

WILMINGTON  
GRAMMAR SCHOOL FOR BOYS

# Knowledge Organisers

## Year 9 – Term 2

Name	
Form group	

The knowledge organisers in this booklet are full of the **essential facts** and **information** that you need to know and be able to recall in order to 'master' Term 2's units/topics in each of your subjects.

To achieve this, you will need to take in the facts and information and work at moving it all from your short to long-term memory.

We have included the reminder about how to self-quiz and various revision techniques.

Good luck in your learning,

Miss Price

Assistant Headteacher in charge of Teaching and Learning

*Knowledge is Power*

## How to self-quiz: A Reminder!



### **READ**

Read the specific facts/information you have been asked to focus on



### **SAY**

Say it in your head/out-loud (if you are at home and would like to)



### **COVER**

Cover the section of your knowledge organiser



### **WRITE**

Write out everything you can remember from what you have read and said to yourself



### **CHECK**

Check over what you have written – check every word.

If you have everything correct, tick your work with a green pen.

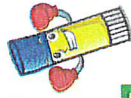
If you have made mistakes in word choice or spelling or have left words/information out, use the green pen to correct your work: This will help you identify the gaps in your knowledge and what you must spend time going over.

Repeat the process until you are able to write out all the facts/information, making no errors. We recommend at least 30 minutes in order to achieve this.

For an example of self-quizzing in action, please see the following instructional video:



# Making knowledge stick!



Get a family member/friend to test you (remember - word for word; number for number!)

**Focus and be positive** - say to yourself you can learn what you've been asked to/want to learn, because you can! It is proven that this makes a difference as you're more receptive to the knowledge going in!

**Make flash cards** (for example, have the term on one side and the definition on the other.) Please see this video that shows you how you can effectively use them over the course of a week or set amount of time to embed knowledge:

<https://www.youtube.com/watch?v=C20EvKtdjwQ&t=87s>

**Incorporate mnemonics** (patterns of letters, ideas, or associations which assist in remembering something) to **recall longer strings of information:** e.g. My Very Excellent Mother Just Served Us Noodles (or Nachos) = The planets in order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune

**Chunk your learning** - DON'T leave it until the night before it's due (if you do, you may know it a bit and be able to recognise the words, phrases and equations etc. But they won't be committed to memory.) Start early and do little and often; distributed practice is much more effective!

**Test yourself a lot** - in all these ways and self-quizzing. When you do so and answer incorrectly, not only are you more likely to remember the right answer after you look it up... you'll also remember that you didn't remember. (Getting something wrong is a great way to remember it the next time, especially if you tend to be hard on yourself.) That's why you need to start early and do little and often, and keep retrieving the same and old knowledge!

Say the words, definitions, formulae etc. **OUT-LOUD:** This turns you from passive to active in the learning process. Research shows that producing words aloud during study, relative to simply reading them silently, improves explicit memory.

Build a **'MEMORY PALACE'** (also known as method of loci; memory journey and mind palace technique): This memory aid was created thousands of years ago by the ancient Greeks. It's used by world record-holding memory champions (and Sherlock Holmes!) With a little planning and practice, you can build a memory palace, too. *Please see this video of a man helping an 8 year-old boy to know all the US presidents using this technique!*

[https://www.youtube.com/watch?v=aT7\\_g2E3q3Q&t=452s](https://www.youtube.com/watch?v=aT7_g2E3q3Q&t=452s)

# Two others for us to try out!

After self-quizzing and employing different techniques to move your essential facts and information into your working and then long-term memory, put your knowledge to the test with a...

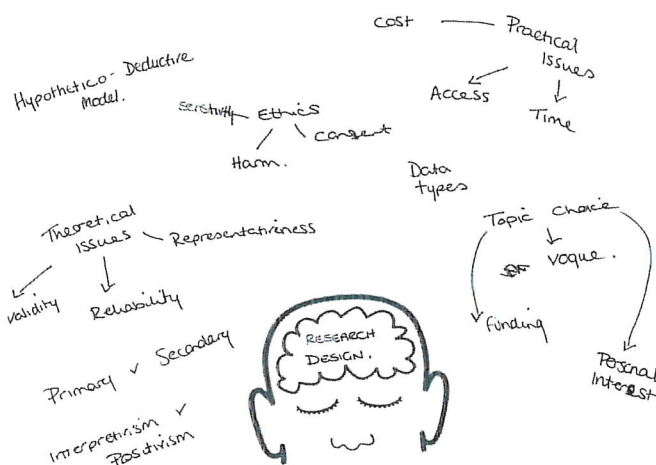
## Brain Dump!

### How?

- Take a blank piece of paper
  - Write down (DUMP!) everything you know about the topic
    - No books
    - No notes
    - Be as messy as you like
  - Time limit of 2 minutes
  - After, put a star next to the things you think will be useful to revise.
  - If you are unsure of anything you have written, try to explain each term or concept to someone and if you cannot then you need to revise it.
  - Use your notes to identify areas you have not included in your brain dump. These should be revised too!
- 
- Once you have your brain dump you should be able to elaborate on the content, being able to describe and explain things in detail.
  - You should be able to make connections amongst the ideas.
  - You should identify anything you cannot explain or have missed.
  - You will want to go back and self-quiz and use our other techniques to help you to embed and retrieve the knowledge you have difficulty remembering or explaining or that you did not add to your original brain dump!



Examples of brain bumps:



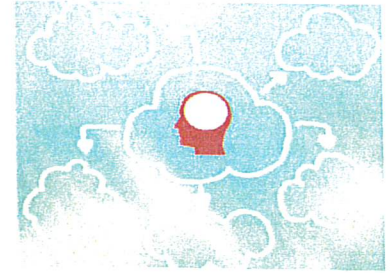
Here students have 'brain dumped' and then created revision resources (flash cards) to master content



# Mind Maps!

## How?

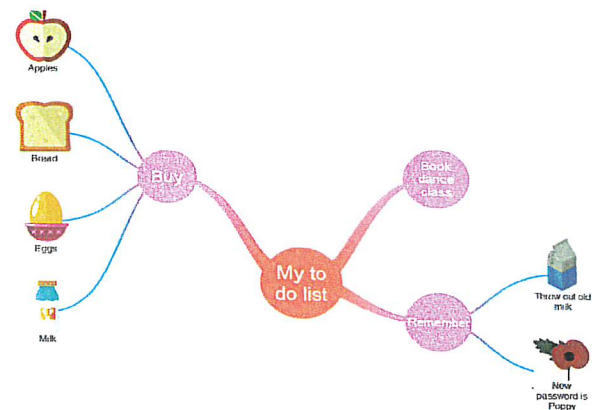
- Put the topic in the centre of a blank page
- Add big branches with the main ideas/themes of the topic
- Add small branches to these with more detail
- Try to write only 1 or 2 words per branch
  - Focus on the key points only
- Add an image to each branch (dual code\*):



