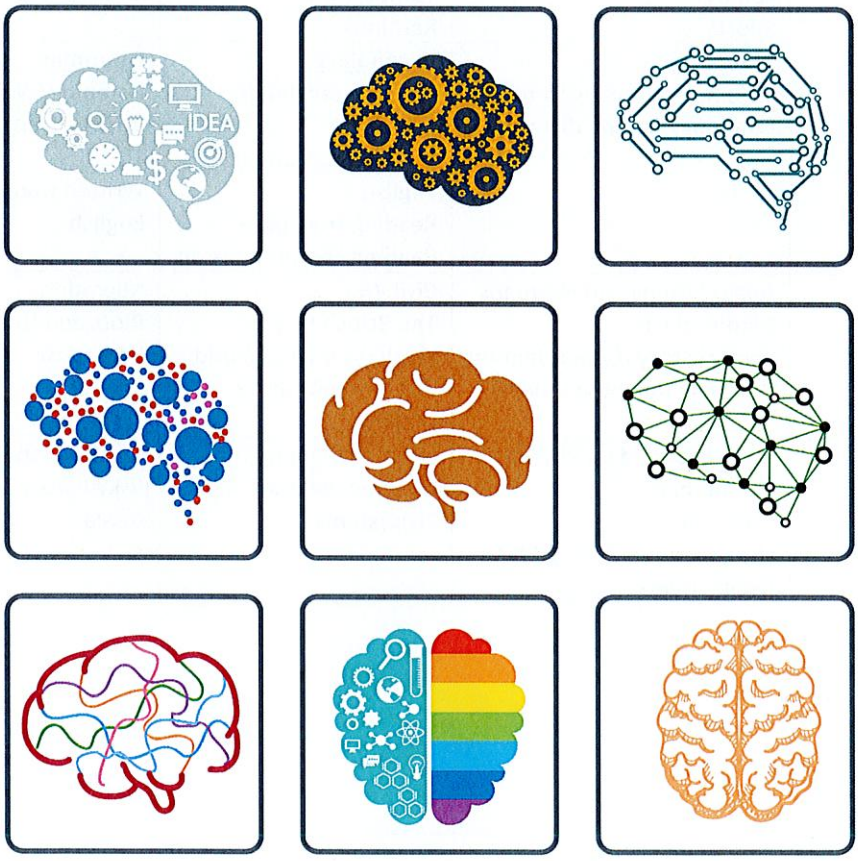
Waseley Hills
High School

Waseley Hills High School

Y9 EBACC ASSESSMENT PREPARATION

REVISION MATERIALS



Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

Waseley Hills
High School

Our Topic Lists			
Subject	**YR7**	**YR8**	**YR9**
English	Reading - fiction text Writing - creative writing	Reading - nonfiction text Writing - transactional writing	Reading - fiction text Writing - transactional writing
Maths	Algebraic Thinking Place, Value & Proportion Applications of number Directed number. Fractional Thinking Lines & Angles Reasoning with number	Proportional Reasoning Representations Algebraic techniques Developing number Developing Geometry Reasoning with data	Reasoning with algebra Constructing in 2 & 3 dimensions Reasoning with number Reasoning with geometry Reasoning with proportion Statistical Representations
Science	Introduction to science Interdependence Cells Acids and alkalis Energy	Electricity Metals and non-metals Separating mixtures Elements and the Periodic Table Breathing Work and energy Sound and light	Photosynthesis Earth's resources Speed and motion Magnets Energy changes
Spanish	Descriptions of people and places Having, Doing, Being & Going Question words Family Sports	Having & Being Present & Past Tenses Jobs & School Negatives Partitive Article Comparisons Routines	Past & Future Tenses Injuries Holidays, Routines & Food Identity & Nationality Imperfect Tense School
	Phonics Listening phonics gap-fill Listening/Writing dictation	**Vocabulary** Written translation English-TL Written translation TL-English Reading true/false Reading comprehension	**Grammar** Listening/Writing dictation Written translation English-TL Written translation TL-English
History	Anglo-Saxons and Normans Medieval Life Local History (Dependent on the topic taught in school)	Civil War The British Empire World War One/World War Two (Either of these)	Migration Riots and Unrest Holocaust
Geography	Place knowledge: Physical and human Local place Urban regeneration / China Raging rivers	India: Development Extreme weather Ecosystems	Coasts (Global/UK) Risky Places Russia

Waseley Hills
High School

What are knowledge organisers?

Knowledge organisers contain essential, fundamental knowledge that you MUST know in order to be successful in Year 9 and subsequent years. Knowledge organisers will help you to recap, revisit and revise what you have learnt in lessons, enabling you to move the knowledge from your short-term memory to your long-term memory.

Knowledge organisers are also designed to help you learn a wide range of knowledge which in turn will mean you are more prepared for your lessons as well as your GCSEs that you will sit in the future.

How can I access the knowledge organisers?

Each subject area has created a knowledge organiser for the topics you will cover over the year. This booklet contains the knowledge organisers for English, Geography, History, Maths, RPE, Science and Spanish. It is important that you keep all of your knowledge organisers somewhere safe, because the knowledge required in Year 7 will also be needed in Years 8-11.

How will the knowledge organisers be used?

You will use your knowledge organisers at times in class, but you will mainly use them to support you with your homework. Most of the time, your teachers will give you specific tasks focused on using your knowledge organiser for your homework, but sometimes they may allow you to pick a way of using them to help revise for a topic.

