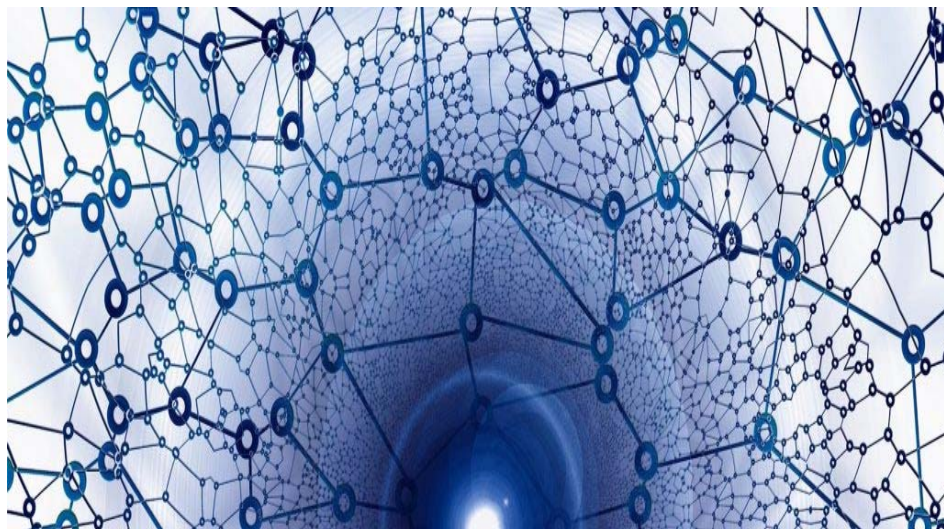


# Year 9 - Cycle Two

## 100% Book



Name: \_\_\_\_\_

Tutor group: \_\_\_\_\_



**Paddington Academy**

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## Your 100% book and knowledge organisers

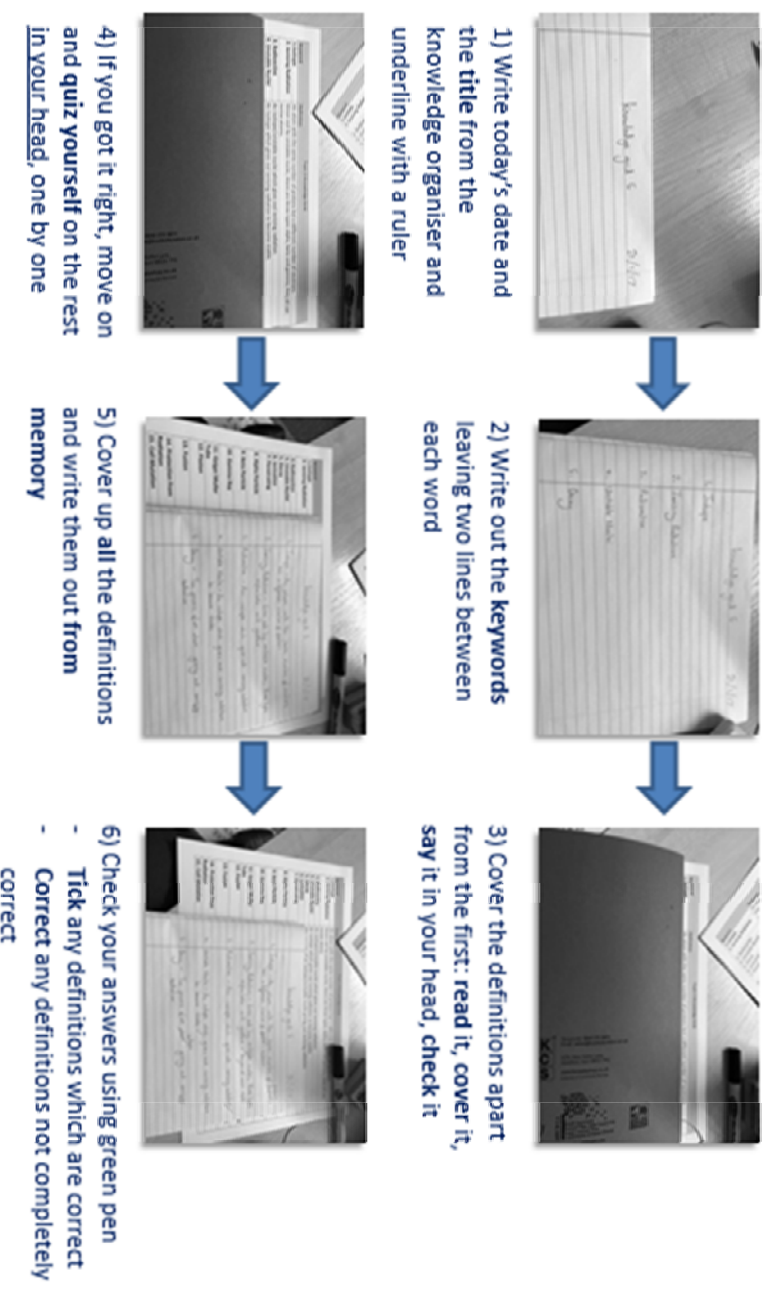
Knowledge organisers contain **critical** knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long-term.

**Students remember 50% more when they test themselves after learning.**

You must have this 100% book for **every** lesson – it is part of your equipment.

You must keep your 100% books (even after you have finished the cycle or the year).

## How do I use my 100% book for self-quizzing?



# Correcting spelling, punctuation and grammar

Your work will be marked across all subjects to help you improve your literacy. This is the code that will be used.

Correcting your spelling, punctuation and grammar	
<b>Sp + underlined word</b>	The underlined word is spelt incorrectly.  Look, cover, write then check. Do this at least three times so you spell it correctly.
<b>A circle around part of a word or a space</b>	Your punctuation is incorrect, or something is missing (including capital letters).
<b>? + wobbly line</b>	You haven't explained your ideas clearly enough.
<b>/</b>	You need to start a new sentence here.  Remember: full stop, capital letter.
<b>//</b>	You need to start a new paragraph here.  Remember: new paragraphs for time, place, topic, person (TiPToP).
<b>^</b>	A word is missing where the arrow is pointing.



1. Who	
Artist Name	<ul style="list-style-type: none"><li>Kehinde Wiley</li></ul>
Date born	<ul style="list-style-type: none"><li>1977</li></ul>
Birthplace	<ul style="list-style-type: none"><li>Los Angeles, USA</li></ul>
Works in	<ul style="list-style-type: none"><li>New York City, USA</li></ul>
Heritage	<ul style="list-style-type: none"><li>His father is Yoruba from Nigeria</li><li>His mother is African-American</li></ul>
Famous for	<ul style="list-style-type: none"><li>Heroic portraits which address the image and status of young African-American men in contemporary culture</li></ul>
How his life influenced his work	<ul style="list-style-type: none"><li>Did not grow up with his father</li><li>At the age of 20 travelled to Nigeria to explore his roots and meet his father</li><li>Growing up in Los Angeles, Wiley was afraid of the police</li></ul>

2. Technique	
Medium	<ul style="list-style-type: none"><li>Oil Paint</li></ul>
Technique	<ul style="list-style-type: none"><li>Highly Realistic</li><li>Smooth blending of colours</li><li>Formal pose</li><li>Build up paint in layers</li><li>Hold brush near tip for control</li><li>Use the tip of the brush for detail</li></ul>

3. Artwork	
Characteristics of Wiley's work	<ul style="list-style-type: none"><li>Realistic paintings</li><li>Based on photographs of young men whom Wiley sees on the street</li><li>Models dressed in their everyday clothing</li><li>References old 'Master' paintings for the pose of the figure</li><li>Combines history with the new</li></ul>

4. Key Terms	Term Meaning
Old Master	<ul style="list-style-type: none"><li>A painter of skill who worked in Europe before about 1800, or a painting by such an artist</li></ul>
Contemporary	<ul style="list-style-type: none"><li>The art of today, produced in the late 20th century or in the 21st century</li></ul>
Rococo	<ul style="list-style-type: none"><li>Over the top decorative 18th century European style</li></ul>
Ankara	<ul style="list-style-type: none"><li>A very common material used for clothing, especially West Africa</li></ul>
Hip Hop	<ul style="list-style-type: none"><li>A culture and art movement developed in New York City during the late 1970s</li></ul>

5. Influence	
Artists	<ul style="list-style-type: none"><li>Tiziano Vecellio (Titian)</li><li>Giovanni Battista Tiepolo</li><li>Joshua Reynolds</li><li>Jean Ingres</li></ul>
Style	<ul style="list-style-type: none"><li>Uses 'Old Masters' paintings for the pose of the figure</li><li>Combines traditional and contemporary portraiture</li><li>Uses French Rococo</li><li>Includes West African Textile Design (Ankara)</li><li>Influenced by American Hip Hop</li></ul>