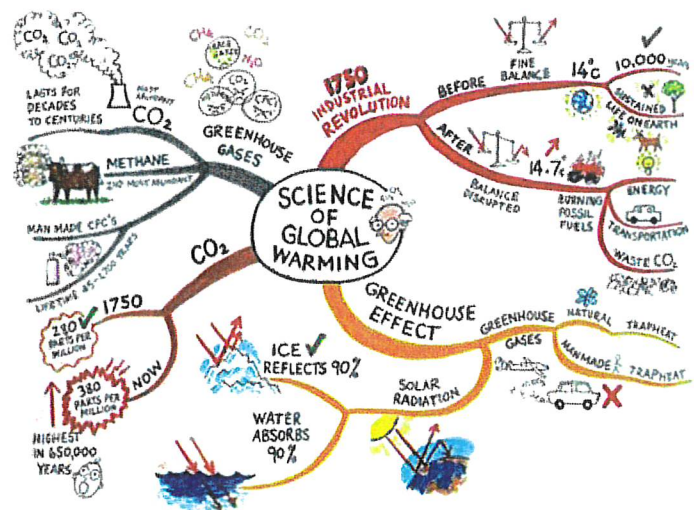
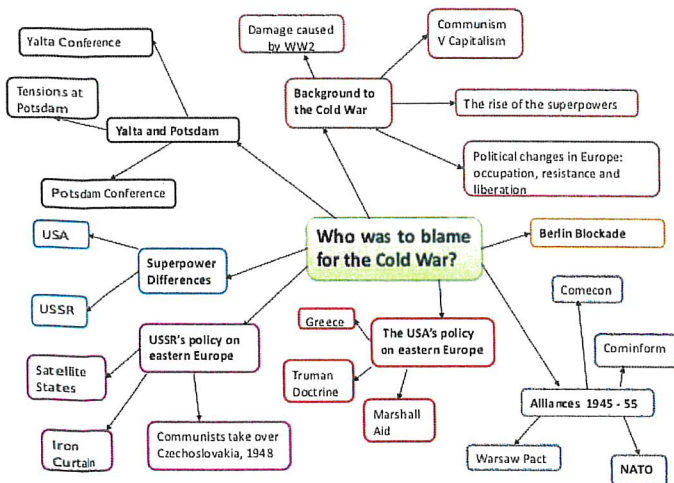
!!!The more creative, the better! Mind mapping can benefit memory retention when we create maps that involve association... The more imaginative and tailored an idea is to an individual, the more it will benefit their memory!!! ... As a simple example, let's work to remember a small 'to do' list:

- Buy apples
- Throw out old milk
- Remember the Internet password is now 'Poppy'
- Book a dance class

To help them remember items on their list, the individual who has created this mind map uses a picture of a 'Pink Lady' apple as a retrieval cue (trigger) because these are their favourite. Furthermore, the individual needs to remember that they have changed their password to 'Poppy', as another cue (trigger), so uses a picture of a remembrance poppy.



More examples of mind maps:



## Top tips!

- 1) ! Use different colours for each branch of your mind map. This helps your brain distinguish between each of the different information stems.
- 2) ! Use 'dual coding'\* in your mind maps. Dual coding means using both words and images to record the information you need to remember.



## WGSB Art

# Yr 9 Knowledge Organiser Term 1 & 2



### Stephen Wiltshire Facts

Stephen Wiltshire is an artist who draws detailed cityscapes.

Stephen was born in London, United Kingdom to West Indian parents on 24th April, 1974.

As a child he was mute, and did not relate to other people. Aged three, he was diagnosed as autistic. He had no language and lived entirely in his own world.

Stephen started drawing at the age of five and sold his first work to the Prime Minister of the United Kingdom at the age of eight.

Sir Hugh Casson, President of London's Royal Academy of Art, referred to him as the best child artist in Britain.

He learned to speak fully at the age of nine.

His only has to look at a view for a few minutes then he can draw it all from memory

He travels and exhibits all over the world

He continues to draw every day and his motto is 'Do the best you can and never stop'.

### SUNGA PARK FACTS

<b>Birthplace</b>	South Korea
<b>Current home town</b>	Bangkok, Thailand
<b>Training</b>	She is self taught
<b>Profession</b>	Artist/Illustrator
<b>Skills</b>	Cell animation, web design, character design, flash animation, editorial design, graphic design, illustration.
<b>Interests</b>	Travel, architecture, portraits
<b>Countries visited</b>	Croatia, Scotland, Belgium, Morocco, India, France, China, Czech Republic,
<b>Materials used</b>	Watercolour, oil paint & pen
<b>Concepts in her work</b>	She feels that being able to travel all over the world is like a dream, which is why her architectural works represent dream like memories of the places she has visited.
<b>How she uses colour</b>	She chooses colours based on how well they go with each other and tries to avoid following the realistic colours of architecture.
<b>How she uses materials</b>	She uses washes of paint (a wash is a thin watery layer of paint) and fades the images out softly. She uses pen in an illustrative style to add details.



#### Career: Illustrator

Graduates can work in many different areas, particularly within the creative arts and design sector. Employers include advertising and marketing agencies, publishers, and graphic design, web design or animation companies. Most illustrators are self-employed and generate their own work based on client needs.

<https://nationalcareers.service.gov.uk/search-results?SearchTerm=illustrator&JobProfileUrl=architect>

#### Career: Architect

Architects design new buildings and the spaces around them, and work on the restoration and conservation of existing buildings.

<https://nationalcareers.service.gov.uk/job-profiles/architect>

### HUNDERTWASSER FACTS

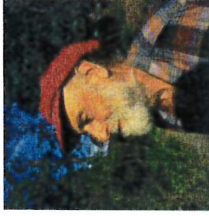
Born in 1928 in Vienna, Austria, and died in 2000 on board the QE2 ship at sail in the Pacific

He referred to himself as a painter, architecture doctor, ecological activist and philosopher.

He was fascinated by spirals, and called straight lines "godless and immoral" and "something cowardly drawn with a rule, without thought or feeling". He once said 'The straight line leads to the downfall of our civilisation'

Hundertwasser first achieved fame for his boldly-coloured paintings, but he is more widely known for his individual architectural designs.

At the centre of his ecological activities were tree planting and greening campaigns, the restoration of natural cycles, the protection of water and the fight for a waste-free society.



**Watercolour tin**  
Water soluble solid tablets of colour



**Fineliner**  
A fine nibbed pen for detail drawing



**Fine felt pen**  
A fine felt pen this is useful for creating soft 'washy' lines

## Year 9 Business and Finance

### Personal budgets and spending choices

**Consumer spending:** Spending by ordinary people.

**Infrastructure:** The important physical systems of a nation – for example, transport, communication, water and sewage, and power

**Non-essential spending**–: Spending on items that we want, but which are not essential to surviving. Examples would include holidays and luxury items such as an iPad.

**Unexpected spending:** When a need to spend arises that was not expected; not emergencies, but times when there is a need to buy or pay for something that wasn't planned for in advance.

**Key Words and Phrases**

Boolean Logic – An expression that can only have a true or false value

Binary – Base 2 coding system, using two values 1 or 0

Hexadecimal – Base 16 number system, 0-9 and A-F

Arithmetic Operations – Used to undertake standard mathematical calculations(+, -, /, \*, ^, %, )

Logic Gates – Electrical circuits which have two states(on/off). The three main gates are AND, OR and NOT

Bit – One binary digit

Byte – Eight binary digits

ASCII – A 7-bit character set used for representing English keyboard characters

Overflow – an error caused when the processor does not have enough bytes available to process an instruction

Pixel – Smallest individual dot that can be displayed on a computer monitor. An image is made up of many pixels

Resolution – How many pixels are present over a standard length. High resolution means a large number of pixels per inch.

