2. $3a - 2b = 3 \times 3 - 2 \times 2 = 5$ 3. $7b^2 - 5 = 7 \times 2^2 - 5 = 23$	
25.	Rearranging Formulae	Use inverse operations on both sides of the formula (balancing method) until you find the expression for the letter.	Make x the subject of $y = \frac{2x-1}{z}$ Multiply both sides by z yz = 2x - 1 Add 1 to both sides yz + 1 = 2x Divide by 2 on both sides $\frac{yz + 1}{2} = x$ We now have x as the subject.	
26.	Writing Formulae	Substitute letters for words in the question.	Bob charges £3 per window and a £5 call out charge. C = 3N + 5Where N=number of windows and C=cost	
27.	Function Machine	Takes an input value, performs some operations and produces an output value.	INPUT x 3 + 4 OUTPUT	
28.	Function	A relationship between two sets of values.	$f(x) = 3x^2 - 5$ 'For any input value, square the term, then multiply by 3, then subtract 5'.	





		MATHS - YEAR 9 Higher Tier		RAG
29.	Function notation	f(x) x is the input value f(x) is the output value.	f(x) = 3x + 11 Suppose the input value is $x = 5$ The output value is $f(5) = 3 \times 5 + 11 = 26$	
30.	Inverse function	$f^{-1}(x)$ A function that performs the opposite process of the original function. 1. Write the function as $y =$ f(x) 2. Rearrange to make $x$ the subject. 3. Replace the $y$ with $x$ and the $x$ with $f^{-1}(x)$	$f(x) = (1 - 2x)^5$ . Find the inverse. $y = (1 - 2x)^5$ $\sqrt[5]{y} = 1 - 2x$ $1 - \sqrt[5]{y} = 2x$ $\frac{1 - \sqrt[5]{y}}{2} = x$ $f^{-1}(x) = \frac{1 - \sqrt[5]{x}}{2}$	
31.	Composite function	A combination of two or more functions to create a new function. fg(x) is the composite function that substitutes the function $g(x)$ into the function $f(x)$ . fg(x) means 'do g first, then f' gf(x) means 'do f first, then g'	$f(x) = 5x - 3, g(x) = \frac{1}{2}x + 1$ What is $fg(4)$ ? $g(4) = \frac{1}{2} \times 4 + 1 = 3$ $f(3) = 5 \times 3 - 3 = 12 = fg(4)$ What is $fg(x)$ ? $fg(x) = 5\left(\frac{1}{2}x + 1\right) - 3 = \frac{5}{2}x + 2$	
32.	Iteration	The act of repeating a process over and over again, often with the aim of approximating a desired result more closely. Recursive Notation: $x_{n+1} = \sqrt{3x_n + 6}$	$x_{1} = 4$ $x_{2} = \sqrt{3 \times 4 + 6} = 4.242640 \dots$ $x_{3} = \sqrt{3 \times 4.242640} \dots + 6$ $= 4.357576 \dots$	



		MATHS - YEAR 9 Higher Tier		RAG
33.	Iterative Method	To create an iterative formula, rearrange an equation with more than one x term to make one of the x terms the subject. You will be given the first value to substitute in, often called $x_1$ . Keep substituting in your previous answer until your answers are the same to a certain degree of accuracy. This is called converging to a limit. Use the 'ANS' button on your calculator to keep substituting in the previous answer.	Use an iterative formula to find the positive root of $x^2 - 3x - 6 = 0$ to 3 decimal places. $x_1 = 4$ Answer: $x^2 = 3x + 6$ $x = \sqrt{3x + 6}$ So $x_{n+1} = \sqrt{3x_n + 6}$ So $x_{n+1} = \sqrt{3x_n + 6}$ $x_1 = 4$ $x_2 = \sqrt{3 \times 4 + 6} = 4.242640 \dots$ $x_3 = \sqrt{3 \times 4.242640} \dots + 6$ $= 4.357576 \dots$ Keep repeating $x_7 = 4.372068 \dots = 4.372 (3dp)$ $x_8 = 4.372208 \dots = 4.372 (3dp)$ So answer is $x = 4.372 (3dp)$	
34.	Percentage Change	Difference Original × 100%	A games console is bought for £200 and sold for £250. % change = $\frac{50}{200} \times 100 = 25\%$	
35.	Fractions to Decimals	Divide the numerator by the denominator using the bus stop method.	$\frac{3}{8} = 3 \div 8 = 0.375$	
36.	Decimals to Fractions	Write as a fraction over 10, 100 or 1000 and simplify.	$0.36 = \frac{36}{100} = \frac{9}{25}$	
37.	Percentages to Decimals	Divide by 100	$8\% = 8 \div 100 = 0.08$	
38.	Decimals to Percentages	Multiply by 100	$0.4 = 0.4 \times 100\% = 40\%$	
39.	Fractions to Percentages	Percentage is just a fraction out of 100. Make the denominator 100 using equivalent fractions. When the denominator doesn't go in to 100, use a calculator and multiply the fraction by 100.	$\frac{3}{25} = \frac{12}{100} = 12\%$ $\frac{9}{17} \times 100 = 52.9\%$	