6. Who	
Artist Name	<ul style="list-style-type: none"><li>Andy Warhol</li></ul>
Date born	<ul style="list-style-type: none"><li>1975</li></ul>
Date died	<ul style="list-style-type: none"><li>1987</li></ul>
Birthplace	<ul style="list-style-type: none"><li>Pittsby, USA</li></ul>
Worked in	<ul style="list-style-type: none"><li>New York City, USA</li></ul>
Famous for	<ul style="list-style-type: none"><li>The relationship between artistic expression, celebrity culture, and advertising that was popular in the 1960s</li></ul>

7. Famous works				
Name	Campbell's Soup Cans	Marilyn Diptych	Michael Jackson	John Lennon
Date	1962	1962	1984	1985

8. Warhol work	
Medium	<ul style="list-style-type: none"><li>Silkscreen</li></ul>
Features of work	<ul style="list-style-type: none"><li>Celebrity subjects</li><li>Bold and bright colours</li><li>Simplified features</li><li>Repeated image</li></ul>

9. Pop Art	
Where did it begin	<ul style="list-style-type: none"><li>Britain and the United States during the mid- to late-1950s</li></ul>
Imagery featured	<ul style="list-style-type: none"><li>Popular and mass culture</li><li>Advertising and product labelling</li><li>Comic books</li><li>Mundane cultural objects</li></ul>
Aims	<ul style="list-style-type: none"><li>Emphasising the boring or tacky parts of popular culture, through the use of irony</li></ul>
Impact	<ul style="list-style-type: none"><li>The movement presented a challenge to traditions of fine art</li></ul>

10. Other Pop Artists that worked with Warhol	<ul style="list-style-type: none"><li>Richard Hamilton</li><li>Robert Rauschenberg</li><li>Jasper Johns</li><li>Roy Lichtenstein</li></ul>
11. Artists that were influenced by Warhol	<ul style="list-style-type: none"><li>Jeff Koons</li><li>Takashi Murakami</li><li>Damien Hirst</li><li>Sturtevant</li></ul>

# Accessing a script| Drama | Year 9 | Cycle Two

A – Theatre roles and responsibilities	
1. Playwright	Writes the script of the play including stage directions and dialogue
2. Actor	Performs the character and makes acting choices connected to physical and vocal skills
3. Director	Makes final decisions about acting positions and supports acting choices
4. Designer	Organises and makes non-acting elements of a performance e.g. lighting and costume

B – Stage directions		
1. Stage Directions	Guidance given by the playwright to support actors, directors and designers about how the play should be staged and performed	
Who the direction is for	Type of stage direction	What it gives guidance on
Actor	2. Voice	How to say a line
	3. Action	What to do with your body/face
	4. Space	Where to stand
Director	5. Prop	Which objects are needed
	6. Stage furniture	Which large furniture is needed
Designer	7. Set	What the large backdrops should look like
	8. Light	What the lighting effects should be
	9. Sound	What the sound effects should be
	10. Costume	What characters’ costumes should be

C – Interpretation of stage directions	
1. Dynamics	The way in which a movement is performed or a line of speech is delivered
2. Volume	How loud or quietly you are speaking
3. Pace	How fast or slowly you are speaking
4. Tone	The overall quality of your voice e.g. aggressive or joyful
5. Pitch	How high or low a person’s voice is
6. Pause	Moments of silence in speech
7. Inflection	Placing emphasis on certain words in a sentence
8. Posture	How you stand or sit e.g. slouched or straight
9. Gesture	Small movements used to communicate e.g waving
10. Facial expression	The use of the face to show emotions e.g. smiling
11. Gaze	The direction a character is looking
12. Spatial behaviour	Distance between characters
13. Speed	The speed with which a movement is performed
14. Size	How big movements are
15. Flow	How free, restricted or tense a movement is

D – Characterisation	
1. Characterisation	The creation or construction of a fictional character
2. Emotions	A strong feeling the character has, influenced by circumstances, relationships with others, or mood
3. Motivation	What drives a character’s actions; this could be internal or external

E – ‘Romeo and Juliet’ by William Shakespeare. Characters:	
1. Mercutio	Romeo’s best friend. Fun-loving character used to contrast Romeo, often teasing Romeo. He takes Romeo’s place in a fight and dies.
2. Tybalt	Juliet's cousin. A violent character, involved in many fights. Kills Mercutio and is killed by Romeo. Romeo is banished from Verona for this.
3. Benvolio	A peace-loving character who is Romeo’s cousin.



## English - Year 9 - Cycle 2 - Romeo and Juliet & Poetry

The Prologue	
1	Two households, both alike in dignity,
2	In fair Verona, where we lay our scene,
3	From ancient grudge break to new mutiny,
4	Where civil blood makes civil hands unclean.
5	From forth the fatal loins of these two foes
6	A pair of star-cross'd lovers take their life;
7	Whose misadventured piteous overthrows
8	Do with their death bury their parents' strife.
9	The fearful passage of their death-mark'd love,
10	And the continuance of their parents' rage,
11	Which, but their children's end, nought could remove,
12	Is now the two hours' traffic of our stage;
13	The which if you with patient ears attend,
14	What here shall miss, our toil shall strive to mend.

A	ACT ONE	
1	Prologue (n)	An introductory section of a work of literature, drama or music; acts as a framing device
2	Chorus (n)	Actor(s) who are 'outside' the narrative, and who comment on the action and guide the audience
3	Shakespearean sonnet (n)	A poem written in a 14-line structure, with four quatrains followed by a rhyming couplet
4	Quatrain (n)	A verse of four lines of poetry linked through a regular rhyme pattern
5	Volta (n)	Italian word for 'turn'; the shift in a poem
6	Rhyming couplet (n)	Two lines in poetry with at the end of each line that rhyme
7	Theme (n) / thematic (adj)	One of the main ideas of a text
8	Fate / fortune (n)	Destiny, as decided by the stars/universe
9	Grudge (n)	Bad feeling after an argument
10	Foe (n)	Enemy
11	Monologue (n)	A long speech by one character in a play or film
12	Semantic field (n)	A pattern of groups of words that are linked by meaning
13	Juxtaposition (n)	Two ideas or images being placed close together to highlight the contrast
14	Emotive language (n)	Deliberately chosen words to bring up emotion

15	Culpability (n) / culpable (adj)	Responsibility for a fault or wrong (synonym of blame)
16	Feud (n)	A long-standing and bitter argument or dispute
17	(Poetic) meter (n)	Unit of measuring rhythm in poetry through the pattern of the syllables (beats)
18	Iambic pentameter (n)	A line of poetry with five sets of unstressed/stressed syllables (da-DUM x 5)
19	Blank verse (n)	Non-rhyming poetry, usually written in iambic pentameter
20	Oxymoron (n) / oxymoronic	A figure of speech with two words that contradict each other
21	Antithesis/es (n) / antithetical (adj)	Opposite idea(s)
22	Pathos (n) / pathetic (adj)	Refers to a quality that generates sympathy and a feeling of sorrow
23	Imagery (n)	Language that describes by appealing to the senses, particularly visuals
24	Imperative (n)	A command or order
25	Figurative language (n)	Words or phrases that present a different meaning to the literal one e.g. metaphor
26	Authoritarian (adj)	Controlling
27	Patriarchy (n) / patriarchal (adj)	A system of society or government controlled by men
28	Extended metaphor (n)	A comparison between two things that lasts throughout a passage of text e.g a poem
29	Allusion (n) / allude (v)	An indirect reference to something
30	Artifice (n) / artificial (adj)	Something false or insincere, appearing on the surface
31	Ambiguous (adj) / ambiguity (n)	Unclear, open to more than one interpretation
32	Foreshadow (v) / foreshadowing (n)	To give hints or clues of events that will occur later in the plot
33	Infatuation (n) / to be infatuated with (v)	An intense passion for something which doesn't last long
B ACT TWO		
1	Aside (n)	When a character briefly speaks to the audience, unheard by the other characters onstage
2	Soliloquy (n)	When a character speaks his or her thoughts aloud
3	Authentic (adj)	Not a copy, genuine

C	ACT THREE	
1	Plague (n) (v)	A serious bacterial infection that can be deadly
2	Retribution (n)	A punishment given to someone as revenge
3	Banishment (n) / banish (n)	A punishment of being sent away from a country or other place
4	Exile (n)	Being kept out of one's native country, typically for political reasons or punishment
5	Damnation (n)	To be condemned to eternal punishment in hell
6	Contagious (adj)	Likely to and easily spread (like a disease)
7	dramatic irony (n)	When readers/the audience are aware of something which the characters onstage are not
8	Monosyllable (n) / Monosyllabic (adj)	A word made up of one syllable
9	Dehumanisation (n) / dehumanise (v)	Removing human qualities from a person
10	Objectification (n) / objectify (v)	Not seeing someone as a person but as an object
11	Mise en scène	What we see on the screen
12	Pathetic fallacy (n)	A specific type of personification: projecting human emotions onto surroundings and nature
13	Diegetic (adj)	Sound from on screen action
14	Non-diegetic (adj)	Added sound e.g. soundtrack
15	Close up shot (n)	A shot that shows an object/person in a way that fills the screen
16	Interpretation (n) / interpret (v)	A way of re-creating something
17	Deconstruct (v) / deconstruction (n)	Taking a text apart to explore meaning in depth
18	Proxemics (n)	Space left between a character and others on stage/screen