Colour depth – How many bits are used to indicate the colour of a single pixel

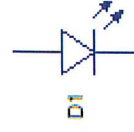
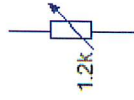
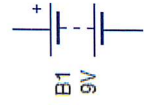
Sample rate – The number of samples recorded in any given period of time. This is measured in hertz



# YEAR 9 ALARM

## KNOWLEDGE ORGANISER

Keyword	Definition
Proton	a stable subatomic particle occurring in all atomic nuclei, with a positive electric charge equal in magnitude to that of an electron.
Electron	a stable subatomic particle with a charge of negative electricity, found in all atoms and acting as the primary carrier of electricity in solids.
Current	a flow of electricity which results from the ordered directional movement of electrically charged particles
Potential Difference	Potential difference is the difference in the amount of energy that charge carriers have between two points in a circuit
Resistance	Resistance is a measure of the opposition to current flow in an electrical circuit. Resistance is measured in ohms, symbolized by the Greek letter omega ( $\Omega$ )
Ohm's Law	a law in electricity that states that the current in a circuit is equal to the potential difference divided by the resistance of the circuit.
V = Volts	The unit of measurement for voltage
I = Amps/Amperes	The unit of measurement for current
R = Ohms	The unit of measurement for resistance
Push to Make Switch	A Push to Make Switch is a type of electrical switch where the connection inside the switch is wired to be normally open. When the switch is compressed the connection is made which allows the electricity to flow and the device the switch is connected to switch "on".
Buzzer	An electrical device that makes a buzzing noise and is used for signalling.
LED - Light Emitting Diode	LED stands for light emitting diode. LED lighting products produce light up to 90% more efficiently than incandescent light bulbs.

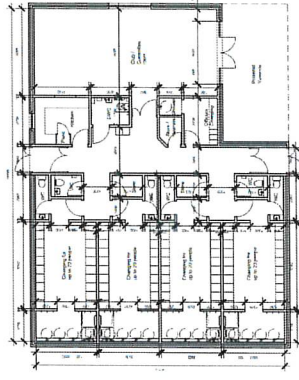
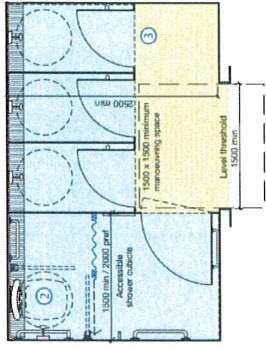




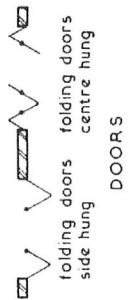
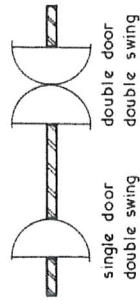
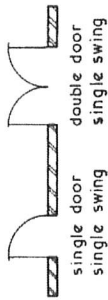
Keyword	Definition
Aeration	Incorporating air into a mixture to give a light fluffy texture
All-in-one	A method of cake making where all ingredients are mixed together at the same time
Beating	This is the rigorous mixing of ingredients using a wooden spoon, electric whisk, food mixer or food processor to thoroughly combine ingredients and to incorporate air
Binary fission	Process by which bacteria replicate and multiply.
Bridge hold	Creating an arch over the ingredient with your hand so the knife can fit underneath to safely chop ingredients
Buttercream	A soft, pipeable or spreadable mixture of butter and icing sugar used as a filling or topping for a cake.
Coating	One of the functions of eggs where they are used to stick flour or breadcrumbs to an ingredients such as fish or chicken.
Choux pastry	A cooked paste or light dough containing eggs, water, butter, and flour that puffs up when baked into a nearly hollow shell
Claw grip	A chopping techniques where your fingers are curled inward and gripping the food with the fingernails, the side of the knife blade should rest against the knuckles, used for slicing ingredients
Coagulation	The change in the structure of protein from a liquid form to solid or a thicker liquid, brought about by heat, mechanical action or acids
Core cooking temperature	The temperature at which foods need to reach in order to be cooked thoroughly. It should be over 75 °C and measured at the thickest part of the food.
Creaming	Mixing butter and sugar together on a moderately high speed until well blended, fluffy and pale yellow., it is often the first step in a cake recipe before the other ingredients are added.
Cross Contamination	The process by which bacteria are transferred from one substance or object to another, with harmful effect. Transferring bacteria from raw to cooked food is the cause of most infections.
Danger Zone	The temperature range with which bacteria multiplies rapidly (5°C -63°C)
Food Hygiene	The conditions and measures necessary to ensure the safety of food from production to consumption
Food poisoning	Illness caused by bacteria or other toxins in food, typically with vomiting and diarrhoea.
Gelatinisation	When starch particles swell and burst, thickening a liquid
Grilling	A form of cooking that involves dry heat applied to the surface of food, commonly from above or below
Hot holding	The process of keeping the cooked food at a safe temperature while it is ready for service
Macro nutrients	The nutrients we need in larger quantities, these include fat, protein and carbohydrate
Micro nutrients	The nutrients we need in small quantities these include vitamins and minerals
Pathogenic bacteria	Bacteria which causes disease, unlike many bacteria which are harmless and often even beneficial to health. Common food borne bacteria include Shigella, Campylobacter and Salmonella
Personal Hygiene	Ensuring people are clean and ready to handle food in order to avoid any form of contamination
Piping	To squeeze a pastry bag in order to force frosting or other paste-like mixtures through the tip of the bag for the purpose of decorating or creating special shapes.
Raising agent	A substance added to a food product that makes it rise when cooked
Rubbing in	To coat flour grains with fat by gently rubbing between the fingertips and thumbs, continuing until the mixture resembles coarse breadcrumbs.
Salmonella	A common bacterial disease that affects the intestines. Humans become infected most frequently through contaminated water or food such as chicken and eggs
Shortcrust pastry	Crumbly pastry made with flour, fat, and a little water, typically used for pies, flans, and tarts
Shortening	The ability of a fat to produce a characteristic crumbly texture to baked products, i.e. pastry
Stir fry	To cook pieces of meat or vegetables quickly in a small amount of hot oil, moving them around all the time
Vegan	People who do not eat any product produced by an animal, this includes, meat, fish, poultry, dairy, eggs and honey
Vegetarians	People who do not eat meat, fish, poultry and in some cases eggs
Whisking	Blend ingredients together quickly or to incorporate air into ingredients such as egg whites or heavy cream in order to increase the volume of the mixture
Wok	A traditional Asian cooking pot shaped like a large deep bowl with a long and short handle or two short handles on opposite sides