		MATHS - YEAR 9 Higher Tier		RAG
40.	Percentages to Fractions	Percentage is just a fraction out of 100. Write the percentage over	$14\% = \frac{14}{100} = \frac{7}{50}$	
41.	Increase or	100 and simplify. Non-calculator: Find the	Increase 500 by 20% (Non Calc):	
	Decrease by a Percentage	percentage and add or subtract it from the	10% of 500 = 50	
		original amount.	so 20% of 500 = 100	
		Calculator: Find the <b>percentage multiplier</b> and	500 + 100 = 600	
		multiply.	Decrease 800 by 17% (Calc):	
			100%-17%=83% 83% ÷ 100 = 0.83	
			$0.83 \times 800 = 664$	
42.	Percentage Multiplier	The <b>number</b> you <b>multiply</b> a quantity by to <b>increase or</b>	The multiplier for increasing by 12% is 1.12	
		decrease it by a percentage.	The multiplier for decreasing by 12% is 0.88	
			The multiplier for increasing by 100% is 2.	
43.	Reverse Percentage	Find the correct percentage given in the	A jumper was priced at £48.60 after a 10% reduction. Find its original price.	
		question, then work backwards to find 100%.	100% - 10% = 90%	
		Look out for words like	90% = £48.60	
		'before' or 'original'.	1% = £0.54	
	<u> </u>		100% = £54	
44.	Simple Interest	Interest calculated as a percentage of the original	£1000 invested for 3 years at 10% simple interest.	
		amount.	10% of £1000 = £100	
45	<b>F</b> (* 1		Interest = $3 \times \pounds 100 = \pounds 300$	
45.	Exponential Growth	When we multiply a number repeatedly by the same number $(\neq 1)$ , resulting in the number increasing by the same proportion each time.	1, 2, 4, 8, 16, 32, 64, 128 is an example of exponential growth, because the numbers are being multiplied by 2 each time.	
		The original amount can grow very quickly in exponential growth.		



		MATHS - YEAR 9 Higher Tier		RAG
46.	Exponential Decay	When we <b>multiply</b> a number <b>repeatedly</b> by the <b>same number</b> ( $0 < x < 1$ ), resulting in the number <b>decreasing by the same</b> <b>proportion</b> each time. The original amount can decrease very quickly in exponential decay.	1000, 200, 40, 8 is an example of exponential decay, because the numbers are being multiplied by $\frac{1}{5}$ each time.	
47.	Compound Interest	Interest paid on the original amount and the accumulated interest.	A bank pays 5% compound interest a year. Bob invests £3000. How much will he have after 7 years. $3000 \times 1.05^7 = \text{\pounds}4221.30$	





		MATHS - YEAR	9 - M2	DAC
		Foundation	Tier	RAG
1.	Hypothesis	A hypothesis is a statement that might be true or false but you haven't got enough evidence to support it either way YET. A hypothesis must be testable.	For example: Children who go to bed earlier score higher on their class tests	
2.	Data Cycle	The data Cycle has five parts to it: 6. Planning 7. Collecting Data 8. Processing and Representing data 9. Interpreting results 10. Communicating results clearly and evaluating methods		
3.	Constraints	During the planning phase you should consider the constraints of your investigation: • Time • Cost • Convenience • Ethical issues • Confidentiality	For example, people might not want to answer personal questions about their age or where they live.	
4.	Primary	Data which you have collected yourself	For example, you do a survey on your classmates about their favourite food.	
5.	Secondary	Data which someone else has collected	For example, you use census data to investigate national trends in salaries.	
6.	Quantitative	Numerical data	For example, how many siblings you have or how tall you are.	
7.	Qualitative	Descriptive data (using words not numbers)	For example, your favourite food.	