D	ACT FIVE	
1	Motif (n)	Any repeated idea, theme or image with symbolic significance in the text
2	Epilogue (n)	A section at the end of a work of literature, drama or music; a framing device that comments on or concludes the action

E	POETRY	
1	Persona (n)	the speaker in a poem
2	Subvert (v) / subversion (n)	undermining, removing power
3	Convention (n)	The way something is usually done – basic expectations
4	Euphemism (n)	An indirect word way of saying something harsh or blunt
5	Unrequited (adj)	A feeling not returned, especially love
6	End-stopped line (n)	When a sentence ends or pauses at the end of a line of poetry (shown by punctuation such as full stop or colon)
7	Enjambment (n)	When a sentence continues onto a new line, couplet or stanza of poetry without a pause
8	Caesura (n)	A fracture or a pause in a line of poetry, caused by punctuation
9	Paternal (adj)	Related to being a father
10	Free verse (adj)	A poem written without a clear or obvious form
11	Alliteration (n)	The repetition of the same sounds usually at the beginning of words
12	Maternal (adj)	Related to being a mother

Shakespearean English	Modern English
thou / ye / thee	you
thine / thy	your
ay	yes
art	are
aught	anything
dost / doth	do
'ere	before
haste	urgency
hast	have
hence	from here

Shakespearean English	Modern English
hence	from here
hie	hurry
hither	here
oft	often
'tis	it is
'twas	it was
wast	were
whence	from where
would (he were)	I wish (he were)
yon, yonder	that one there

## YEAR 9 FRENCH CYCLE 2

<b>1) Qu'est ce-que t'utilise comme technologie?</b>		<b>Les raisons continued</b>		<b>9) les questions continued</b>		<b>12) les excuses</b>	
<b>How do you use technology?</b>						faire mes devoirs	do my home work
J'utilise	I use	une perte de temps	a waste of tme	avec qui	with whom	rester a la maison	stay at home
J'ai	I have	un gaspillage de temps	a waste of tme	Où	where	garder mes frères	look after my brothers
Un téléphone portable	A mobile phone	de bonne marché	good value	est ce-que	do...?	me coucher tôt	go to bed early
un ordinateur	a computer	lent	slow	<b>10) L'imparfait - was and used to</b>		me reposer	rest
un clé USB	a usb key	<b>5) Time phrases - past tense</b>		C'était	It was	<b>14) Telling a story with sequencers</b>	
une tablette	a tablet	hier	yesterday	J'étais	I was	d'abord	first of all
un portable	a laptop	avant hier	before yesterday	il y avait	there was	ensuite	then
<b>2) Je l'utilise</b>		la semaine dernière	last week	Il était	He was	puis	then
pour	for	le samedi passé	last Saturday	Ils étaient	they were	après ça	after that
afin de	in order to	il y a deux semaines	two weeks ago	J'avais	I used to have	enfin	finally
surfer l'internet	surf the net	<b>6) Past tense - Qu'et ce-que tu as fait?</b>		J'allais	I used to go	<b>15) Adverbs of time and activities</b>	
trouver des renseignements	find information	j'ai	I have	Je ferais	I used to do	d'habitude	usually
télécharger de la musique	download music	dépensé	spent	<b>11) Les conjugaisons</b>		cette année/fois	this year/ time
faire de la recherche	to do research	téléchargé	downloaded	<b>Verb endings for regular imperfect tense verbs</b>		l'année prochaine	next year
faire mes devoirs	to do my homework	parlé	spoken	je	_____ais	la prochaine fois	next time
sauvegarder	to save	envoyé	sent	Tu	_____ais	a l'avenir	in the future
lire des articles	to read articles	aimé	loved	Il	_____ait	je voudrais/ j'aimerais	I would like
parler avec ma famille	to speak with family	utilisé	used	Elle	_____ait	faire du canoë kayak	to do canoing
répondre	to respond	vu	seen	Nous	_____ions	du vtt	mountain biking
appeler	to call	acheté	bought	Vous	_____iez	de la plongée sous marine	diving
<b>(2) Les opinions - opinions</b>		chanté	sung	Ils	_____aient	de la voile	sailing
je dirais que	I would say that	écouté	listened to	<b>12) Going out - sortir</b>		de l'escalade	abseiling
sans doute	without a doubt	<b>7) La quantité - quantifiers</b>		Tu veux?	you what?	de l'équitation	horse riding
à mon avis	in my opinion	très	very	venir	to come	de la pêche	fishing
quant à moi	according to me	un peu	a little	m'accompagner	to accompany me	<b>16) Reflexives</b>	
je le trouve	I find it	assez	quite	nous accompagner	come with us	je me couche	I go to bed
l'avantage est que	the advantage is that	trop	too	sortir avec nus	come out with us	je me lève	I get up
les avantages sont	the advantages are	<b>8) Adverbs of times</b>		voir u film	see a film	je m'amuse	I have fun
l'inconvénient est que	the disadvantage is that	souvent	often	ca t'intéresse	that interests you	je m'ennuie	I get bored
les inconvénients sont	the disadvantages are	quelquefois	sometimes	oui merci	yes please	je me baigne	I swim/take a bath
<b>3) Les raisons</b>		parfois	sometimes	je veux bien	I want to	je me douche	I shower
C'est	It's	rarement	rarely	d'accord	ok	e me fais piquer	I get stung/bitten
utile	useful	jamais	never	génial	great	je me bronze	I tan
pratique	practical	toujours	always	bonne idée	good idea	je me coiffe	I do my hair
facile	easy	tous les jours	every day	pourquoi pas?	why not?	je me maquille	I put on make up
difficile	difficult	<b>9) Les questions</b>		non merci	no thanks	<b>17) Past imperfect set phrases</b>	
compiqué	complicated	Qu'est -ce que	what do	ca ne m'intéresse pas	it doesn't interest me	il y avait	there was
économique	good value	Quel/le	what is	j'ai horreur de ca	I can't stand that	C'était	It was
moins cher	less expensive	comment	how	tu rigoles!	you're joking!	je faisais	I was doing
rapide	fast	Quand	when	<b>12) les excuses</b>		j'étais	I was
de bonne/mauvaise qualité	good/bad quality	combien	how much	je dois	I have to	j'avais	I had



## Life in an Emerging Country

## Y9 Geography

## Urbanisation

A Emerging Countries and Urbanisation	
Emerging Countries	Describes countries which experience high rates of economic development.
Urbanisation	The increase in the proportion of people living in towns and cities.

B L1-2: Characteristics of Emerging Countries	
Industrialisation	The process of an economy moving from mostly agriculture (farming) to manufacturing (making) goods.
Rapid Development	The process of fast economic growth, usually from industrialisation.
BRIC Countries	Emerging economies of Brazil, Russia, India and China.
MINT Countries	Emerging economies of Mexico, India, Nigeria and Turkey.
Employment Structure	How the workforce is divided up between primary, secondary and tertiary jobs.
Export	When countries trade goods or services to other countries.

C L3: Rural to Urban Migration	
Rural-Urban Migration	The movement of people from rural (countryside) to urban (cities) areas.
Push Factors	Factors which drive people away from a place. E.g. No job
Pull Factors	Factors which draw people to a new location. E.g. Jobs.
Secondary Sector	Jobs which involve manufacturing (making) such as factory work.

D L4: Squatter Settlements	
Squatter Settlements	A collection of buildings where people have no legal rights to the land they are built on. They are also known as shanty towns or favelas (Brazil).
Inequality	The difference between rich and poor.
Sanitation	This refers to the measures in place to protect public health such as clean water and the disposal of sewage and waste.
Informal Economy	These are jobs which are not taxed or monitored by the government.
Poverty	A state of being poor and having low standards of living.

E L5: Trans-National Corporations	
Trans-National Corporation	A large company which operates in countries all around the world.
Interdependence	When different countries rely on each another, creating global interdependence.
Globalisation	This describes the increased interdependence of countries around the world, particularly with the movement of goods, services and money across national borders.
Cheap Labour	Those who work on low wages.

F L6: Impacts of TNC's on Emerging Countries	
Positive	+ Raised standards of living. + Lower unemployment rates.
Negative	- Exploitation of workers such as low pay, poor safety and few employment rights. - Profits from the TNCs do not remain in the country where production takes place.