# YEAR 9 SPORTS CLUBHOUSE KNOWLEDGE ORGANISER

FOOTBALL: Clubhouse



Keywords	Definition
Water saving measures	Measures such as dual flush toilets, push taps to help reduce the use of water
Scale	The ratio of a distance on the map to the actual distance in real life. The quantitative relation between two amounts showing the number of times one value contains or is contained within the other
Plan view	A view of an object looking straight down on it from above.
Wall	An upright side of a building or room
Window	An opening in the wall or roof of a building or vehicle, fitted with glass in a frame to admit light or air and allow people to see out
Door	A hinged, sliding, or revolving barrier at the entrance to a building, room, or vehicle, or in the framework of a cupboard
Building Symbols	A mark or character used as a conventional representation of elements of a building
British Standards Institute	BSI produces technical standards on a wide range of products and services and also supplies certification and standards-related services to businesses
Sustainability	Avoidance of the depletion of natural resources in order to maintain an ecological balance
Passive design	To design a building to use the planets resources such as the sun, rain and wind to provide energy for the building
Renewable energy	Energy such as wind, solar, biomass, ground source heat pumps used to run a building.
Elevations	A particular side of a building either N/S/E/W
CAD	<b>Computer-aided design (CAD)</b> is the use of computers (or workstations) to aid in the creation, modification, analysis, or optimization of a design
Virtual Model	A digital representation of a physical object



DOORS



## Year 9 Drama

### Key Terminology Autumn 2

<u><b>Drama Skills</b></u>	
<b>Physical Theatre</b>	This is where actors use their bodies to create objects and shapes. Physical Theatre can also be a way of telling a story through physical movement.
<b>Soundscape</b>	Where the performers create sounds to show an object or location.
<b>Thought Track</b>	This is where a character reveals their inner most thoughts and feelings to the audience.
<b>Role Play</b>	Role play is taking part in a performance with speech to show a character and story.
<b>Hotseating</b>	An actor sits in the 'hot-seat' and answers questions in character. This helps the actor understand their character and get into role when performing.
<b>Still image</b>	This is a frozen picture which communicates meaning. It can provide insight into character relationships with a clear focus upon use of space, levels, body language and facial expression.
<b>Marking the moment</b>	This is where a moment is highlighted for dramatic effect to show it is a significant part of the play. This can be achieved through still images, slow motion, thought tracks and some technical elements like lighting.
<b>Narration</b>	A narrator informs the audience of the events taking place on stage. The narrator can be separate from the action or in the scene as a character talking to the audience about the events.
<b>Atmosphere</b>	Atmosphere is the mood or feeling created in a performance.
<b>Status</b>	Status is the level of power or influence a character has.
<b>Genre</b>	Genre is a type of style or category in Drama, for example comedy and tragedy.
<u><b>Characterisation</b></u>	
<b>Facial Expressions</b>	A facial expression conveys an emotion that tells us about the character and the way they react to the situation. The actors use their eyes, mouth and eyebrows to convey emotion.
<b>Gesture</b>	Gesture is the way people communicate with their hands or other parts of the body. It can be used to show a character's emotions and personality.
<b>Body Language</b>	Body language includes posture and stance and can convey a character's feelings or personality.
<b>Voice</b>	Your voice can communicate the age, temperament, personality, and the status of your character. Projecting your voice in a performance is vital in order for the audience to understand what is happening.
<b>Proxemics</b>	Proxemics is how close or near you are to others on stage which can help to communicate meaning. It is also about where you position yourself on the stage so the audience can see you and others clearly.

## Year 9 English Knowledge Organiser, Term 2

Key Connectives	Contrasting	Listing Points	Summing up	Cause and Effect
<p><b>Examples</b> For example For instance Such as ...as can be seen ...as is shown by Take the case of... This can be proven by...</p>	<p><b>Contrasting</b> However On the other hand ...although... Despite this ... On the contrary... Instead... As for... ...whereas... ...while...</p>	<p><b>Listing Points</b> Firstly, secondly, finally In the first place To begin with On top of this In addition to this More importantly Additionally ...also ...as well Furthermore Another</p>	<p><b>Summing up</b> In conclusion... In summary... To sum up... Overall... On the whole... In brief... To conclude... So, to round off... Having reviewed... After weighing up the evidence...</p>	<p><b>Cause and Effect</b> ...so... As a result of... ...because... This means that... Due to the fact that... ...due to... ...therefore... ...caused... This caused...</p>
<p><b>Key Words and Techniques</b></p> <ul style="list-style-type: none"> <li>Identity (n.) the individual characteristics by which a person or thing is recognised. (Identify - verb)</li> <li>Culture (n.) the total of the inherited beliefs, ideas, values, and knowledge, which constitute the shared bases of social action. (Cultural -adj.)</li> <li>Nationality (n.) the state or fact of being a citizen of a particular nation; a body of people sharing common descent, history, language, etc. (national/national - adj.)</li> <li>Heritage (n.) something inherited at birth, such as personal characteristics, status, and possessions; something handed down through tradition.</li> <li>Legacy (n.) something handed down or received from an ancestor or predecessor.</li> </ul>	<ul style="list-style-type: none"> <li>Empathy (n.) the power of understanding and imaginatively entering into another person's feelings. (empathetic -adj.)</li> <li>Tolerate (v.) to treat with indulgence, openness or patience. (Tolerant - adj. / tolerance n.)</li> <li>Race (n.) a group of people of common ancestry, distinguished from others by physical characteristics, such as hair type, colour of eyes and skin, stature, etc. <i>Principal races are Caucasoid, Mongoloid, and Negroid.</i> (Racial - adj.)</li> <li>Prejudice (n.) an opinion formed beforehand, esp an unfavourable one based on inadequate facts; intolerance or dislike for people of a specific race, religion, etc. (prejudiced - adj.)</li> </ul>	<ul style="list-style-type: none"> <li>Discrimination (n.) to single out a particular person, group, etc, for special favour, or esp. disfavoured, often because of a characteristic such as race, colour, sex, intelligence, etc. (discriminate - verb)</li> <li>Unity (n.) The state or quality of being one; oneness; harmony, concord. (unify - verb)</li> <li>Humanity (n.) the human race; the quality of being human; kindness or mercy. (human - adj.)</li> <li>Diversity (n.) the state or quality of being different or varied.</li> </ul>	<ul style="list-style-type: none"> <li>Alliteration: words beginning with same letter sounds to create a notable emphasis on words - "dark dreary dreams"</li> <li>Cacophony: harsh sounds in order to make a discordant sound. - "dark knuckles wrapping across bricks" (often Ks, Ts, Cks)</li> <li>Allegory: something symbolic, that can be interpreted to reveal a hidden meaning, typically a moral or political message.</li> <li>Ambiguity/Ambiguous: a word or idea meaning more than one thing to provoke thought.</li> <li>Rhetorical Question: a question intended to provoke thought without expecting an answer.</li> </ul>	<ul style="list-style-type: none"> <li>Hyperbole: an over the top exaggeration for effect.</li> <li>Metaphor: a direct comparison of two things. States one thing is or acts as another without using the words 'like' or 'as'</li> <li>Oxymoron: two words placed together with differing meanings to create a new meaning - 'bitter sweet'</li> <li>Personification: describing an inanimate object or animal with human qualities.</li> <li>Simile: comparing two or more objects with words 'like' or 'as'.</li> </ul>

**Key Words**

**Rock Armour:** Large boulders or blocks of concrete dropped along the beach to reduce cliff erosion.

**Storm Surge** – flooding at the coastline brought about by an extreme low-pressure system.

**Soft engineering** does not involve building artificial structures but takes a more sustainable and natural approach to managing the coast.

**Beach Nourishment:** Sand is pumped onto an existing beach to build it up.

**Dune Nourishment:** Marram grass planted on sand dunes stabilises the dunes and helps to trap sand to build them up.

**Hard engineering** involves building artificial structures which try to control natural processes.

**Sea Walls:** Concrete walls that are placed at the foot of a cliff to prevent erosion. They are curved to reflect the energy back into the sea.