		MATHS - YEAR	9 - M2		DAG
		Foundation			RAG
8.	Discrete	Numerical (quantitative) data which can be counted	For example, how have.	many siblings you	
9.	Continuous	Numerical (quantitative) data which can be measured	For example, your	r mass or height.	
10.	Grouped	Data that has been	Foot length, <i>l</i> , (cm)	Number of children	
		bundled in to categories.	$10 \leqslant l < 12$ $12 \leqslant l < 17$	5 53	
		Seen in grouped frequency tables, histograms, cumulative frequency etc.	e.g. 5 children hat the $10 \le l < 12$ c	ve been grouped into ategory	
11.	Population	The whole group you are interested in.	e.g. the populatio	n of the UK	
12.	Sample	A sample is a small selection of items from a population. A sample is biased if individuals or groups from the population are not represented in the	A sample could be from a year group	e selecting 10 students at school.	5
13.	Sample Size	sample. The larger a sample size, the closer those probabilities will be to the true probability.	A sample size of 1 reliable result tha	00 gives a more In a sample size of 10.	
14.	Biased sample	A sample that does not properly represent the population.			
15.	Random Sample	A sample where each member of the population has an equal chance of being selected for the sample.			
16.	Expression	A mathematical statement written using symbols, numbers or letters.	3x + 2 or 5y <sup>2</sup>		
17.	Equation	A statement showing that two expressions are equal.	2y - 17 = 15		



		MATHS - YEAR	9 - M2	246
		Foundation	Tier	RAG
18.	Identity	An equation that is true for all values of the variables.	$2x \equiv x + x$ 2x is identical to $x + x$	
		An identity uses the symbol: ≡		
19.	Formula	Shows the relationship between two or more variables.	Area of a rectangle = length x width or A= L x W	
20.	Expand	To expand a bracket, multiply each term in the bracket by the expression outside the bracket.	3(x+7) = 3x + 21	
21.	Factorise	The reverse of expanding.	6x - 15 = 3(2x - 5), where 3 is the common factor.	
		Factorising is writing an expression as a product of terms by 'taking out' a common factor.		
22.	Solve	To find the answer/value of something. Use inverse operations on both sides of the equation (balancing method) until you find	Solve $2x - 3 = 7$ Add 3 on both sides 2x = 10 Divide by 2 on both sides x = 5	
		the value for the letter.		
23.	Inverse	Opposite	The inverse of addition is subtraction. The inverse of multiplication is division.	
24.	Substitution	Replace letters with numbers. Be careful of $5x^2$ . You need to square first, then multiply by 5.	<i>a</i> = 3, <i>b</i> = 2 and <i>c</i> = 5. Find: 1. $2a = 2 \times 3 = 6$ 2. $3a - 2b = 3 \times 3 - 2 \times 2 = 5$ 3. $7b^2 - 5 = 7 \times 2^2 - 5 = 23$	



		MATHS - YEAR		RAG
		Foundation		
25.	Writing Formulae	Substitute letters for words in the question.	Bob charges £3 per window and a £5 call out charge.	
			C=3N+5	
			Where N=number of windows and C=cost	
26.	Simplifying Expressions	Collect 'like terms'. Be careful with negatives. $x^2$ and x are not like terms.	2x + 3y + 4x - 5y + 3 = 6x - 2y + 3 $3x + 4 - x^{2} + 2x - 1 = 5x - x^{2} + 3$	
27.	x times x	The answer is $x^2$ not $2x$ .	Squaring is multiplying by itself, not by 2.	
28.	$p \times p \times p$	The answer is $p^3$ not $3p$ .	If p = 2, then $p^3$ = 2x2x2=8, not 2x3 = 6	
29.	p + p + p	The answer is 3p not $p^3$ .	If p = 2, then $2+2+2 = 6$ , not $2^3 = 8$	
30.	Function Machine	Takes an input value, performs some operations and produces an output value.	INPUT X 3 + 4 OUTPUT	
31.	Function	A relationship between two sets of values.	$f(x) = 3x^2 - 5$ 'For any input value, square the term, then multiply by 3, then subtract 5'.	
32.	Function notation	f(x) x is the input value f(x) is the output value.	f(x) = 3x + 11 Suppose the input value is $x = 5$ The output value is $f(5) = 3 \times 5 + 11 = 26$	
33.	Percentage Change	DifferenceOriginal× 100%	A games console is bought for £200 and sold for £250.	
			% change = $\frac{50}{200} \times 100 = 25\%$	
34.	Fractions to Decimals	Divide the numerator by the denominator using the bus stop method.	$\frac{3}{8} = 3 \div 8 = 0.375$	
35.	Decimals to Fractions	Write as a fraction over 10, 100 or 1000 and simplify.	$0.36 = \frac{36}{100} = \frac{9}{25}$	