Knowledge Organisers are very useful in developing your confidence at home with topics you have covered in class. Your teacher will test your understanding of the key knowledge through the Do Now activity in your lessons.

Waseley Hills
High School

Knowledge Organiser

English

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

Waseley Hills High School
Aspire, Invest, Respect

KNOWLEDGE ORGANISER

End of Year exams – Year 9

READING SKILLS - FICTION	
Knowledge:	**Key Skills**
Fiction: literature in the form of prose that describes imaginary events and people.	**Retrieval**: finding relevant evidence from the text.
Narrative voice: the perspective the story is told from. Stories can be told from different perspectives for a specific effect	**Inference**: drawing conclusions or making judgments based on hints or clues within a text.
Characterisation: the way authors create characters and make them believable through how they look, what they say, think, want and do.	**Analysis**: zooming in on evidence to consider the literal, suggested and symbolic meanings in detail. *Analytical verbs include: This implies/ suggests/ conveys/ emphasises/ reveals/ symbolises...*
Setting: The time, location, and environment in which a narrative takes place.	**Evaluation:** the process of judging or calculating the quality, importance, amount, or value of something. *I partially/wholly agree/disagree..., to an extent...*
Tropes and archetypes: A type of character commonly seen in stories, e.g the bad guy, the damsel in distress etc. Tropes are more basic, whearas archetypes reveal something deeper about human nature.	**Writer's intent:** A writer's purpose is why they write a specific text. They may write to inform, entertain, persuade, or express ideas and feelings about a topic or event. *The writer highlights/praises/warns/criticises/argues...*
Writer's Methods: The ways in which an author tells their story, including sophisticated language, a sense of purpose and audience, varied sentence structures and a consideration of narrative perspective.	**Topic sentences:** A topic sentence is the WHAT part of our analytical paragraphs- it outlines what we are going to talk about in that paragraph. A successful topic sentence will: ➢ Be short and concise, linking to the key word in the question. ➢ Have one clear focus to explore and a where in the play. ➢ Include a writers method.

Structuring my paragraphs in English

WHAT?

HOW?

WHY?

WHAT: Topic sentence
- ❑ Links to the focus of the question, where in the text and the method the writer is using to create meaning.

HOW: Evidence
- ❑ 2-3 short, snappy quotations, embedded in a sentence

WHY: Analysis
- ❑ zoom in at word level
- ❑ explain literal, infer suggested meanings and images created, then what this might represent.

Why: Evaluation of effect
- ❑ What might this moment make the reader think/feel/imagine?
- ❑ What is the writer trying to warn/praise/criticise/highlight to the audience?

Waseley Hills High School
Aspire, Invest, Respect

KNOWLEDGE ORGANISER

WRITING SKILLS – Transactional writing	
Rhetoric: writing to influence or persuade an audience using language and structural methods.	**Anaphora**: rhetorical device that features the repetition of a word or phrase at the beginning of successive sentences, phrases, or clauses.
Genre: a category, or type of writing. For example: letters, articles, autobiographies, etc.	**Anecdote**: a short story that supports a point in your argument. This can be light-hearted or a serious warning.
Audience: the people who are addressed by a piece of writing or a speech. The audience is influenced by various factors, such as values, interests, needs, and commitments, that shape their interpretation and action.	**Pronouns:** are substitutes for nouns **Inclusive pronouns:** first person plural to include the audience (we, our, us) **Exclusive pronouns**: using third person to exclude (they, them, he, she) **Direct address:** 2nd person to speak directly to audience (you)
Purpose: the intended impact a writer has. The reason they write as they do depending on the effect they wish to create.	**Imperative language**: verbs that give a command or instruction

How can I structure my writing?	
Touch Gloves	Show respect. Establish common ground between you and your reader. E.g. mention an example that everyone has experienced, use a collective pronoun e.g. *We all know that... We all care about...*
Jab	Introduce the main point of your writing. Establish your opinion/ line of argument clearly. If possible, use a shocking fact or statistic. Perhaps have this as a short paragraph for effect.
Rumble	Develop your argument with facts, statistics, experience etc.
Rumble	Develop further. Perhaps acknowledge the counter argument, bring in a case study example. *E.g. While others may argue...*
Jab	Return again to your overall point/ message/ opinion. Make it clear. What do you want to happen? *E.g. It is imperative that ...*
Knock Out	Conclude in a clear, strong way. Make your reader feel that they cannot argue with your point. *E.g. The crux of the matter is this: / The solution is clear:*

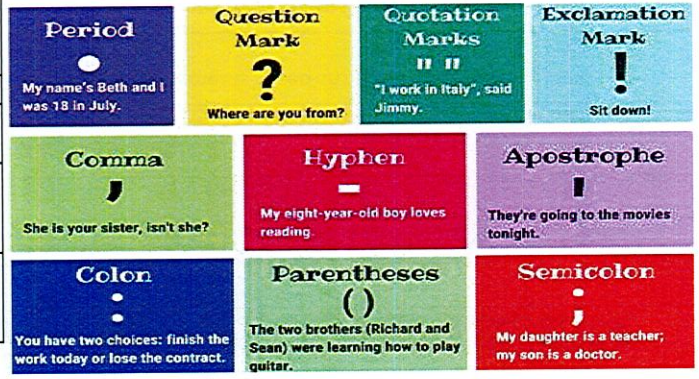
Use language to persuade your audience in your argument:

LOGOS: Explore why **it** is important.
- Clear opening, paragraph links and ending.
- Facts and statistics.
- Comparisons (simile and metaphor).