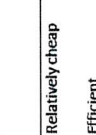
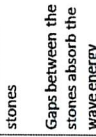
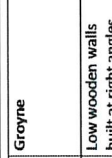
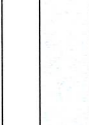
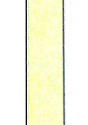
**Groynes:** Wooden or rock structures built out at right angles into the sea.

**Revetments:** angled wooden or concrete ramps placed on the beach to slow down waves.

**Managed retreat:** allowing a coastline to gradually flood over time by letting nature take over.

**Sea level rise**-the gradual increase in the height of sea-level brought about by expanding oceans and ice pack melting.

**Key Learning Concepts/Facts**

Name	Sea Wall	Rip-Rap	Gabions	Groynes	Beach building	Offshore breakwater
<b>How does it work?</b>	A concrete wall placed in front of the cliffs which can be curved or straight. Deflects wave energy back into the next wave.	A barrier of large rocks protecting the coast Absorbs wave energy in gaps between boulders	Strong wire baskets filled with hard stones Gaps between the stones absorb the wave energy	Low wooden walls built at right angles across the beach Trap sand moving along the beach by LSD and build up a beach to absorb waves energy	The beach is covered with material that has been dredged from the sea	Located in the sea and slows down the waves so they have less energy
<b>Advantages</b>	Strong and lasts a long time Efficient	Relatively cheap Efficient	Relatively cheap Can trap sand, so they look more natural	Cheaper than sea walls Keeps a beach for tourists	Keeps a nice beach for tourists	Doesn't leave a build structure on beach
<b>Disadvantages</b>	Expensive Not attractive Harder to get to the beach	Expensive if rock is imported Not attractive Hard to get to the beach	Not as effective as a sea wall Shorter life span (rust) Unattractive	Beaches further along the coast may lose their supply of sand as LSD is restricted	It is expensive as it has to keep being replaced	Marine wildlife can be affected
<b>Picture</b>						

## Year 9 - Term 2 KO - 'We could have won without the Empire'

### Skills and vocabulary

**Conceptual focus:**  
Empathy

When taken together both sources allow an historian to understand...

Fundamental (if it laid the foundations for something)

Crucial (If without it, things would not have happened in the same way)

Critical (might play a small part but ultimately an important part in causing change or leading to a different outcome)

A.R.K. - Source and Interpretation analysis structure

I.D.E.A. - Paragraph structure for medium and extended writing

<u>Key terms</u>	<u>Definitions</u>
Blitzkrieg	German tactic using tanks, planes and troops to launch a swift, lightning attack.
Blitz	German air raids on major British cities in 1940-41.
Censorship	Limiting access to information, ideas or books in order to prevent knowledge.
Human Rights	The basic rights all people should have, such as education, justice and freedom of speech.
Evacuation	Moving from a dangerous place to a safer place. For example, being taken from places at risk during war such as cities, to safer places, such as the countryside.
Total War	The idea that all members of a nation are involved in the war effort, from soldiers fighting on the front, to civilians producing armaments in factories.
Anti-Semitism	is hostility to, prejudice towards, or discrimination against Jews.
Fascism	Anti-democratic system of government developed by Mussolini in Italy and Hitler in Germany.
Persecution Ghetto	The unfair or cruel treatment of someone because of their race, religion or political beliefs. A small, restricted area of a town where Jews were forced to live by the Nazis.
Rationing	Officially limiting the amount of items such as food allowed to each person during wartime.
Scapegoat	A person who is blamed for wrongdoings or mistakes.
Synagogue Holocaust	A building in which Jews meet for religious worship. The commonly known name for the Nazis' attempt to wipe out the Jewish race.

**A.R.K (for source analysis, look to write at least a sentence on each aspect) ANSWER the question, REFER to the source/question, use KNOWLEGDE to expand on your point.**

<u>Key dates</u>	<u>Description</u>
1914-World War One begins	after the assassination of Franz Ferdinand, the alliance system sees all of the European powers sucked into war
July 1916-Battle of the Somme	The 1 <sup>st</sup> day is the worst day in British military history
1930 - Great Depression	A time when there was high worldwide unemployment and poverty.
1933 - Hitler became German Chancellor.	This began the road towards WW2 as Hitler began to rearm Germany up to 1939.
1939 - Nazi-Soviet Pact and outbreak of WW2.	Hitler and Stalin formed a non-aggression pact and Germany invaded Poland, Britain declared war on Germany.
1940 - May - Dunkirk	Evacuation of Allied troops off the beaches of France by the British navy and civilian boats.
1940 - July - September - Battle of Britain	Air battle over British skies to prevent Hitler army from invading Britain.
1941 - June - Operation Barbarossa	Hitler broke his treaty with Stalin and launched an invasion of the USSR.
1941 - December - Pearl Harbour	Japanese air force bombed the American Pacific naval base in Hawaii, destroying battleships and planes.
1942 - June - Battle of Midway.	Battle between the US and Japanese air force and navies. The Japanese were defeated.
1942, July, Battle of Stalingrad (up to Feb 1943).	Soviet forces defeated the German 7 <sup>th</sup> army at the Russia city of Stalingrad. The Germans were now slowly pushed out of the USSR.
1944: D-Day in Europe	Allied forces land in France, this begins 'Operation Overlord' - the desire to push back and defeating Nazi Germany.
1945 (April) Hitler commits suicide.	Germany surrenders bring an end to the war in Europe.
1945 (August) Atom Bombs used on Japan.	nuclear weapons used on the Japanese cities of Hiroshima and Nagasaki.

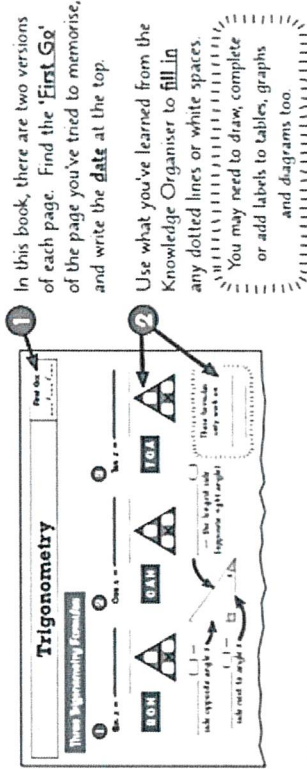
# Year 9 Maths Knowledge Organiser

Make sure to read the pages that relate to the topic you're studying. To help you remember the key points, you can copy, say, cover and check. Once you think you have learnt the key knowledge, use the Knowledge Retriever Book to test yourself. Look at the next page to see how to use the knowledge retriever book.

Term	Knowledge Organiser Book Pages	Knowledge Retriever Book Pages
1	31-32 19-20 16 13 9 48 39 6 40 11 13 42 44-46 17	73-75 43-44 35-36 29-30 19 115-116 93-94 11-12 95-96 23 30 101-102 105-107 39-40
2	33-34 35 38 41 53-56 44-46 13-14	77-80 81-82 89-90 97-98 127-134 108-110 31-32
3	14 25	31-32 57-58
4		
5		
6		

## How to Use This Book

Every page in this book matches a page in the Higher GCSE Maths Knowledge Organiser. Before using this book, try to memorise everything on a Knowledge Organiser page. Then follow these seven steps to see how much knowledge you're able to retrieve...