G L1-2: Urbanisation in the UK	
Settlement	It is a place where people live.
Site	This is the actual place where people decided to locate their settlement.
Situation	The location of a place relative to its surroundings, such as its access to natural resources or trade links.
Sphere of Influence	This describes how important a settlement is and the levels of services it provides.



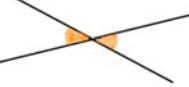
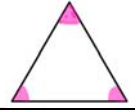
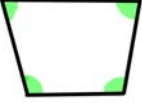

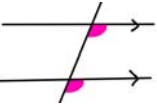


H L2: Urban Decline	
Urban Decline	This is the decline of urban areas caused by lack of investment or maintenance.
Deindustrialisation	The process of economic change caused by the decline of industry (factories).
Urban Sprawl	The growth of urban areas into the countryside.
North-south Divide	In England, the term refers to the economic and cultural differences between Southern England and Northern England.

I L3-4: Sustainable Living and Regeneration	
Sustainable Living	Living in a way where people have the things they need, but without reducing the ability of people in the future to meet their needs.
Quality of Life	The general well-being of individuals in a country including their security, employment, wealth, health and freedom.
Regeneration	This is the attempt to reverse the urban decline of an area by both improving the physical structure and economy.
Gentrification	This is the process of wealthy people moving into, renovating, and restoring housing in areas of decline.

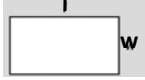
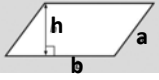
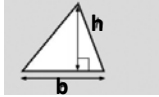
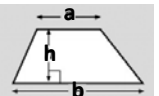
Ancient Civilisations 3000 .BC. – 500 A.D.		8. Medieval beliefs		Key people in history of medicine	
1. Ancient Egypt	<ul style="list-style-type: none"> <li>* Empire lasted for almost 30 centuries (3000 years)</li> <li>* Lasted from 3100 B.C. to 320 B.C.</li> </ul>	<ul style="list-style-type: none"> <li>* Continued belief in four humours</li> <li>* The church blamed sinful lifestyles</li> <li>* The church supported work of Galen</li> </ul>		15. Hippocrates	<ul style="list-style-type: none"> <li>* Greek physician</li> <li>* Born around 460 B.C. (Ancient Greek)</li> <li>* Developed theory of the four humours – that their imbalance caused illness</li> </ul>
2. Egyptian medical treatments	<ul style="list-style-type: none"> <li>* Herbal remedies – using herbs</li> <li>* Simple surgery</li> <li>* Charms and spells</li> <li>* Personal hygiene - washing</li> <li>* Goddess Sekhmet of healing</li> </ul>	9. Medieval treatments		16. Galen	
3. Ancient Greece	<ul style="list-style-type: none"> <li>* Civilization emerged in the 8<sup>th</sup> century B.C</li> <li>* Empire came to an end when it fell to the Romans in 146 B.C.</li> </ul>	10. Renaissance		17. Vesalius	
4. Greek medical beliefs	<ul style="list-style-type: none"> <li>* Came from <b>Hippocrates</b></li> <li>* Belief that the imbalance of Four Humours caused illness</li> <li>* The Four Humours were blood, black bile, yellow bile and phlegm</li> </ul>	11. Renaissance medicine		18. Anatomy	
5. Roman Empire	<ul style="list-style-type: none"> <li>* Lasted from about 30 B.C. to 500 A.D.</li> <li>* Empire controlled most of Europe including England, parts of the middle East and north Africa</li> </ul>	Industrial Period 1700-1850 A.D.		19. Edward Jenner	
6. Roman medical beliefs	<ul style="list-style-type: none"> <li>* Work of <b>Galen</b> emerged in this period – first person to use <b>dissections</b></li> <li>* <b>Public Health</b> became important</li> <li>* Placed importance on bathing and clean water</li> </ul>	12. Industrial period	<ul style="list-style-type: none"> <li>* Industrial revolution was the change to new manufacturing processes from 1760-1840</li> <li>* Factories and machines were used</li> </ul>	20. John Snow	
Medieval and Renaissance Periods c.1300-1600 A.D.		13. Industrial diseases	<ul style="list-style-type: none"> <li>* Cholera – caused by drinking contaminated water</li> <li>* Tuberculosis – Bacteria spread through coughing led to infection of lungs and coughing up blood</li> <li>* Phossy Jaw – infection of the jaw bone caused by working with phosphorous in match factories</li> </ul>	21. Louis Pasteur	
7. Medieval period	<ul style="list-style-type: none"> <li>* Began with the fall of the Roman Empire (500 A.D.) and continued until the 1400</li> <li>* Also known as the Dark Ages</li> </ul>	14. Industrial medicine	<ul style="list-style-type: none"> <li>* Edward Jenner discovery of inoculation led to later development of vaccination</li> <li>* John Snow discovered cause of cholera</li> <li>* Pasteur and Koch discovered Germ Theory – idea that bacteria caused disease</li> </ul>	22. Robert Koch	
				<ul style="list-style-type: none"> <li>* Discovered method of inoculation (vaccination)</li> <li>* Vaccination = injecting someone with a small dose of a disease to allow them to build resistance to it</li> <li>* Made the connection between milk maids and their lack of cow pox in 1796</li> </ul>	
				<ul style="list-style-type: none"> <li>* Discovered the connection between contaminated (dirty) water and cholera using a scientific method in 1854</li> </ul>	
				<ul style="list-style-type: none"> <li>* Discovered Germ Theory – that bacteria caused disease in the 1850s</li> </ul>	
				<ul style="list-style-type: none"> <li>* Continued the work of Pasteur to discover which germs caused which diseases</li> </ul>	

## Maths Cycle 2 Year 9

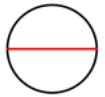
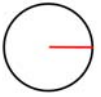

### 1. Angles

	Angles on a straight line add up to $180^\circ$
	Angles around a point add to $360^\circ$
	Vertically opposite angles are equal
	Angles in a triangle add up to $180^\circ$
	Angles in a quadrilateral add up to $360^\circ$
	Base angles in an isosceles triangle are equal
	Corresponding angles are equal
	Alternate angles are equal
	Co-interior angles add up to $180^\circ$

### 2. Area

	Rectangle	$l \times w$
	Parallelogram	$b \times h$
	Triangle	$\frac{b \times h}{2}$
	Trapezium	$\frac{1}{2}(a + b)h$

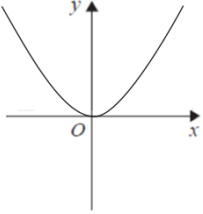
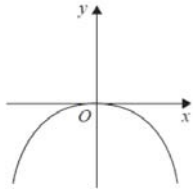
### 3. Circle Definitions

Area of a circle	$\pi r^2$
Circumference of a circle	$\pi d$ or $2\pi r$
	Diameter
	Radius
	Circumference

### 4. Angles in Polygons

Sum of interior angles	$(n-2) \times 180$
Each interior angle in regular polygon	$\frac{(n-2) \times 180}{n}$
Sum of exterior angles	$360^\circ$
Each exterior angle in regular polygon	$\frac{360^\circ}{n}$
Number of sides in a regular polygon	$\frac{360}{\text{exterior angle}}$
Interior + exterior angle	$180^\circ$

### 5. Quadratic graphs (Higher Only)

	$y = x^2$
	$y = -x^2$

## 1. Types of music and sound in a film:

<b>Soundtrack</b>	All of the music used in a film, this can include songs, the film score and sound effects
<b>Film score</b>	The <u>original</u> music in a film, used to create a mood on screen
<b>Theme tune</b>	An original piece of music composed for a film, used at the beginning and end of a film
<b>Sound effects</b>	Sounds and noises used throughout a film to add drama and excitement to a scene
<b>Leitmotif</b>	A recurring musical idea (such as a melody, chord sequence or rhythm) which is associated with a particular idea, character or place.