PATHOS: Appeal to **them**.
- Imagery and vivid vocabulary.
- Rhetorical questions and repetition.
- Emotive/hyperbolic language
- Stories and inspirational quotes.

ETHOS: Explain why **you** care and your opinion should be trusted.
- Explain your similarities with your audience to show they can relate to you.
- Build you reputation: what will you do personally?
- Explain your values honestly, and why you think that this view is right.

Punctuation



Waseley Hills
High School

Knowledge Organiser

Geography

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

Remember, your primary source of revision should be your book!

Year 9 revision keyword list:

Use the paragraphs that I have created to make bullet point notes to aid revision.

Term 1: Oceans and coasts

Keyword	Definition
Ocean ecosystem	The ocean ecosystem is separated into the sunlight zone, twilight zone and midnight zone. The sunlight zone is the area between 0m and 200m beneath the surface of the ocean. This zone receives plenty of sunlight. This allows plants and microscopic organisms, such as algae and phytoplankton, to thrive as they can carry out photosynthesis! The twilight zone is the area between 200m and 1000m beneath the surface of the ocean. Water pressure is quite strong in this zone. This zone is just beyond the reach of sunlight. Plants do not grow in the twilight zone. The midnight zone is the area between 1000m and 4000m beneath the surface of the ocean. Water pressure is immense in this zone. Temperature here is very cold, averaging at around 4°C.
Plastic waste	Plastic waste makes up 80% of all marine pollution and around 8 to 10 million metric tons of plastic end up in the ocean each year. Research states that, by 2050, plastic will likely outweigh all fish in the sea. In the last ten years, we have produced more plastic products than in the previous century. The Great Pacific Garbage Patch is a collection of marine debris in the North Pacific Ocean. Marine debris is litter that ends up in oceans, seas, and other large bodies of water. The Great Pacific Garbage Patch, also known as the Pacific trash vortex, spans waters from the West Coast of North America to Japan.
Solving the waste problem	There are many ways we can attempt to solve the problem of plastic pollution: small-scale solutions include buying fewer products that have plastic packaging, using paper bags instead of plastic and buying loose fruit and vegetables rather than those in plastic bags. Large-scale solutions include government policy to reduce plastic use, such as the banning of plastic straws by the UK, and technological solutions intended to clean up the oceans by sucking up the plastic that already exists.
Sea levels	Sea levels are rising because human-caused global heating is meaning the ice sheets over Antarctica and Greenland are melting, adding excess water to the oceans. In addition, the warmer temperatures mean that the oceans expand, therefore leading to sea level rise.
The Maldives	The Maldives are at risk from becoming completely submerged by the end of the century. Currently, flooding has increased dramatically leading to people having to migrate to the larger islands. The coral reefs that the people of The Maldives rely directly and indirectly on for survival are dying due to the bleaching of coral reefs because of warmer seas. The Maldives have created an island called Hulhumale that is twice the height of their current capital. They are also building large artificial coral structures that will help to grow coral back and improve protection from coastal erosion. They have started to reclaim more land from the sea in the same way as Hulhumale and are creating a floating city that will not be affected by the rising sea levels.
Waves	Waves are created by the friction from the wind on the surface of the water. The top of the wave is the crest and the bottom is the trough. They move in a circular motion in the direction the wind is blowing. When they reach the shore the

	circular motion causes the crest to topple, making the wave break. Constructive waves have smaller heights, longer lengths and build up the beach. Destructive waves have larger heights, shorter lengths and erode the beach.
Erosion, transportation and deposition.	At the coast, erosion occurs through hydraulic power which is the force of the water and air pressure. Abrasion is when pebbles are hurled at the cliff. Solution is the chemical action on the cliff. Attrition is when pebbles are smashed into each other. Transportation occurs through traction, where large rocks are rolled along the sea floor; saltation, where pebbles are bounced along; suspension, where small particles are carried by the water; solution, where sediment is carried as dissolved load. Deposition occurs when the water loses energy, such as in a bay or at a river estuary.
Hard engineering	Hard engineering at the coast attempts to stop coastal erosion. This happens through sea walls which are made from concrete and are often recurved to reflect back the energy of the waves. Rock armour is large bounders in a graduated slope that absorbs and reflects the energy. Rip rap is random boulders for a similar reason. Groynes trap sediment transported because of longshore drift which builds up the beach and creates a barrier, absorbing the energy. These can often be effective and sometimes can last long-term, but are very expensive, sometimes ugly and move the erosion problem further down the coast.
Soft engineering	Soft engineering at the coast also attempts to stop coastal erosion, but in a more natural way. This can include regenerating sand dunes which act as a natural barrier to the sea. Beach nourishment involves placing large amounts of sand or shingle on the beach to replace what would naturally be taken away. Beach reprofiling changes the structure of the beach to allow for more constructive waves which do not erode. These are often cheaper and work more in harmony with nature, especially sand dune regeneration.