**3** Use the Knowledge Organiser to **check your work**.

Use a **different coloured pen** to write in anything you missed or that wasn't quite right. This lets you see clearly what you **know** and what you **don't know**.

**4** After doing the First Go page, **wait a few days**. This is important because **spacing out** your retrieval practice helps you to remember things better.

**5** Now do the **Second Go** page.

The **Second Go** page is **harder** — it has more things missing.

**6** Again, check your work against the Knowledge Organiser and **correct it** with a different coloured pen.

You should see some **improvement** between your first and second go.

**7** **Wait** another few days, then try to recreate any methods, formulas, tables or diagrams from the Knowledge Organiser page on a **blank piece of paper**. You can also have a go at any **example questions**. If you can do all this, you'll know you've **really learned it**.

There are also **Mixed Practice Quizzes** dotted throughout the book:

- The quizzes come in sets of four. They test a mix of content from the previous few pages.
- Do each quiz on a different day — write the date you do each one at the top of the quiz.
- Tick the questions you get right and record your score in the box at the end.



## Year 9 French Term 2 KO

### Aches and pains

j'ai mal I've hurt  
à la bouche mouth  
le bras arm  
le corps body  
aledos back  
l'épaule shoulder  
les fesses buttocks  
le front forehead  
le genou knee  
la jambe leg  
la main hand  
le nez nose  
les oreilles ears  
le pied foot  
la tête head  
le visage face  
les yeux eyes

### Staying in shape

pour arriver en forme to stay in shape  
il faut you must  
il ne faut pas you must not  
il est nécessaire de it is necessary to  
il est important de it is important to  
il peut être utile de it can be useful to  
on devrait you should  
on ne devrait pas you should not  
à l'avenir je voudrais in the future I would like to  
  
avoir un bon programme (to) have a good schedule  
bien manger (to) eat well  
bien dormir (to) sleep well  
faire du sport tous les jours (to) do sport every day  
jouer dans une équipe (to) play in a team  
jouer au foot (to) play football  
manger équilibré (to) eat a balanced diet  
marcher jusqu'au collège (to) walk to school  
  
boire des boissons gazeuses (to) drink fizzy drinks  
jouer à des jeux vidéo (to) play video games  
manger des frites (to) eat chips  
prendre le bus (to) take the bus  
prendre les escaliers (to) take the stairs  
aller au collège à vélo (to) go to school by bike

### Adjectives

ce sera it will be  
ce ne sera pas it will not be

bon pour la santé healthy  
mauvais pour la santé unhealthy  
bon pour le moral good for morale  
important dans la vie important in life  
bon pour le bien-être good for your wellbeing

dégoûtant disgusting  
épuisant exhausting  
agréable enjoyable  
pratique practical  
facile easy  
sociable sociable  
difficile difficult  
addictif addictive  
satisfaisant satisfying

### Healthy eating and drinking - verbs

je mangerai I will eat  
tu mangeras you will eat  
il/elle/on mangera he/she/one will eat  
nous mangerons we will eat  
vous mangerez you (pl) will eat  
ils/elles mangeront they will eat  
je ne mangerai pas de I will not eat  
je ne mangerai pas trop de I will not eat too much  
je ne mangerai jamais de I will never eat  
je boirai I will drink  
tu boiras you will drink  
il/elle/on boira he/she/one will drink  
nous boirons we will drink  
vous (pl) boirez you (pl) will drink  
ils/elles boiront they will drink  
je ne boirai pas de I will not drink

### Healthy eating and drinking - nouns

des céréales cereals  
des fruits fruit  
des gâteaux cake  
des légumes vegetables  
des légumes secs pulses  
des oeufs eggs  
du poisson fish  
des produits laitiers dairy products  
chips crisps  
nourriture salée salty food  
pain bread  
pommes de terre potatoes  
sel salt  
viande meat  
sucreries sweets  
boissons gazeuses fizzy drinks  
de l'eau water

### Future plans for staying in shape

je ferai du sport I will do sport  
j'irai au collège à vélo I will go to school by bike  
je jouerai au foot I will play football  
je mangerai équilibré I will eat a balanced diet  
je marcherai jusqu'au collège I will walk to school  
je ne boirai jamais de boissons gazeuses I will never drink fizzy drinks  
je ne jouerai plus à des jeux vidéo I will no longer play video games  
je ne mangerai plus de frites I will no longer eat chips  
je ne prendrai pas le bus I will not take the bus  
je prendrai les escaliers I will take the stairs

en jouant by playing  
en faisant by doing  
je me sens I feel  
dû au fait que due to the fact that  
malgré cela despite that  
catégoriquement categorically  
fermement strongly  
je me considère I consider myself...  
comme j'ai déjà dit as I have already said....



## Year 9 Spanish Term 2 KO

### Asignaturas - subjects

El dibujo art  
El Inglés English  
La educación física PE  
La música music  
El francés French  
El español Spanish  
La religión RE  
La geografía geography  
La historia history  
La tecnología DT  
La informática ICT  
Las ciencias science  
Las matemáticas maths  
El teatro drama  
El comercio business studies

### Opinions

Me gusta(n) mucho I like a lot  
me gusta(n) bastante I quite like  
Me gustaba(n) I used to like  
me chifla(n) I'm mad about  
Me da(n) igual – it's/they're ok,  
voy bien en I'm doing well at  
voy mal en – I'm doing badly at ...  
Saco buenas I get good marks  
malas notas – I get bad marks  
Odio I hate  
me aburre(n) – it/they bore me

### Adjectives

agradable(s) enjoyable  
práctico/a(s) practical  
difícil(es) difficult  
fácil(es) easy  
inútil(es) pointless  
útil(es) useful  
desafante(s) challenging  
severo/a(s) strict  
raro/a(s) weird  
Bueno/malo – good/bad  
me hace(n) pensar - it makes me think  
exigente – challenging  
divertido/a – fun  
creativo/a – creative

### School facilities

en mi insti (no) hay in my school there is (not)  
en mi escuela primaria (no) había in my primary school there was (not)  
ojalá hubiera I wish there was

un campo de fútbol I football pitch  
un comedor a canteen  
un gimnasio a gym  
un patio a playground  
una biblioteca a library  
una piscina a swimming pool  
unos laboratorios some laboratories  
unas clases some classrooms  
unos edificios some buildings  
una cancha de tenis a tennis court  
unas clases de informática some ICT rooms

atiguo/a(s) old  
bonito/a(s) nice  
bueno/a(s) good  
feo/a(s) ugly  
grande(s) big  
horrible(s) horrible  
moderno/a(s) modern  
pequeño/a(s) small

### Los profesores

El/La profesor(a) de teatro es ...The drama teacher is ...

antipático/a unpleasant,  
bueno/a good divertido/a funny  
hablador(a) talkative  
inteligente intelligent  
justo/a fair  
paciente patient perezoso/a lazy  
severo/a strict  
simpático/a pleasant,  
tímido/a shy  
trabajador(a) hard-working

el profesor de diseño es el más ...The design teacher is the most ...  
la profesora de inglés es la menos ...The English teacher is the least ...

El señor ... es el mejor. Mr ... is the best.  
La señora ... es la peor... is the worst.