		MATHS - YEAR	9 - M2	
		Foundation	Tier	RAG
36.	Percentages to Decimals	Divide by 100	$8\% = 8 \div 100 = 0.08$	
37.	Decimals to Percentages	Multiply by 100	$0.4 = 0.4 \times 100\% = 40\%$	
38.	Fractions to Percentages	Percentage is just a fraction out of 100. Make the denominator 100 using equivalent fractions. When the denominator doesn't go in to 100, use a calculator and multiply the fraction by 100.	$\frac{3}{25} = \frac{12}{100} = 12\%$ $\frac{9}{17} \times 100 = 52.9\%$	
39.	Percentages to Fractions	Percentage is just a fraction out of 100. Write the percentage over 100 and simplify.	$14\% = \frac{14}{100} = \frac{7}{50}$	
40.	Increase or Decrease by a Percentage	Non-calculator: Find the percentage and add or subtract it from the original amount. Calculator: Find the percentage multiplier and multiply.	Increase 500 by 20% (Non Calc): 10% of 500 = 50 so 20% of 500 = 100 500 + 100 = 600 Decrease 800 by 17% (Calc): 100%-17%=83% 83% ÷ 100 = 0.83 0.83 x 800 = 664	
41.	Percentage Multiplier	The <b>number</b> you <b>multiply</b> a quantity by to <b>increase or</b> <b>decrease</b> it by a <b>percentage</b> .	The multiplier for increasing by 12% is 1.12 The multiplier for decreasing by 12% is 0.88 The multiplier for increasing by 100% is 2.	





	MATHS - YEAR 9 - M2 Foundation Tier		RAG	
42.	Reverse	Find the correct	A jumper was priced at £48.60 after a	
	Percentage	percentage given in	10% reduction. Find its original price.	
		the question, then work backwards to find 100%	100% - 10% = 90% 90% = £48.60	
		Look out for words like <b>'before'</b> or <b>'original'</b>	1% = £0.54 100% = £54	





		PE: SPORTS LEADERS - YEAR 9 - M2 Planning a Lesson	RAG
	Roles, Skills and	Behaviours of a Sports Leader:	
1.	Skills	Skills are the things that a group or an individual can do.	
	SKIIIS	Sporting example: Being able to communicate instructions	
		to participants in a physical session.	
2.	Verbal	Any communication that uses words to share information with	
	communication	others.	
3.	Non-verbal	Includes the use of visual cues, such as body language,	
	communication	distance, appearance, facial expressions and touch.	
4.	Listening	After asking a sports performer a question, a response would	
		be requested from the teacher/coach.	
5.	Leadership		
	roles	School Sports	
		Assistant coaches captains	
		coaches	
		Fitness	
		instructor Sports Leaders coaches	
		National club	
		Sports PE coaches	
		mentors teacher coaches	
6.	Behaviours	Behaviours are what an individual can use to make them:	
		<ul> <li>More effective at performing skills</li> </ul>	
		<ul> <li>Stand out from the crowd</li> </ul>	
		Become more employable	



		PE: SPORTS LEADERS - YEAR 9 - M2 Planning a Lesson	RAG
7.	Leadership behaviours	Professional conduct Dedication Commitment Destive attitude	
8.	Organisation	Organisation of equipment/resources of each lesson planned, as well as ability to structure and reflect on activites delivered.	
9.	Knowledge	<ul> <li>Including:</li> <li>The technical and tactical demands of the sport.</li> <li>The specific fitness requirements for the sport.</li> <li>The laws, rules and regulations of the sport.</li> <li>The treatment of basic sports injuries and first-aid techniques.</li> </ul>	
10.	Language	Possessing a clear voice, using language that is appropriate for the performers you are working with. Effective language strategies include: • Rapport between and with performers • A sense of respect between performers	
	Leadership Style		
11.	Autocratic	Leader makes all decisions and tells sports performers what to do and how to do it.	
12.	Democratic	Leader involves sports performers in the decision making process, but makes the final decision on what is to be delivered in the session.	
13.	Laissez-faire	Performers make the decisions. Sports leaders are used as mentors.	
14.	Intrinsic motivation	Performers are motivated by the pleasure of activity and the satisfaction they feel from participating.	
15.	Extrinsic motivation	Performers are motivated by external factors rather than the sport, such as a prize.	
16.	Humour	Performers' enjoyment is increased when they know a leader is approachable.	
17.	Personality	Defined as the characteristics that make an individual unique.	
18.	Introverts	Individuals who do not actively seek excitement, but require high concentration levels and accuracy in delivery.	