Term 2: Tectonics

Keyword	Definition
Earth's structure	The Earth is split into four layers, starting with the inner core which is solid iron and nickel at around 5000°, then the outer core which is liquid iron and nickel, then the mantle which is molten rock and then the crust, which is a solid layer of rock.
Plate tectonics	The crust is split into sections known as tectonic plates. These move about as convection currents in the mantle drag and pull them around. When the meet is called a plate margin.
Plate margins	Destructive margins are when two plates move towards each other. The oceanic plate subducts the continental one as it is denser. When two plates pull apart it is constructive. When two plates move side to side it is called conservative.
Volcanoes	A volcano is a vent for the magma in the mantle that turns into lava when it breaks the surface. Destructive margins produce composite cone volcanoes, which are so-called because they are a cone shape and made up of two materials: ash and lava. Shield volcanoes are on constructive margins and are so-called as they look like a shield from above, with gently-sloping sides made from runny lava.
Volcanic Hazards	Volcanoes produce a variety of hazards. Lava is generally the lest of the worries for people as it is often very sticky and slow-moving. The worst is pyroclastic flow as it moves at 100mph and is 1000°C. Laharas are also dangerous as water mixes with the ash and creates a very fast mudflow. Ash can damage lungs and collapse

	roofs due to the weight, and can also ground planes because they cannot fly through and cause global cooling if there is enough of it.
3Ps	This stands for prediction, planning and protection. Volcanic eruptions can be predicted through monitoring the gases being released, the movement of the ground via a tiltmeter, microearthquakes using a seismometer, and through looking for any visual changes. People can then be evacuated. Planning will involve making sure people have safety equipment such as dust masks and eye goggles. Protection involves making sure buildings are volcano-proof , which is hard, or diverting away lava from towns using large earth banks.
Tsunamis	Tsunami means harbour wave, because the large wave is generally only seen when it reaches the shore. This is due to wave shoaling, whereby the energy of the wave is compressed into a smaller area, meaning the wave becomes higher and slows down. A tsunami is not a tidal wave, but is caused by an undersea earthquake. Tsunamis cause terrible destruction on their way into shore due to the power and height of the waves, sometimes up to 30m high. They also cause destruction on the way back as the water drains, dragging debris as it goes.

Term 3: Russia

Keyword	Definition
Russia's location	Russia is located between 40° and 70° N of the equator, all in the northern hemisphere. It is one third in Europe and two thirds in Asia, separated by the Ural mountain range. It borders multiple countries including China, Mongolia, Kazakhstan, Ukraine and Norway.
Russia's climates and ecosystems	Because of its size and the fact it covers many different degrees of latitude, Russia has a variety of biomes on its landmass. The northernmost is the tundra, which is below freezing for the majority of the year and fairly dry with a brief hot summer. The taiga is next and is a coniferous forest, evergreen trees covering vast swathes of the country, with cold temperatures for much of the year and a warm summer. The steppe is the breadbasket of the country, as it is a temperate grassland, growing huge quantities of wheat, barley, soya and sunflowers. The summers are hot and the winters are relatively cold.
Adaptations to the tundra	The tundra is a harsh, extreme environment. As well as the cold and the lack of rainfall there are very strong winds. Therefore plants and animals must have evolved to be adapted to the conditions. Arctic moss has lots of small leaves to allow for photosynthesis without being blown over.by the strong winds. Caribou (reindeer) have adapted by migrating to escape the worst of the weather and have two layers of fur to keep them as warm as possible.
Population density	The highest population density is concentrated in the west of the country that is classed as European Russia. The east is much more sparsely populated as the biomes are the taiga, which does not allow for easy settlement due to the density of trees, and the tundra, which is extreme in its cold.

Waseley Hills
High School

Knowledge Organiser

History

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

Big Picture of Medicine - Medieval

Medieval (13th and 14th Centuries) 1250 - 1500	Medical Renaissance (16th and 17th Centuries) 1500 - 1700	Industrial 18th and 19th Centuries) 1700-1900	Modern medicine (20th and 21st Centuries) 1900 - Present
KS3 Yr7 Medieval England & local History	Yr7 Tudors & Stuarts	Yr8 Britain 1750-1900 & Y7 local History	Yr8 Twentieth Century World
KS4	Early Elizabethan England 1558-88	American West 1835-95	Weimar & Nazi Germany 1918-1939

1250 — Castles — 1348 — Black Death — 1440 Printing press — 1500

Beliefs about Cause

- Supernatural- alignment of planets
- Religious - God, punishment for sinners
- Miasma- bad air
- Theory of 4 Humours (Blood, phlegm, black bile, yellow bile)
- Contagion

Beliefs about treatment - what?

- Theory of opposites - If you are suffering with a cold, treat with something warm
- Urine charts - checking the colour, taste and consistency of urine helped doctors to diagnose and treat
- Humoral treatments (phlebotomy, purging)
- Herbal remedies
- Astrology - treatment depended on horoscope
- Superstition, charms, fox water
- Praying
- Bathing - warm baths to draw out blockages

Beliefs about treatment - who?

- Physician - Medieval doctor, expensive ££
- Barber-surgeon
- Apothecaries
- Wise women
- Woman within the home

Beliefs about prevention

- Lead a life free from sin
- Regimen Sanitatis
- Diet - don't eat too much or too less
- Purifying the air with herbs like lavender

Key Individuals

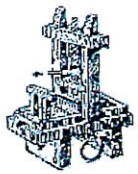
- Hippocrates & Theory of 4 Humours
- Galen & Theory of opposites

Key Institutions

- The Church - powerful and rich. Heavily promoted Galen and ran 30% of the hospitals.