(No) estoy de acuerdo. I (don't) agree.

### Key Verbs

Estudio I study  
cuando era más joven estudiaba when I was younger I used to study  
ayer estudié yesterday I studied  
mañana voy a estudiar tomorrow I am going to study  
me gustaría estudiar I would like to study

### Las reglas/Las normas Rules

Hay que... One must ...  
Se debe ... You/one must ...  
No se debe ... You/ one mustn't ...  
Está prohibido ... It is forbidden ...  
Se puede ... It is allowed...  
No se puede ... It's not allowed ...

llevar uniforme wear uniform  
comer chicle chew gum  
Respetar a los demás to respect others  
salir del colegio en el recreo go out of school at break times  
llevar maquillaje wear make-up  
llevar piercings wear piercings  
llevar joyas wear jewellery  
llegar a las clases a tiempo arrive to class on time  
usar el móvil use your mobile

dado que given that  
soy de la opinión de que I am of the opinion that  
por un lado... por otro lado on the one hand... on the other hand  
absolutamente absolutely  
puesto que given that  
no obstante nevertheless  
ser pan comido to be easy – to be eaten bread



Key Words	Topics	Essential knowledge
<p><b>Afterlife:</b> What Christians believe follows life on earth.</p> <p><b>Day of Judgements:</b> A time when the world will end, and every soul will be judged by God and rewarded or punished.</p> <p><b>Heaven:</b> A state of eternal happiness in the presence of God; the place of eternal peace ruled over by God.</p> <p><b>Hell:</b> The place of eternal suffering or the state of being without God.</p> <p><b>Purgatory:</b> The intermediate state where souls are cleansed to enter heaven.</p> <p><b>Satan:</b> Name for the Devil-the power and source of evil.</p> <p><b>Sin:</b> Any action or thought that separates humans from God.</p> <p><b>Original sin:</b> An Augustine Christian doctrine that says that everyone is born with a built-in urge to do bad things and to disobey God.</p> <p><b>Salvation:</b> Saving the soul, deliverance from sin and admission to heaven brought about by Jesus.</p> <p><b>Grace:</b> A quality of God which God shows to humans by providing love and support which they do not need to earn.</p> <p><b>Forgiveness:</b> Showing grace and mercy and pardoning someone for what they have done wrong.</p> <p><b>Atonement:</b> Restoring the relationship between people and God through the life, death and resurrection of Jesus.</p> <p><b>Mass:</b> Ceremony, also Eucharist, in which the sacrificial death and resurrection of Jesus is celebrated using bread and wine.</p>	<p><b>Resurrection and life after death:</b></p> <p><b>The afterlife and Judgement:</b></p> <p><b>Heaven and Hell</b></p> <p><b>Sin and Salvation</b></p> <p><b>The Role of Christ in Salvation</b></p>	<p>Jesus' resurrection assures Christians that they too will rise and live on after death. Christians have differing views about what happens when a person who has died is resurrected. Belief in resurrection affects the way Christians live their lives today.</p> <p><b>Different Christians views about resurrection:</b> Some Christians believe a person's soul is resurrected soon after death.</p> <p>Other Christians believe the dead will be resurrected at some time in the future when Jesus will return to judge everyone who has ever lived.</p> <p>Catholic and Orthodox Christians believe in bodily resurrection. This means resurrection is both spiritual and physical: the physical body lost at death is restored and transformed into a new, spiritual body. Some other Christians believe resurrection will just be spiritual, not physical as well.</p> <p><b>Impact of the belief in resurrection:</b> Life and after death is real, gives hope of a future life with Jesus; gives confidence in the face of death, Christians how much God loves them, hope of a future life with Jesus.</p> <p>Christians believe is an afterlife that depends on faith in God. The afterlife begins at death or at the <b>Day of Judgement</b> when Jesus will come to judge the living and the dead. Judgement will be based on how people have behaved during their lifetimes, as well as their faith in following Jesus. This influences how Christians choose to live their lives today. <b>The afterlife:</b> Christian's beliefs about life after death vary, but many believe that. They will be resurrected and received eternal life after they die. They will be judged by God at some point after they die.</p> <p>Many Christians believe God's judgement will result in eternal reward or eternal punishment. Heaven is the state or place of eternal happiness and peace in the presence of God. Hell is the place of eternal suffering or the state of being without God.</p> <p>Christians believe that all humans commit sins. Some Christians particularly Catholics also believe humans are born with an in-built tendency to sin, called original sin. Christians believe God gave people freewill, but they should use their freedom to make choices God would approve of, otherwise they will separate themselves from God. Salvation means to be saved from sin and its consequences, and to be granted eternal life with God. There are two main Christian ideas about how salvation can come about: Through good works and grace.</p> <p>Christians believe that salvation is offered through the life and teaching of Jesus. Jesus' resurrection shows that God accepted Jesus' sacrifice as atonement. This means that through the sacrifice of his death, Jesus restored the relationship between God and humanity that was broken when Adam and Eve sinned. The sacrifice makes it possible for all who follow Jesus' teachings to receive eternal life with God.</p>

## Knowledge Organiser

Department: Biology	
Term: 2	
Year: 9	
Topic: Chapter 1 (B1.2): DNA, Protein synthesis & Enzymes	
Key Learning Concepts/Facts	
<b>Key Words</b>	
<b>Word</b>	<b>Meaning</b>
Genes.	Short sections of DNA that code for a characteristic, such as eye colour
nucleotides	Monomer (unit) found in DNA, consisting of an organic base, ribose sugar, and a phosphate group
Polymer	Substance made up of many monomers (similar subunits) bonded together.
Monomer	single units, such as sugar molecules, that join together in a long chain to form a larger molecule (polymer), e.g. cellulose.
complementary base pairing	The pairing of the bases between two strands of DNA -adenine with thymine, and guanine with cytosine
messenger RNA	Copy of DNA strand used to carry the genetic code out of the nucleus so that proteins can be synthesised.
Chromosome	thread-like structures of DNA in the cell nucleus
transcription	Process by which mRNA is formed by the unzipping of the DNA molecule around the gene and copying it to mRNA in the nucleus.
Proteins	<b>A large molecule synthesised from amino acid monomers.</b>
translation	Translating the mRNA sequence to an amino acid sequence during protein synthesis
enzyme.	Biological catalyst -this means it speeds up reactions without being used up.
active site.	Part of the enzyme which is specific to the substrate and has a complementary shape to it.
substrate.	the protein or reactant in an enzyme-controlled reaction that fits exactly into the active site of a specific enzyme
lock and key hypothesis.	a model to explain how enzymes work; the substrate is the 'key' and the active site is the 'lock'
denatured.	when an enzyme's shape changes so that the substrate cannot fit into the active site
Protein synthesis	process in which polypeptide chains are formed from coded combinations of single amino acids inside the cell.
Amino acid	small molecules that make up a proteins.
DNA	Biological polymer made from nucleotide monomers. The sequence contains all the information needed to make an organism.
Genetic code	a sequence of three DNA bases that codes for a single amino acid

**DNA stands for deoxyribonucleic acid**

It is a double helix made from 2 strands that have twisted around each other. It is a polymer, meaning that it is made of many different molecules that join up to make a long strand: in the case of DNA these molecules are called nucleotides. Each nucleotide is made from one sugar molecule, one phosphate group (which forms the backbone) and one of the four different organic bases. o The 4 bases are A, C, G, T. o These nucleotides pair by complementary base pairing, meaning that only certain bases can join together: C joins to G and A joins to T. Each group of three bases codes for an amino acid and these then join together to make a protein. Chromosomes are structures made up of long molecules of DNA.