		PE: SPORTS LEADERS - YEAR 9 - M2 Planning a Lesson	RAG
19.	Extroverts	Individuals who actively seek excitement, but require low	
		levels of concentration.	
20.	Confidence	The belief that a sports leader can have the ability to stand	
		and deliver a lesson, and direct performers towards achieving	
		a target.	
	Planning Sports	Activities:	
21.	Participants	Age, gender, group size, group ability, medical information,	
	•	needs of participants.	
22.	Learning	Results of the lesson planned; what happened and the aims	
_	outcomes	and objectives met in the lesson.	
23.	Health & safety	Procedures intended to prevent accident or injury in	
		workplaces or public environments.	
24.	Warm up	To prepare the performer both physically and mentally.	
	•		
25.	Main	Developing a skill or fitness component that was covered as a	
	component	warm up or starter drill.	
26.	Conditioned	Special rules or restrictions that support the development of	
	game	a skill or technique in a game situation.	
27.	Cool down	Returning the body to pre-exercise condition.	
28.	Feedback/	Information given by yourself or others which reflect on your	
	plenary	performance.	
29.	SMART targets	Specific	
		Measurable	
		Achievable	
		Realistic	
20	Domiona	Timed     Obstacles and from participating in a cost of	
30.	Barriers	Obstacles preventing someone from participating in a sport or	
		physical activity.	





		PE: SPORTS SCIENCE - YEAR 9 - M2 Reducing the Risk of Sports Injuries	RAG
	LO3: Know how	to respond to injuries within a sporting context	
1.	Acute and chronic injuries	<ul> <li>Acute injuries         <ul> <li>Caused as a result of a sudden trauma</li> <li>Result in immediate pain, usually swelling with a loss of function</li> </ul> </li> <li>Chronic injuries         <ul> <li>Known as overuse injuries - caused by continuous stress on an area</li> <li>Develop gradually over a period of time</li> </ul> </li> </ul>	
2.	Types of injuries	<ul> <li>Soft tissue injuries e.g. sprains, strains</li> <li>Overuse injuries e.g. tendonitis, tennis elbow, golfer's elbow, shin splints</li> <li>Fractures e.g. open, closed</li> <li>Concussion e.g. signs and symptoms of concussion</li> <li>Abrasions e.g. grazes and cuts</li> <li>Contusions e.g. bruises</li> <li>Blisters</li> <li>Cramp</li> <li>Injuries related to children e.g. Osgood Schlatter's disease</li> </ul>	
3.	How to respond to injuries and medical conditions in a sporting context	<ul> <li>SALTAPS - assessment routine - See, Ask, Look, Touch, Active, Passive, Strength</li> <li>RICE - Rest, Ice, Compress, Elevate</li> <li>Stretching and massage</li> <li>Taping, bandaging, splints, slings</li> <li>Hot and cold treatments</li> <li>Action plan to respond to injuries and medical conditions in a sporting context</li> </ul>	
4.	Emergency Action Plans (EAP) in a sporting context	<ul> <li>Emergency personnel e.g. first responder, first aider, coach</li> <li>Emergency communication e.g. telephone, emergency numbers, emergency services</li> <li>Emergency equipment e.g. first aid kits, evacuation chair</li> </ul>	
		to respond to common medical conditions	
5.	Symptoms of common medical conditions	<ul> <li>Asthma - coughing, wheezing, shortness of breath, tightness in chest</li> <li>Diabetes - increased thirst, going to the toilet lots, extreme tiredness, weight loss, Type 1 (insulin dependent), Type 2 (non-insulin dependent)</li> <li>Epilepsy e.g. seizures</li> </ul>	