Key Inventions

- The Printing Press, 1440 - lead to much faster and easier sharing of ideas and medical texts.



Care

- Home- women
- Hospital coming from the word "Hospitalis" a place for guests.
- 30% owned by the Church
- Remainder funded by charities or wealthy individuals wanted to get into heaven - BUT they were still run by the Church.
- Hospital treatment was limited as religious men were not allowed to cut the body. Care not Cure.
- Hospitals would NOT admit insane, pregnant or infectious patients

Case study: The Black Death 1348

Causes

- Religion- God, punishment for sinners
- Supernatural- alignment of planets
- Miasma - bad air
- Jews

Treatments

- Pray
- Fast (not eat)
- Go on a pilgrimage to somewhere of religious significance
- Bleeding/purging by a Barber-surgeon
- Lancing buboes
- Smelling herbs- apothecaries

Prevention

- Escape
- Flagellants - Whip yourself to show God that your sorry
- Avoid Bathing
- Avoid sad events and try and be happy
- Pray and repent
- Avoid infected persons
- Carry a pomander to drive off miasma (perfumed herbs)

Government action

- Quarantine laws - people new to an area had to stay away from people for 40 days and houses were put under quarantine.

Revision guide green p 6-10 new pages 6-17

Big Picture of Medicine – Renaissance

Medieval (13th and 14th Centuries) 1250 – 1500	Medical Renaissance (16th and 17th Centuries) 1500 – 1700	Industrial 18th and 19th Centuries) 1700-1900	Modern medicine (20th and 21st Centuries) 1900 – Present
KS3 Yr7 Medieval England & local History	Yr7 Tudors & Stuarts	Yr8 Britain 1750-1900 & Y7 local History	Yr8 Twentieth Century World
KS4	Early Elizabethan England 1558-88	American West 1835-95	Weimar & Nazi Germany 1918-1939

1500 Tudors — 1536 — 1558 — Stuarts — 1642-51 — 1665 — 1700

Beliefs about... Cause

- Miasma- bad air
- Theory of 4 Humours (not as strongly!) - Blood, phlegm, black bile, yellow bile

Beliefs about... Treatment- what?

- Humoral treatments (phlebotomy, purging)
- Herbal remedies
- Superstition - charms

- Praying
- Transference - belief that an illness or disease could 'transfer' into something else. E.g. patients with fever would sleep with a sheep in their bedroom, hoping that the fever would 'transfer' into the sheep.

- Chemical cures - consuming chemicals such as mercury to 'purge' the body.

Treatment- who?

- Physician
- Barber-surgeon

- Apothecaries

Beliefs about... Prevention

- Regimen Sanitatis

- Keeping clean by changing clothes regularly
- Practicing moderation - not over indulging on food, alcohol etc.

Key individuals

- Hippocrates & Theory of 4 Humours
- Galen & Theory of opposites
- Thomas Sydenham - believed in detailed observations, patient notes and classifying diseases
- Andres Vesalius - anatomical drawings of the body through dissection

- William Harvey - circulation of blood
- King Charles II - supported institutions like the Royal Society

Key Institutions

- The Church - limited influence but people still turned to religion during The Great Plague.
- Monasteries - provided medical care until Henry VIII dissolved the monasteries in 1536*. Then most closed.
- The Royal Society, 1660 - new scientific research and sharing of ideas

Key inventions

- Mechanical Pump invented - invented to put out fires, inspired Harvey to look at circulation

Care

- Home
- Hospital - more centred on the patient. Good food, visit from a physician and medication usually in the form of herbs to be administered. This decreased after 1536*
- Pest Houses - set up to house patients with infections diseases who would not be accepted into normal hospitals (plague or pox usually).
- Community - close knit communities meant you could get advice from lots of people

Case study: The Great Plague 1665

Causes

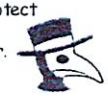
- Religious - God, punishment for sinners
- Astrology - alignment of the planets
- Contagion - not a popular theory and there was no evidence but people thought it could be spread person-person.

Treatments - what?

- Smelling herbs- apothecaries
- Escape
- Wrap in thick woollen cloths and sit by a fire to sweat out the disease
- Place a chicken on the bubo to draw out the poison

Treatment - who?

- Plague doctor - wore bird shaped masks and costumes to protect themselves.
- Quack doctor - untrained but sold their services as a doctor.

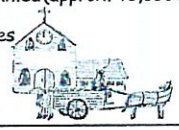


Beliefs about... Prevention

- Pray and repent
- Quarantine victims
- Carry a pomander to drive off miasma (perfumed herbs)
- Dietary changes - fast or over indulge with lots of garlic and sage

Government action

- Quarantine laws - houses would be sealed and quarantined for 40 days and a red X placed on the door.
- Public meetings, fayres, parades and large funerals were banned.
- Theatres - closed.
- Fires burnt on street corners with sweet smelling herbs
- Cats, dogs and pigeons killed (approx. 40,000 dogs and 20,000 cats)
- Daily collection of bodies



Revision guide pages: New CGP Black Medicine Revision Guide p 18-31 Old CGP Green GCSE Edexcel History Guide: 11-16