**Protein synthesis**

DNA copied into mRNA during **transcription** → mRNA travels to ribosome → protein made by **translation**

**What are enzymes?**

Enzymes are biological catalysts (a substance that increases the rate of reaction without being used up). They are protein molecules and the shape of the enzyme is vital to its function. This is because each enzyme has its own uniquely shaped active site where the substrate binds.

A simplified way to look at how they work is the Lock and Key Hypothesis : The shape of the substrate is complementary to the shape of the active site (enzyme specificity) , so when they bond it forms an enzyme-substrate complex. Once bound, the reaction the reaction takes place and the products are released from the surface of the enzyme

**Factors affecting the rate of enzyme-controlled reactions:**

The rate of reaction increases with an increase in temperature up to this optimum, but above this temperature it rapidly decreases and eventually the reaction stops. When the temperature becomes too hot, the bonds in the structure will break This changes the shape of the active site, so the substrate can no longer fit in. The enzyme is said to be denatured and can no longer work.

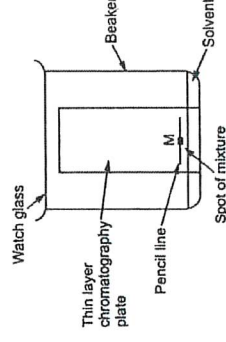
Other factors include pH, Substrate concentration and Enzyme concentration

## Knowledge Organiser

### Department: Chemistry GCSE

### Topic 2: Elements, compounds and mixtures

- **active ingredient:** the ingredient in a formulation that provides the chemical reaction needed but which is bulked out with other substances
- **chromatogram:** is a visible record showing separated substances that have travelled set distances. The distance an unknown substance travels is compared with the distance a standard substance travels.
- **chromatography:** a method for splitting up a substance to identify compounds and check for purity.
- **empirical formula:** the simplest formula that a larger formula can be reduced to. For example, the empirical formula of  $C_8H_{16}$  is  $CH_2$
- **fertilisers:** chemicals made to enhance the growth of crops, usually containing high levels of nitrogen or phosphorus or potassium in three set ratios.
- **filtration:** the process by which insoluble substances are separated from soluble ones using a filter.
- **formula mass:** the total of the atomic masses making up the formula of a substance
- **formulation:** a mixture that has been designed as a useful product. It has an exact ratio of ingredients to ensure it performs according to design eg. Medicine, fertilisers, shampoo.
- **impure:** materials consisting of two or more different elements and/or compounds.
- **mixture:** a substance containing two or more different elements or compounds not chemically combined together.
- **mobile phase:** in chromatography this is the phase that moves.
- **pure:** a single substance in which all of the particles are of the same
- **Rf value:** the ratio distance moved by the solvent / distance moved by a compound It is used in chromatography to identify compounds
- **solubility:** the measure of how much solute can dissolve in a given solvent at a certain temperature.
- **soluble:** a substance that will dissolve in a solvent.
- **solute:** a substance that dissolved in a solvent.
- **solution:** a mixture formed when one substance dissolves in another.
- **solvent front:** how far the solvent travels during chromatography.
- **solvent:** a substance that can dissolve a solute to form a solution.
- **stationary phase:** the phase in chromatography that does not move. In paper chromatography it is the paper.
- **relative atomic mass:** the mean mass of an atom of an element compared to 1/12 the mass of  $^{12}C$  atom, defined as 12 exactly. Its symbol is  $A_r$ .
- **relative formula mass:** the mean mass of an unit of a substance compared to 1/12 the mass of a  $^{12}C$  atom, defined as 12 exactly. Its calculated by adding together the relative atomic masses for the atoms in the formula of a substance. Its symbol is  $M_r$ .
- **balanced equation:** chemical equation where the number of atoms on each side of the equation balance each other.
- **compound:** two or more elements which are chemically joined together. Eg.  $H_2O$ .
- **element:** a substance made from only one type of atom.
- **relative atomic mass:** the mean mass of an atom of an element compared to 1/12 the mass of  $^{12}C$  atom, defined as 12 exactly. Its symbol is  $A_r$ .
- **relative formula mass:** the mean mass of a unit of a substance compared to 1/12 the mass of a  $^{12}C$  atom, defined as 12 exactly. Its calculated by adding together the relative atomic masses for the atoms in the formula of a substance. Its symbol is  $M_r$ .
- **atomic structure:** the number of protons, neutrons and electrons in atoms.
- **conservation of mass:** the total mass of reactants equals the total mass of products formed.



**Knowledge Organiser**

**Department: Physics Triple**

**Topic: electricity**

<b>Key Words</b>		<b>By the end of this unit you will need to be able to: (page numbers relate to the textbook available on teams)</b>
Definition	word	
A material that allows an electric charge to flow through it	Conductor	<p>Explain what static electricity is, describe how insulating materials can be charged and the uses and dangers associated with static electricity. P102-103</p> <p>Recognise and use electric circuit symbols in circuit diagrams and explain electric charge and currents. P103-104</p> <p>Explain current pass around a circuit and what charge is. P103-104</p> <p>Explain what resistance is and describe Ohms law. P106-107</p> <p>Describe the differences in series and parallel circuits. P108-109</p> <p>Explain how resistance changes in electrical components, (Filament lamps, LDR's, Thermistors, Diodes) and draw the V-I graphs for each. P110-111, 116-117</p> <p>Describe energy transfers and power. P118-119.</p> <p>Be able to calculate power. P120-121</p> <p>Understand the difference between AC and DC. P286-287</p> <p>Know how a plug is wired and the function of a fuse. P286-287</p>
Circuit in which all components are connected one after the other in a single line	Series circuit	
Component with high resistance in one direction and low in the other	Diode	
A component that is affected by external conditions such as light intensity or temperature	Sensor	
The rate of flow of electric charge	Current	
Circuit component whose resistance is affected by light	Light dependent resistor	
Ratio of voltage across a component to the current through it	Resistance	
A material that reduces the flow of electric charge	Insulator	
A component whose resistance is affected by temperature	Thermistor	
A device that measures electric current	Ammeter	
The slope of a graph	Gradient	
A bulb with a thin piece of wire that is heated and gives out light	Filament bulb	
Region around a charged object that exerts a force on other charged particles	Electric field	
Wire in a plug that allows electricity to return to its source	Neutral wire	
Device that measures potential difference	Voltmeter	
Measure of the energy transferred per unit charge as it moves between two points in a circuit	Potential difference	
A relationship which produces a straight line graph that passes through the origin	Directly proportional	
Unit for electric charge	Coulomb	
Force that acts between two objects to move them apart	Repulsion	
A circuit in which the current divides into two or more paths	Parallel circuit	

**Equations for this chapter – these all need to be learnt for the exams**

- Charge flow = current x time**
- Potential difference = current x resistance**
- Energy transferred = current x potential difference x time**
- Power = potential difference x current**
- Power = (current)<sup>2</sup> x resistance**
- Power = energy transferred / time**
- Energy transferred = power x time**