## 2. Elements of music used in film music:

<b>Pitch</b>	how high or low sounds are
<b>Melody</b>	the tune in a piece of music
<b>Pulse</b>	the constant beat running through a piece of music (aka beat or click)
<b>Metre</b>	how pulses are grouped together e.g. in 3s or 4s etc, noted on sheet music as a time signature
<b>Rhythm</b>	the arrangement of sound as it moves through time
<b>Tempo</b>	the speed of a piece of music
<b>Dynamics</b>	the volume of music
<b>Timbre / Sonority</b>	used to describe the instrument or sound of the instrument
<b>Texture</b>	the word used to describe the way layers of music relate to each other
<b>Harmony</b>	The sound created by notes played together

## 3. Describing words for elements of music:

<b>Pitch</b>	high / low
<b>Melody</b>	ascending / descending / conjunct / disjunct
<b>Rhythm</b>	even / syncopated
<b>Tempo</b>	fast / slow / walking pace / accelerando / rallentando
<b>Dynamics</b>	loud / quiet / crescendo / diminuendo
<b>Texture</b>	thick / thin
<b>Harmony</b>	consonant / dissonant

## 4. Describing word meanings:

<b>Ascend</b>	pitch getting higher
<b>Descend</b>	pitch getting lower
<b>Conjunct</b>	pitch moving by step (small amounts)
<b>Disjunct</b>	pitch moving by leap (large amounts)
<b>Accelerando</b>	speed up i.e. to accelerate
<b>Rallentando</b>	slow down
<b>Crescendo</b>	getting louder
<b>Diminuendo</b>	getting quieter
<b>Consonant</b>	notes played together that sound nice
<b>Dissonant</b>	notes played together that clash (sound bad)

## 5. Musical features and devices used in film music:

<b>Ostinato / Riff</b>	a short, catchy, repeated phrase
<b>Syncopation</b>	the word used to describe any jumpy, off-beat rhythm
<b>Arpeggio</b>	notes of a chord played separately

## 6. Different musical layers found in film music:

<b>Melody</b>	See box 2 for a definition
<b>Chord sequence</b>	A group of chords played repeatedly
<b>Bass line</b>	The lowest pitched part played in a piece of music
<b>Drum beat</b>	Any repeated musical phrase played on drums or a drum kit

## 7. Other keywords

<b>Composing</b>	creating original music
<b>Synchronise</b>	two or more things happening at the same time
<b>Major scale</b>	a pattern of notes that have a bright sound
<b>Minor scale</b>	a pattern of notes that have a dark sound
<b>Chromatic notes</b>	notes used in a piece of music that don't belong to a major or minor scale

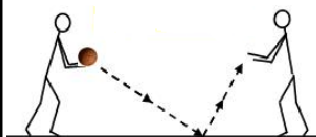
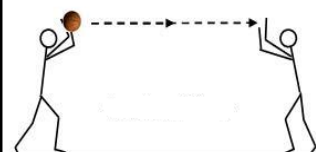
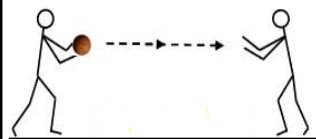
# Year 9 Basketball Knowledge Organiser

## (A) Rules

1	Double Dribble	When you bounce the ball, stop and hold the ball with both hands, and then bounce the ball again.
2	Travelling	Walking or running with the ball without bouncing it.
3	3 second rule	Inside the opposition's key for more than 3 seconds without the ball.
4	Backcourt violation	Once the offense has brought the ball across the halfway line, they cannot go back across the line during possession.
5	Free throw	Awarded when fouled in the key.

## (B) Passing

1	Chest Pass	<ol style="list-style-type: none"> <li>1. Start with the ball at your chest.</li> <li>2. Hands in a 'W' shape behind the ball.</li> <li>3. Push out from your chest.</li> <li>4. Player receives the ball at their chest.</li> </ol>
2	Overhead Pass	<ol style="list-style-type: none"> <li>1. Can be performed using one or two hands.</li> <li>2. Performed above the head.</li> <li>3. The further behind your head you start, the more power generated.</li> <li>4. Used to pass the ball a long distance or over players.</li> </ol>
3	Bounce Pass	<ol style="list-style-type: none"> <li>1. Start with the ball at your chest.</li> <li>2. Push the ball down towards the floor.</li> <li>3. One bounce, where the player receives it in their chest.</li> <li>4. Performed to get under or around players.</li> </ol>



## (C) Key Vocabulary

1	Dribbling	Bouncing the ball continuously with one hand while walking or running down the court.
2	Defence	When your team does not have the ball and you have to defend.
3	Offence	The team that is attacking and trying to score a basket.
4	Player positions	<ol style="list-style-type: none"> <li>1. Point Guard – a player who brings the ball up the court</li> <li>2. Center – a player who positions themselves at the top of the key</li> <li>3. Forward – a player who is positioned underneath the basket to get rebounds</li> </ol>

## (D) Regulations

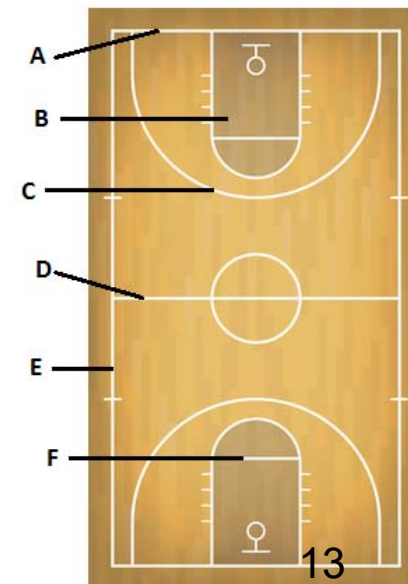
1	Players	Each team has five players on court.
2	Time periods	Four quarters of 12 minutes.
3	Points	<ol style="list-style-type: none"> <li>1 point awarded from the free throw line.</li> <li>2 points if you shoot from inside the 3 point line.</li> <li>3 points if you shoot from outside the 3 point line.</li> </ol>

## (E) Shooting

1	Set Shot	<ol style="list-style-type: none"> <li>B – Balance – your feet are shoulder width apart.</li> <li>E – Eyes on where you are shooting.</li> <li>E – Elbow at 90 degree.</li> <li>F – Follow through with your hand.</li> </ol>
2	Jump shot	A set shot that is performed while jumping.
3	Lay-up	<ol style="list-style-type: none"> <li>1. Performed with a 2 step run up.</li> <li>2. Approach the basket from 45 degrees.</li> <li>3. Use one hand.</li> <li>4. Aim for the top corner of the small black square on the back board.</li> </ol>

## (F) Court lines

A	Baseline
B	Key
C	3 point line
D	Half way line
E	Side line
F	Free throw line





## Islam- Beliefs and Teachings

Section 1: Nature of God (Allah)			Section 2: Prophethood			Section 3: Angels			Section 5: Afterlife		
1	Tawhid	The oneness of God.	1	Risalah	The line of communication between God and His creation.	1	Malaikah	Heavenly immortal beings, God’s first creation.	1	Signs of the end of the world	<ul style="list-style-type: none"><li>The most important one will be the appearance of a man called Mahdi- the saviour from end of time events.</li><li>Other signs include: abundance of earthquakes, common killing, rejection of Islam, increase in dishonesty, nakedness and fornication.</li></ul>
2	Immanent	God is always close by.	2	Adam	The first prophet, known as father of the human race.	2	Nature of angels	Invisible and exist everywhere in the universe.			
3	Transcendent	God is beyond all things, not limited by laws of nature.	3	Ibrahim	Known as hanif. He had inner knowledge that there was only one God.	3	Jibiril	The angel of revelation to the prophets.			
4	Omniscient	God is all knowing.	4	Musa	Freed the Israelites from slavery in Egypt.	4	Mika’il	The gatekeeper of heaven.			
5	Beneficent	God is all loving.	5	Dawud	Israel’s greatest king who made Jerusalem holy for Muslims.	5	Azrail	Takes the soul at death.			
6	Merciful	God is always fair and forgives those who repent.	6	Isa	Was given the injil (Gospel).	6	Raqib and Atid	The ‘noble recorders’.			
7	Judge	On the last day God will judge the behaviours of Muslims.	7	Muhammad	Muhammad (pbuh) is seen as the perfect role model for Muslims because of the moral and prayerful way he lived his life.	7	Munkar and Nakir	The angels that will question the dead in their graves to test their faith.			
8	Creator	God is the beginning and the cause of all that exists.	8	The Revelation on the Night of Power (Laylatul Qadr)	Muhammad was spoken to by the angel Jibril and received the first revelation of the Qur’an.	8	Israfil	Responsible for blowing the trumpet on judgement day.			
			9	Muhammad’s message	<ul style="list-style-type: none"><li>There is one true God</li><li>We need to show thanks to God through worship</li><li>There will be a judgement day where God will judge our lives</li></ul>	Section 4: Keywords			2	Day of judgement: test	<ul style="list-style-type: none"><li>Barzakh- where all souls are in waiting until the final trumpet blows for the Day of Judgement</li><li>Heaven- a state of joy, happiness and peace- where the righteous will live</li><li>Hell- a state of torment and suffering for those who failed to pass God’s test</li></ul>
						Tawhid	Monotheism				
						Shirk	Polytheism				
						Revelation	God’s words in the Qur’an				
						Surah-	a chapter of the Qur’an				
						Akhirah	Afterlife				
						Barzakh	The waiting pace before judgement				