Knowledge Organiser – Topic One: Medieval Medicine 1250-1500

Medieval Britain	
1	Medieval Britain is the period between **1250-1500** also known as the 13th-16th century or the Middle Ages.
Key events	
2	**1123** Britain's first hospital, St Bartholomew's was set up in London
3	**1350** Average life expectancy is 35 years of age
4	**1348-49** The Black Death kills 1/3 of England's population
5	**1388** Parliament passes the first law requiring streets and rivers to be kept clean by the people
Key Concepts	
6	**The Medieval Church** –The official religion of medieval Britain was Roman Catholic. Daily life and power was dominated by the Church, they controlled education and many people feared God.
7	**The Four Humours.** First suggested by Greek doctor Hippocrates. **Black Bile, Yellow Bile, Blood and Phlegm.** These humours linked to elements and seasons. Hippocrates believed that if these humours became unbalanced you would get ill. To get better, you needed to balance them. Galen, a Greek doctor working in Rome continued the theory and added his own ideas. His '**Theory of Opposites**' to heal illness suggested using hot to cure cold.
8	**Medieval Power** The emphasis in Medieval Britain was on authority. The King had total power, but the Church had considerable control. People followed authority and would not question the views of King/Church as it would mean risking their lives.

Key Words		
9	**Superstition**	A belief, not based on knowledge, but on the supernatural. For example witchcraft or astrology
10	**Purging**	To rid the body of an 'excess' like blood or vomit
11	**Leeching**	The use of leeches for bloodletting
12	**Cupping**	Using glass cups to draw blood to the surface
13	**Fasting**	To avoid eating or drinking
14	**Pilgrimage**	A journey to a religious shrine and relics to show your love of God and to cure an illness
15	**Mass**	Public worship in the Roman Catholic Church
16	**Astrology**	Study of the planets and their effect on humans
17	**Miasma**	Bad air which was blamed for spreading disease
18	**Apothecary**	A medieval pharmacist or chemist
19	**Wise Woman**	A female healer, who used folk medicine and herbal remedies to cure illnesses.
20	**Vademecum**	A medieval medical book carried by doctors
21	**Urine Chart**	Used to examine urine to define an illness
22	**Physician**	A male medically trained doctor
23	**Barber Surgeon**	Untrained surgeon, who practiced basic surgery
24	**Dissection**	To cut open a human and examine the insides
25	**Epidemic**	A widespread outbreak of a disease
26	**Trepanning**	Cutting a hole in the skull
27	**Amulet**	A charm that bought protection from disease
28	**Black Death**	A term to describe the bubonic plague
29	**Monastery**	A building where monks live, eat and pray

Knowledge Organiser – Topic Two: The Medical Renaissance in England, 1500-1700

Renaissance England	
1	The Renaissance was the period between 1500-1700 in England. Art and Science were growing in importance.
Key events	
2	**1543** – Vesalius published *The Fabric of the Human Body*. It showed how the human body worked.
3	**1565** – the first dissection was carried out in Cambridge
4	**1628** Harvey published his book *An Anatomical Account of the Motion of the Heart and Blood* which showed blood moving around the body
5	**1645** – The first meeting of the Royal Society
6	**1665** The Great Plague in London. 75,000 died
Key Concepts	
7	**The King –** Despite some scientific developments, people still believed that the King could cure diseases such as **scrofula** (a skin disease). Being touched by the King was as close as you could get to being touched by God.
8	**Renaissance** – this was a time of change (re-birth) when people became interested in all things Greek and Roman. Printing was developed so that books could be published (e.g. Galen, Vesalius). People realised the Greeks had loved enquiry – asking questions and challenging old ideas. They started to do the same – e.g challenging Galen's theories
9	**Evidence** – rather than believing & accepting old ideas (e.g. The Four Humours) without question, scientists and doctors were more willing to experiment (e.g. dissecting bodies) to make scientific discoveries. People started to look to evidence over tradition.

Key Words		
10	**Continuity**	Things or ideas that stayed the same over time
11	**London Treacle**	A medicine that was solve to cure the Plague. It contained herbs, spices, honey and opium
12	**Autopsy**	Dissecting a body after someone has died to establish cause of death
13	**Diagnosing**	Finding out what disease someone has by e.g. taking their pulse and observing the patient
14	**Royal Society**	A group of people interested in science who met weekly. They had a laboratory with microscopes. King Charles II was a patron.
15	**Anatomy**	The study of the human body and how it works
16	**Physiology**	The workings of the body
17	**Microscope**	A new invention that allowed things to be magnified
18	**Thermometer**	A new invention that allowed someone's temperature to be taken
19	**Mortality Bill**	A document in each parish which recorded who had died and what had killed them.
20	**Pesthouse**	A hospital for people suffering from infectious diseases, e.g the Plague.
21	**Printing**	The process of creating a book. This was developed during the Renaissance

Knowledge Organiser – Topic Three: Medicine in 18th and 19th century Britain

18th and 19th century Britain	
1	This was a time of breakthroughs in medicine in England. There were many scientific discoveries but also many Public Health problems.
Key events	
2	**1798** – Edward Jenner developed the first vaccine for Smallpox
3	**1847** – James Simpson developed chloroform as an anaesthetic
4	**1854** – John Snow's maps proved the source of cholera
5	**1861** – Louis Pasteur's germ theory was published
6	**1867**- Lister used antiseptic to prevent infection
7	**1875** – The Public Health Act. Local councils had to provide sewers, drainage and fresh water as well as medical officers
8	**1882** Robert Koch identified bacteria that caused specific diseases
Key Concepts	
9	**Nursing** – Nurses are responsible for the care of patients in hospital. Before 1800, hospitals were dangerous places where death was very likely. The development of nursing changed that.
10	**Breakthrough** – a scientific discovery that dramatically alters the way people understood disease – e.g. the discovery of bacteria. This then helps the problem to be solved.
11	**Public Health** – when the government takes measures to prevent diseases spreading and to help the population become healthier. The government increasingly took on this role after the development of germ theory