		PE: SPORTS SCIENCE - YEAR 9 - M2 Reducing the Risk of Sports Injuries	RAG
6.	How to respond to these common medical conditions	<ul> <li>Ensure awareness of any participants' medical conditions prior to commencing physical activity</li> <li>Asthma e.g. reassurance, inhaler, emergency services (if needed)</li> <li>Diabetes e.g. insulin, hypoglycaemia, give the individual sugar</li> <li>Epilepsy e.g. emergency care plans in place for the individual</li> <li>Know when to refer the performer on to a professional and how to do so</li> </ul>	





		RS - YEAR 9 - M2	
		Theme : Peace & Conflict	RAG
1.	Christian Views on Just War	Then Jesus said to him, "Put your sword back into its place. For all who take the sword will perish by the sword." (Matthew NT)	
		"Do not think that I have come to bring peace to the earth. I have not come to bring peace, but a sword." (Matthew NT)	
2.	Muslim Views on Just War	"Let those of you who are willing to trade the life of the world for the life to come, fight in God's way. To anyone who fights in God's way, whether killed of victorious, we shall give a great reward." (Qur'an)	
		"Know that the evil of war is swift, and its taste bitter". (Hadith)	
3.	Key Words on Just War	Lesser Jihad: the outward struggle to defend one's faith, family and country from threat.	
		<i>Just War:</i> a war which meets internationally accepted criteria for fairness; follows traditional Christian rules for a just war and is now accepted by all other religions.	
		<i>Thomas Aquinas</i> : medieval theologian who has influenced Christian thinking. He developed the just war theory.	
4.	Christian views on Holy War and Religion as a Cause of	"You have heard it said that it was said to the people long ago. You shall not murder, and anyone who murders will be subject to judgement. But I tell you that anyone who is angry with a brother or sister will be subject to judgement." (Matthew, NT)	
	Violence	"Put your sword back in its place," Jesus said, "for all who draw the sword shall die by the sword". (Matthew, NT)	
5.	Muslim Views on Holy War	"Fight in the way of Allah those who fight you but do not transgress. Indeed. Allah does not like transgressors." <b>(Qur'an)</b>	
	and Religion as		





	RS - YEAR 9 - M2				
		Theme : Peace & Conflict	RAG		
	a Cause of Violence	"And if they cease, then indeed, Allah is Forgiving and Merciful." (Qur'an )			
6.	Key Words on Holy War	<i>Holy War:</i> fighting for a religious cause or God, probably controlled by a religious leader.			
		<i>The Battle of Badr</i> : 624 CE was a key battle in the early days of Islam and a turning point in Muhammad's struggle with his opponents to take control of Mecca.			
7.	Christian Views on Pacifism	"Blessed are the peacemakers, for they shall be called children of God." (Matthew, NT) "We believe that as Christians we are called to follow the way of Jesus in loving our enemies and becoming peacemakers. We work to transform our Anglican communion and the world to overcome those factors that lead to war within and between nations." (Anglican Pacifist Fellowship) "Do not kill" ( Ten Commandments, OT )			
8.	Muslim Views on Pacifism	<ul> <li>"Fighting has been ordained for you, though it is hard for you. You may dislike something although it is good for you, or like something because it is bad for you. God knows and you do not." (Qur'an)</li> <li>"But if they (non-believers) incline towards peace, you (Prophet) must also incline towards it, and put your trust in God: He is the All Hearing, the All Knowing". (Qur'an)</li> </ul>			





		RS - YEAR 9 - M2 Theme : Peace & Conflict	RAG
	Key Words on Pacifism	<i>Pacifism</i> : the belief of people who refuse to take part in war and any other form of violence.	
		<i>Conditional Pacifism</i> : the belief that war and violence is wrong except in some situations.	
		Quakers: A denomination of Christians known for being pacifist.	
		<b>Peacemaker:</b> a person who works to establish peace in the world or in a certain part of it.	
		<i>Peace Making</i> : the action of trying to establish peace.	
		Desmond Doss: only conscientious objector to win a medal.	
9.	Christian Responses to	'Love your neighbour as yourself'	
	Victims of War	<i>Christian Aid:</i> Christian charity that works internationally with victims of war.	
10.	Muslim Responses to	"Whoever saved a life, it would be as if they saved the life of all mankind" (Quran 5:32)	
	Victims of War	<i>Muslim Hands:</i> A charity that works internationally with orphans.	