Key beliefs	Key quotes
<b>Nature of Allah Monotheism</b>	<ol style="list-style-type: none"> <li>1. "There is no God but Allah."</li> <li>2. "Say: He is Allah, the <b>One and Only</b>; Allah, the Eternal, Absolute; He begetteth not, nor is He begotten; And there is none like unto Him."</li> </ol>
<b>Prophethood</b>	<ol style="list-style-type: none"> <li>1. "And to every nation we have sent a messenger."</li> <li>2. '<b>Ibrahim</b> was neither a Jew nor a Christian, but he was a hanif, a Muslim [submitting to God ].</li> <li>3. 'We gave <b>Moses</b> the Book and followed him up with a succession of prophets."</li> <li>4. "We gave <b>Isa</b> signs (miracles) and strengthened him with the holy spirit."</li> <li>5. "There is no God but Allah and <b>Muhammad</b> is His last and final messenger."</li> </ol>
<b>Prophet Muhammad (pbuh)</b>	<ol style="list-style-type: none"> <li>1. "There is no God but Allah and <b>Muhammad</b> is His last and final messenger."</li> <li>2. 'Not once did I receive a revelation without thinking that my soul had been torn away.' Hadith</li> <li>3. The prophet was known as "Al-Amin" the trustworthy, for his honest and humble character.</li> </ol>

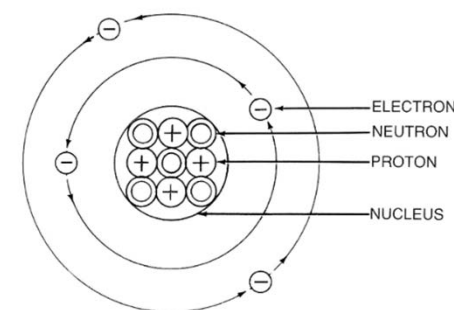
Key beliefs	Key quotes
<b>Angels</b>	<ol style="list-style-type: none"> <li>1. "Whoever is an enemy to Jibril– it is [none but] he who has brought the Qur'an down upon your heart."</li> <li>2. The prophet (pbuh) said that "Israfil is awaiting the order of blowing while He grasps the trumpet".</li> <li>3. "The Angel of Death, put in charge of you, will take your souls: then you shall be brought back to your Lord."</li> <li>4. "Noble recorders"</li> <li>5. They (Munkar &amp; Nakir) will ask "Who is your Lord? Who is your prophet? What is your Book?"</li> </ol>
<b>Qur'an</b>	<ol style="list-style-type: none"> <li>1. 'We have sent down to you the Book as clarification for all things and as guidance and mercy and good tidings for the Muslims.'</li> <li>2. "We have revealed it to you on the Night of Power."</li> </ol>
<b>Life after death</b>	<ol style="list-style-type: none"> <li>1. 'Every soul shall have a taste of death.'</li> </ol>

# 9 Science: Reactivity

1	<b>Atom</b>	<input type="checkbox"/> The smallest unit that makes up matter <input type="checkbox"/> Contains protons, neutrons and electrons
2	<b>Element</b>	<input type="checkbox"/> Substance made up of only one type of atom
3	<b>Compound</b>	<input type="checkbox"/> Two or more elements chemically bonded together
4	<b>Mixture</b>	<input type="checkbox"/> Different elements, compounds or molecules mixed together but not chemically bonded
5	<b>Law of conservation of mass</b>	<input type="checkbox"/> In a chemical reaction, atoms are not created or destroyed only re-arranged.
6	<b>Thermal decomposition</b>	<input type="checkbox"/> A chemical reaction where a substance is broken down by heating
7	<b>Combustion</b>	<input type="checkbox"/> Scientific name for burning
8	<b>Collision Theory</b>	<input type="checkbox"/> Particles must bump into each other with enough energy for a reaction to take place
9	<b>Effect of temperature on rate of reaction</b>	<input type="checkbox"/> The higher the temperature the faster the rate of reaction
10	<b>Effect of concentration on the rate of reaction</b>	<input type="checkbox"/> The higher the concentration the higher the rate of reaction

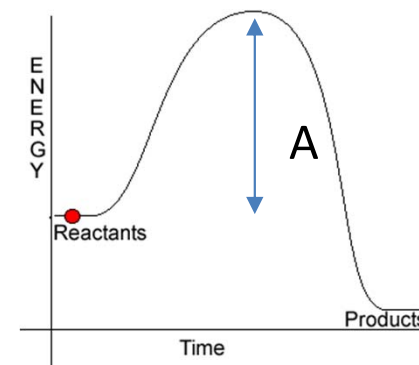
11	<b>Effect of surface area</b>	<input type="checkbox"/> The greater the surface area, the higher the rate of reaction
12	<b>Catalyst</b>	<input type="checkbox"/> Substance that speeds up the rate of a reaction without being used up or changed in the reaction
13	<b>Endothermic reaction</b>	<input type="checkbox"/> A reaction that takes in heat energy
14	<b>Exothermic reaction</b>	<input type="checkbox"/> A reaction that releases heat energy
15	<b>Evaluation of method</b>	<input type="checkbox"/> Suggesting improvements for a scientific method to reduce sources of error
16	<b>Hypothesis</b>	<input type="checkbox"/> A prediction of what you think will happen in an investigation
17	<b>Independent variable</b>	<input type="checkbox"/> The variable that you change in an investigation
18	<b>Dependent variable</b>	<input type="checkbox"/> The variable that you measure in an investigation
19	<b>Control variables</b>	<input type="checkbox"/> The variables that you keep the same in an investigation so that your results are valid

## 20. Structure of an atom



## 21. Activation energy

A - Energy required by particles in order for a reaction to take place



## 22. Word Equation

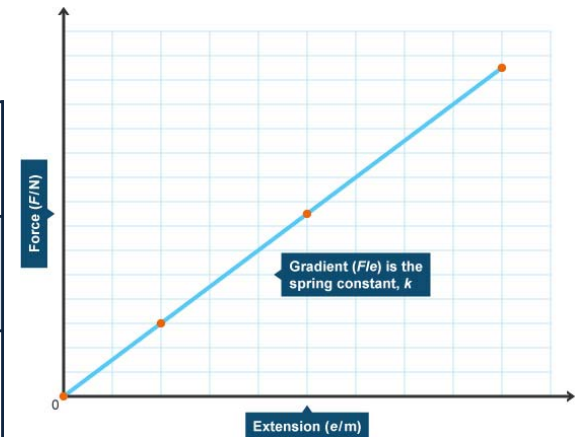
Reactants -----> Products

# 9 Science: Forces

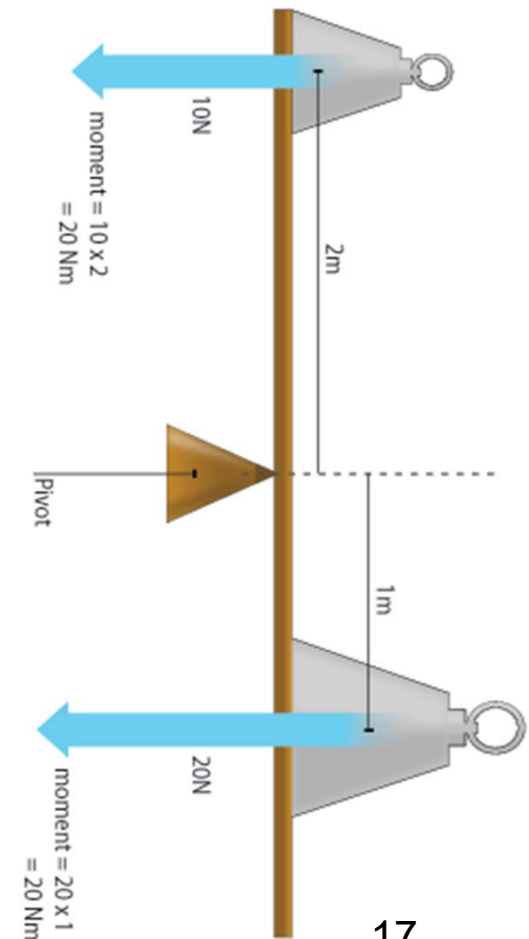
1	<b>Force</b>	<input type="checkbox"/> Push or pull <input type="checkbox"/> Always act in pairs with each force acting in the opposite direction <input type="checkbox"/> Contact or Non-contact
2	<b>Interaction pair</b>	<input type="checkbox"/> An object exerts a force on another object and vice versa
3	<b>Moment</b>	<input type="checkbox"/> The turning effect of a force around a pivot
4	<b>Moment equation</b>	<input type="checkbox"/> $M = F \times d$ <input type="checkbox"/> Moment = Force x distance
5	<b>Elastic material</b>	<input type="checkbox"/> Will change shape when a force is applied but will return to its original shape when the force is removed
6	<b>Non-elastic material</b>	<input type="checkbox"/> Will change shape when a force is applied but will stay in its new shape when the force is removed
7	<b>Hooke's Law</b>	<input type="checkbox"/> The extension of an elastic object is directly proportional to the force applied to it
8	<b>Hooke's Law Equation</b>	<input type="checkbox"/> $F = k e$ <input type="checkbox"/> Force = Spring Constant x Extension
9	<b>Law of conservation of energy</b>	<input type="checkbox"/> Energy is neither created nor destroyed, only transformed from one type to another
10	<b>Different energy types</b>	<input type="checkbox"/> Thermal, sound, electrical, gravitational potential, elastic potential, nuclear, chemical, light, kinetic