Key Words		
12	**Vaccine**	The injection into the body of killed or weakened organisms to give the body resistance against disease
13	**Smallpox**	A dangerous disease causing fever that was beaten by vaccination
14	**Anaesthetic**	Drugs given to make someone unconscious before or after surgery
15	**Infection**	The formation of disease causing germs
16	**Cholera**	A bacterial infection caused by drinking water
17	**Germ Theory**	The theory that germs cause disease
18	**Antiseptic**	Chemicals used to destroy bacteria and prevent infection
19	**Medical Officer**	A person appointed to look after the public health of an area
20	**Contagion**	The passing of disease from one person to another
21	**Epidemic**	A widespread outbreak of a disease
22	**Sanitation**	Providing disposal of human waste and dispensing clean water to improve public health
23	**Workhouses**	Accommodation for poor people who could not afford to pay for rent and food.
24	**Dispensary**	A place where medicines are given out
25	**Voluntary hospital**	Hospitals supported by charitable donations
26	**Chloroform**	A liquid whose vapour acts as an anaesthetic and produces unconsciousness
27	**Industrial Revolution**	A period of British history when industries (e.g. coal, steel) transformed society

Knowledge Organiser – Topic Four: Medicine in modern Britain, 1900-Present

Modern Britain	
1	From 1900-Present, there have been massive changes in medicine and treatment
Key events	
2	**1900 –** life expectancy was still below 50 years of age
3	**1911 –** National Insurance Bill introduced – gave help if workers were sick or unemployed
4	**1914-1918** World War One leads to developments in surgery and treatment
5	**1928** – Fleming discovered penicillin
6	**1938 –** Florey and Chain developed use of penicillin
7	**1948 –** The NHS begins following the Beveridge report (1942)
8	**1953** – Crick and Watson discovered the structure of DNA
Key Concepts	
9	**War** – World War One and World War Two forced developments in treatment and surgery – e.g. plastic surgery and the use of antibiotics in WW2.
10	**Technology** – huge improvements in technology greatly improved the understanding and treatment of disease – e.g. X-ray, DNA, Pacemakers, dialysis and keyhole surgery
11	**National Health Service** - After WW2, the government introduced the NHS in 1948. This offered free healthcare at the point of delivery. The expansion of who could vote and the shared experience of suffering in WW2 bought about this development.

Key Words		
12	**X-Ray**	Technology using particular light rays . Used in WW1 to locate bullets in the body.
13	**Transplant**	When a faulty or damaged organ (e.g. liver) is swapped with a healthy one through surgery
14	**Radiotheraphy /Chemotherapy**	Treatment of a disease, such as cancer, by the use of chemicals
15	**Superbugs**	Bacteria that are not affected/destroyed by antibiotics or cleaning
16	**Gene therapy**	Medical treatment using normal genes to replace defective ones.
17	**Dialysis**	Technology that replicates the function of the kidneys
18	**Polio**	A contagious disease that can cause paralysis and death
19	**Penicillin**	The first antibiotic drug produced from the mould of penicillin to treat infections
20	**Pacemaker**	Implanted technology that regulates heartbeat
21	**Antibiotics**	A drug made from bacteria that kill other bacteria and so cure an infection or illness
22	**Magic bullets**	A chemical that kills a particular bacteria and nothing else
23	**Electron microscope**	Developed 1931. Allows doctors to see cells in fine detail.
24	**DNA**	Deoxyribonucleic acid, the molecule that genes are made of
25	**Cancer**	A group of related diseases. Cells divide and spread into the surrounding tissue.

Year 9 - Autumn Term: The Holocaust

Anti-Semitism (specific prejudice against the Jewish Community) has a long history in Europe. Hitler & the Nazis weren't alone in their dislike. Reasons included:

- Mistaken idea that the Jews were responsible for the death of Jesus Christ
- Jews associated with banking and money-lending; jobs that many people despised. People became jealous of their supposed wealth.

Many examples of anti-Semitism in European history; Jews mistakenly blamed for causing the Black Death in Europe, Jews forced out of England and Spain in the Middle Ages.

Hitler blamed the Jewish community for the bad state that Germany was in post-WW1. He said Jews had betrayed the German army and signed the Treaty of Versailles - this was not true. Hitler made it clear in his early years in politics that he wanted to rid Germany of the Jews. He believed they were "sub-human" and were a threat to the purity of the German people.

The Nazi Party come to power - January 1933

April 1933 - Jews banned from gov't jobs, Jewish teachers sacked. Nazi Party organised a *boycott* of Jewish businesses - this means that they strongly discouraged anyone from dealing with Jewish shops for example to deprive them of an income.

1934 - Some councils banned Jews from parks and swimming pools.

May 1935 - Jews banned from the army.

1935 - *The Nuremburg Laws* stated that Jews cannot be German citizens, could not hold a German passport. It also banned all sexual relations and marriages between Jews and non-Jews.