11	<b>Deformation</b>	<input type="checkbox"/> Changes in an object's shape due to a force being applied
12	<b>Resultant force</b>	<input type="checkbox"/> The overall force acting on an object <input type="checkbox"/> Upward – Downward Force <input type="checkbox"/> Left – Right Force
13	<b>Velocity</b>	<input type="checkbox"/> Speed in a given direction
14	<b>Constant velocity</b>	<input type="checkbox"/> Moving at a constant speed in a given direction
15	<b>Stationary</b>	<input type="checkbox"/> Not moving
16	<b>Balanced forces</b>	<input type="checkbox"/> A pair of forces that are equal in size
17	<b>Unbalanced forces</b>	<input type="checkbox"/> A pair of forces where one force is larger than the other force
18	<b>Limit of proportionality</b>	<input type="checkbox"/> The point at which an elastic material will not return to its original shape
19	<b>Control variables</b>	<input type="checkbox"/> The variables that you keep the same in an investigation so that your results are valid

## 20. Hooke's Law



## 21. Example for calculating moments

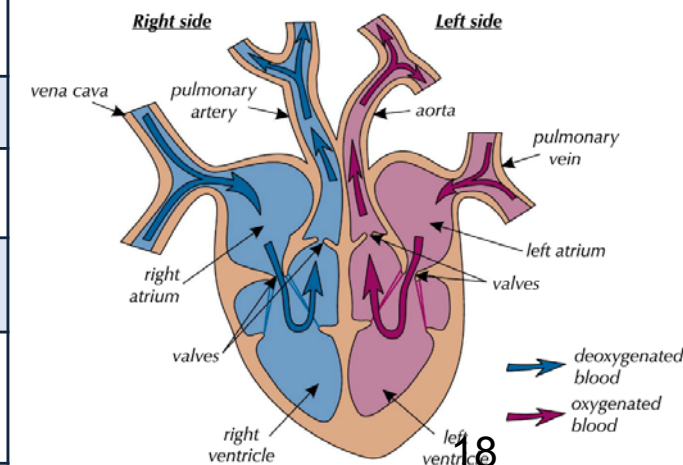


# Biology Topic 2: Organisation (Paper 1)

1	<b>Cell</b>	Building block of life
2	<b>Tissue</b>	A group of similar cells that work together to complete a function
3	<b>Organ</b>	A group of different tissues that work together to complete a function
4	<b>Organ System</b>	A group of organs working together to complete a function
5	<b>Iodine</b>	Turns blue/black when added to starch.
6	<b>Benedict's reagent</b>	Turns brick red when heated with reducing sugars (e.g. glucose).
7	<b>Biuret reagent</b>	Turns lilac when added to protein.
8	<b>Sudan III test</b>	Forms a bright red layer when mixed with lipids.
9	<b>Enzyme</b>	A protein molecule that acts as a biological catalyst.
10	<b>Substrate</b>	A molecule that is broken down by an enzyme.
11	<b>Active site</b>	The part of an enzyme that the substrate fits into.
12	<b>Amylase</b>	Enzyme that breaks down starch into sugars. Produced in the salivary glands and the pancreas.
13	<b>Protease</b>	Enzyme that breaks down proteins into amino acids. Produced in the stomach and the pancreas.
14	<b>Lipase</b>	Enzyme that breaks down lipids into glycerol and fatty acids. Produced in the pancreas.
15	<b>Bile</b>	A liquid that neutralises stomach acid & emulsifies fats. Produced in the liver and stored in the gall bladder.
16	<b>Denatured</b>	When the active site of an enzyme changes shape, so the substrate can no longer fit.
15	<b>Factors affecting enzyme activity</b>	<input type="checkbox"/> High temperatures cause enzymes to denature <input type="checkbox"/> Very high or very low pH cause enzymes to denature <input type="checkbox"/> Substrate concentration <input type="checkbox"/> Enzyme concentration
16	<b>Red blood cell</b>	Carry oxygen to body cells. Biconcave disc shape gives them a large surface area. Contain haemoglobin, which binds to oxygen.

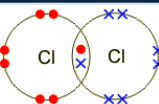
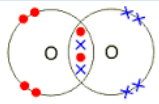
17	<b>White blood cell</b>	Part of the immune system, which defends us against infection by microbes. Some engulf microbes; others produce antibodies.
18	<b>Platelets</b>	Small fragments of cells, responsible for blood clotting.
19	<b>Plasma</b>	Liquid that carries cells, nutrients, hormones, water and urea.
20	<b>Arteries</b>	Blood vessels that take blood away from the heart. They have thick muscular walls and elastic fibres to cope with high pressure.
21	<b>Veins</b>	Blood vessels that take blood back to the heart. They have valves to prevent the backflow of blood and a large lumen.
22	<b>Capillaries</b>	Blood vessels that carry blood to every cell. They are one cell thick to provide a short diffusion distance.
23	<b>Coronary heart disease</b>	When the coronary arteries, which supply the heart with blood, are blocked by fatty deposits. This restricts the supply of oxygen to the heart and can cause heart attack.
24	<b>Stent</b>	A surgical device inserted into an artery to keep it open, as a treatment for heart disease.
25	<b>Statins</b>	A drug that reduces the amount of cholesterol in the blood, reducing the risk of heart disease. Some side effects – e.g. headaches / memory loss.
26	<b>Communicable disease</b>	Can be spread between people – e.g. measles and malaria.
27	<b>Non-communicable disease</b>	Cannot be spread between people – e.g. asthma and cancer.
28	<b>Cancer</b>	Uncontrolled cell division leading to the build-up of a tumour.
29	<b>Malignant tumour</b>	When tumour cells break off and spread to other parts of the body through the bloodstream, which can be fatal. Tumours that do not spread are called benign.

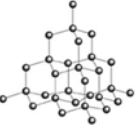
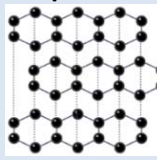
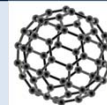
30	<b>Epidermal tissue</b>	Covers the surface of a leaf
31	<b>Palisade tissue</b>	Where most photosynthesis takes place in the leaf, as the cells have many chloroplasts.
32	<b>Xylem</b>	Tubes that carry water and mineral ions from the roots to the leaves. Made of dead cells and strengthened with lignin.
33	<b>Phloem</b>	Tubes that carry sugars from the leaves to other parts of the plant (known as translocation). Made of long cells with pores in each end.
34	<b>Stomata</b>	Pores in the lower epidermis that allow gases to diffuse in and out of the leaf.
35	<b>Guard cell</b>	Responsible for opening and closing the stomata. Stomata close at night to prevent water loss.
36	<b>Transpiration</b>	Loss of water from a plant. Water moves up the xylem and then evaporates from the stomata.
37	<b>Factors affecting transpiration</b>	<input type="checkbox"/> Light intensity <input type="checkbox"/> Temperature <input type="checkbox"/> Air flow <input type="checkbox"/> Humidity



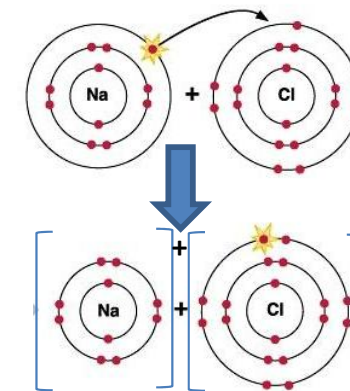


# Chemistry Topic 2: Structure & Bonding (Paper 1)

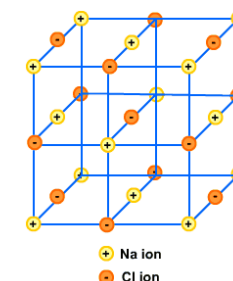
1	<b>Metal</b>	An element which loses electrons to form positive ions
2	<b>Non Metal</b>	An element which gains electrons to form negative ions
3	<b>Positive ion</b>	An atom that has lost electrons to gain a positive charge.
4	<b>Negative ion</b>	An atom that has gained electrons to gain a negative charge.
5	<b>Electrostatic</b>	The force between a positive and negative charge.
6	<b>Ionic Bond</b>	A bond formed by the electrostatic attraction between positive and negative ions.
7	<b>Ionic Lattice</b>	Hundreds of positive and negative ions arranged in rows, with strong electrostatic forces holding them together.
8	<b>High melting points</b>	A property of ionic compounds. This is because a lot of energy is needed to break the strong electrostatic attraction between the ions.
9	<b>Conduct electricity</b>	Ionic compounds conduct electricity when melted or dissolved in water, because the ions can move to carry a current.
10	<b>Aqueous</b>	When a substance is dissolved in water
11	<b>Covalent Bond</b>	When 2 atoms share a pair of electrons.
12	<b>Chlorine molecule</b>	
13	<b>Oxygen molecule</b>	
14	<b>Low melting points</b>	A property of covalent compounds. This is because little energy is needed to break the weak intermolecular forces between the molecules.

17	<b>Non-conducting</b>	A property of covalent compounds. There are no delocalized electrons to carry a current.
18	<b>Polymer</b>	Many small units (monomers) joined together with covalent bonds to form a large molecule.
19	<b>Diamond</b> 	<input type="checkbox"/> Each carbon atoms covalently bonded to 4 others <input type="checkbox"/> Very high melting point, due to strong covalent bonds. <input type="checkbox"/> Does not conduct electricity.
21	<b>Graphite</b> 	<input type="checkbox"/> Each carbon atom covalently bonded to 3 others <input type="checkbox"/> Weak bonds between the layers, allowing them to slide over each other. <input type="checkbox"/> Contains delocalised electrons, which allow it to carry an electrical current.
22	<b>Graphene</b>	A single layer of graphite – a layer of inter-locking hexagonal rings of carbon atoms one atom thick.
23	<b>Fullerene</b>	Hexagonal rings of 6 carbon atoms with hollow shapes – e.g. buckminsterfullerene forms a sphere. 
24	<b>Nanotubes</b>	Thin cylinders, with high strength and electrical and thermal conductivity. Could also be used for drug delivery into the body. Also used as lubricants and catalysts.
25	<b>Metallic Bonding</b>	Consists of rows of positive metal ions, surrounded by a 'sea' of delocalised electrons.
26	<b>Properties of metals</b>	<input type="checkbox"/> Conduct electricity because delocalised electrons carry a current <input type="checkbox"/> High melting and boiling point (see previous explanation) <input type="checkbox"/> Malleable because layers of ions slide over each other
27	<b>Alloy</b>	<input type="checkbox"/> A mixture of a metal with another element – e.g. steel is an alloy of iron and carbon <input type="checkbox"/> Harder than pure metals as different sized atoms stop the layers sliding over each other

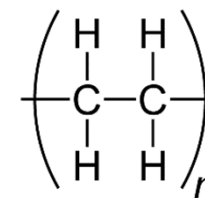
## Ionic bonding:



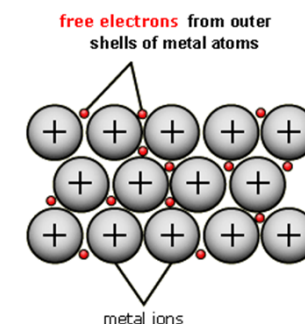
## Ionic lattice:



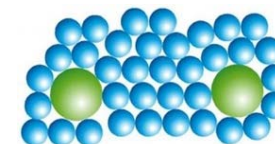
## Polymer:



## Metallic bonding:



## Alloy:



# Physics Topic 1 – Energy

(Paper 1)

## Energy

1	Energy stores	Thermal (heat) – Kinetic (moving) – Gravitational potential (GPE) – Elastic potential – Chemical (e.g. batteries, food, fuel) – Magnetic – Electrostatic – Nuclear
2	Energy transfers	Energy is stored in objects and transferred by waves, electric current, heating or when a force moves an object.
3	Conservation of Energy	Energy can be transferred usefully, stored or dissipated, but never created or destroyed.
4	Joules (J)	The unit of energy. 1kJ = 1000J
5	Dissipated	When energy is transferred in a way that is not useful – e.g. to the thermal energy store of the surrounding air particles.
6	Energy transfer in falling objects	<input type="checkbox"/> GPE decreases and kinetic energy increases. Energy lost from GPE store = Energy gained in kinetic energy store. <input type="checkbox"/> On impact, energy is transferred to the thermal energy store of the surroundings.
7	Energy transfer in bungee jumping	<input type="checkbox"/> When the rope is slack GPE is transferred to kinetic <input type="checkbox"/> When the rope tightens it slows the fall, kinetic energy decreases and the elastic potential energy store of the rope increases
8	Energy in Pendulums	A pendulum has maximum kinetic energy (travelling fastest) in the middle of the swing, at either side it has maximum GPE.

## Equations

1	Gravitational Potential Energy (GPE)	As an object is lifted work is done to overcome gravitational force on the object, this energy is stored as GPE.
2	Change in GPE	= weight (N) x change in height (m) = mass (kg) x gravitational field strength(N/kg) x change in height (m)
3	Kinetic Energy	$Kinetic\ energy = \frac{1}{2} \times mass\ (kg) \times speed\ (m/s^2)$
4	Work Done	Work is done when a force makes an object move. The force transfers energy, the amount of energy transferred = work done.
5	Work Done	Work Done (J) = Force (N) x distance moved (m)
6	Friction	Work done to overcome friction is transferred as energy to the thermal store of the objects that rub together.
7	Wasted Energy	Wasted energy is dissipated (spread out) increasing the thermal energy store of the surroundings.

8	Efficiency	$= \frac{\text{useful output energy transferred by device}}{\text{total input energy supplied to the device}} = \frac{\text{Useful Power}}{\text{Total Power}}$
9	Improving Efficiency	<input type="checkbox"/> Streamline objects to reduce air resistance <input type="checkbox"/> Use low resistance wires to reduce heating effect <input type="checkbox"/> Lubricate moving parts to reduce friction <input type="checkbox"/> Tighten loose parts to reduce vibration noise
10	Power (Watts)	The rate an appliance transfers energy. $= \frac{\text{energy transferred to the appliance (J)}}{\text{time taken for energy to be transferred (s)}}$
11	Specific Heat Capacity	Energy needed to raise the temperature of 1kg of a substance by 1°C.
12	Thermal Conductivity	The lower the thermal conductivity the better at insulating
13	Thermal Insulators	Loft insulation, cavity wall insulation and double glazed windows all reduce heat loss from buildings.
Energy Resources		
1	Renewable	An energy resource is one that is being replenished as it is used – e.g. wind power.
2	Non renewable	An energy resource that cannot be replenished, so will run out – e.g. coal.
3	Uses of energy resources	<input type="checkbox"/> Transport <input type="checkbox"/> Heating <input type="checkbox"/> Generating electricity
4	Coal, Oil, Gas	<input type="checkbox"/> Are burnt heating water which turns to steam turning a turbine which turns a generator producing electricity. <input type="checkbox"/> Key advantages: Reliable, gas is the quickest to start up <input type="checkbox"/> Key concerns: Non-renewable & release CO <sub>2</sub> , which causes global warming, coal mines are unsightly
5	Nuclear	<input type="checkbox"/> Fission produces heat which turns water to steam turning a turbine and a generator producing electricity. <input type="checkbox"/> Key concern: Long start up time, produces dangerous waste, expensive to decommission (shut down)
6	Biofuel	<input type="checkbox"/> Fuel made of living things e.g. animal waste, waste vegetable oils and plants. <input type="checkbox"/> Is carbon-neutral as the CO <sub>2</sub> the organism takes in balances the amount released when the fuel is burnt. <input type="checkbox"/> Key concern: Leads to deforestation to create farmland
7	Geothermal	<input type="checkbox"/> Hot rocks underground produce heat which turns water to steam turning a turbine and a generator producing electricity. <input type="checkbox"/> Key concern: Can only be built in volcanic areas
8	Tidal	Floating generators move up and down, the motion causes the generator to produce electricity. Key concern = Spoils view & disrupts habitats
9	Hydroelectric	Falling water turns a turbine producing electricity, few locations suitable for this in the UK. Key concern = Leads to large areas of land being flooded.

# Y9 Spanish – Cycle 2

## Technology and Holidays

1) La tecnología		Technology									
Uso / utilizo		I use									
Mis amigos y yo usamos		My friends and I use									
Las redes sociales		Social networks									
El ordenador		Computer									
El portátil		Laptop									
2) ¿Cuándo?				When?							
Casi siempre uso mi móvil		I almost always use my mobile									
Dos veces a la semana utilizo el portátil		Twice a week I use the laptop									
Una vez a la semana		Once a week									
Dos veces a la semana		Twice a week									
Todos los días		Every day									
Muy a menudo		Very often									
Rara vez		Rarely									
Casi siempre		Almost always									
3) Suelo...				I usually...							
Suelo usar mi móvlii		I usually use my mobile									
Para...		In order to...									
Subir vídeos		To upload videos									
Colgar fotos		To post photos									
Compartir fotos		To share photos									
Buscar música		To look for music									
Descargar música		To download music									