1938 - *Kristallnacht* (Night of Broken Glass). This was the peak of peacetime persecution. A young Jew murdered a Nazi official in Paris. Eager for revenge the Nazis organised a nationwide attack on Jewish people, homes, synagogues and businesses. It left 100 dead.

World War Two intensifies persecution

Quickly after the start of WW2 in 1939 the Nazis had conquered much of mainland Europe. With each new country they invaded they found more Jews under their control e.g. 3 million Jews lived in Poland. Hitler & his other leaders devised schemes to control what they called the "Jewish problem".

Ghettoes - In some countries Jewish communities were bricked up inside certain parts of the city. There was very little food (many died of starvation) and the hygiene was awful. Diseases such as cholera and dysentery were rife. The most famous example is the Warsaw ghetto in Poland were 440,000 Jews (nearly 40% of the city's population) were confined to an area only 5% the size of Warsaw.

Einsatzgruppen - The Nazis created death squads from their elite SS units who roamed the countrysides of eastern Europe in mobile vans. They were instructed to murder (by gassing or mass shootings) as many Jews as they could.

For some Nazis the murder of Europe's Jews was not happening quickly enough and so on 20th January 1942 they came up with the 'final solution' - a plan to mass murder Jews with poison gas.

Six death camps were built; the most famous examples are Auschwitz-Birkenau and Bergen-Belsen. Prisoners arrived on trains and were then separated into two groups; boys over 15 who looked strong an healthy were to put work. The rest were executed.

Auschwitz-Birkenau (near Krakow in Poland) has become a lasting symbol of the horror of the Holocaust. It was a place of starvation, of disease running riot and, of course, of mass murder. It is estimated that 1.1 million people died at Auschwitz largely through poison gas or by overwork. The Holocaust in total is believed to have taken he lives of 11 million people. Jews account for roughly 6 million of that but other communities were also targeted such as; 'Gypsies', homosexuals, disabled people, ethnic minorities and political opponents.

Case Study: Anne Frank

Anne Frank's story is one of the most vivid of the Holocaust. This is because she wrote a diary of her experiences as a Jewish teenager hiding from the Nazis. Anne and her family has lived in Frankfurt, Germany until 1933 when Hitler became leader of Germany. They then fled to Amsterdam.

Unfortunately the Nazis occupied the Netherlands in the early part of WW2 and the family had to go into hiding in a secret annexe above her father's factory.

The Franks were in hiding for over two years. They shared with other terrified Jews and were unable to leave the annexe at any point. They all lived in constant fear of being found.

Anne's very detailed diary is an almost unique insight into how it must have felt to live in fear for all that time. She expresses confusion about why they are persecuted and her constant fear of being discovered.

Unfortunately, her family were discovered on 4th August 1944. The family were separated and sent to a variety of different camps. Anne and her sister Margot died of a disease called typhus in Bergen-Belsen just weeks before it was liberated by the Allies.

Waseley Hills High School
Aspire, Invest, Respect

KNOWLEDGE ORGANISER

Title: Riots and Unrest in the 20th Century Year: 9 AC: 1

Number	Code	Riots and unrest in the 20th Century
1 2 3 4 5 6		**Oswald Mosley** was the leader of the **British Union of Fascists** He created the BUF based on Mussolini's Italian Fascist Party, and by **1936 it was the biggest fascist group in Britain**. On **Sunday 4th October 1935**, the BUF organised a march attended by up to **5000 supporters**. However, there were almost **100,000 anti-fascists** also there. The march quickly turned to violence and became known as the **Battle of Cable Street**.
7 8 9 10 11		The **Battle of Bamber Bridge was fought in 1943** between **White and Black American soldiers** in response to attempts to segregate troops in the town. **Racial Segregation** was common practice in America during World War Two. It separated white people from other races (referred to as 'colored') in almost all aspects of life. **Residents of Bamber Bridge supported the Black soldiers right to equality.** Private **William Crossland** was killed in the fighting. 32 Black soldiers were court-martialled (put on trial) and found **guilty of mutiny.**
12 13 14 16 17 18		The **Notting Hill Race Riots took place in 1958** between white residents and Afro-Caribbean residents. **'Teddy Boys'** were a group of working-class young people, known for listening to Rock n Roll. The Teddy Boys in Notting Hill were **openly hostile** to new migrants and first attacked migrant groups in **August 1958**. **The Riots lasted around a week.** **140 people, mainly white, were arrested.** **Commonwealth Immigrants Act 1962** was passed as a result of the riots. This reduced the number of migrants moving to Britain. **Race Relations Act 1965** was passed making racial discrimination illegal.

Number	Code	
19 20 21 22 23 24 25 26		**Northern Ireland** is sometimes known as **Ulster**. **Catholics** and **Protestants** had lived with conflict for hundred of years This conflict escalated during the **1960s-1990**s. This is known as **The Troubles**. **3,600** people were killed and more than **30,000** were wounded. **The Irish Republican Army (IRA) formed in 1969** In Belfast around **110 walls** were built to separate unionist and nationalist communities. **In 1972 'Bloody Sunday'** occurred where British Paratroopers fired on Catholic protesters **killing 13** of them. The Troubles came to an end in **1998, with the signing of The Good Friday Peace Agreement**
27 28 29		**November 1978 – February 1979** is known as the **Winter of Discontent.** **Economic problems** and the coldest winter in 16 years led to **demands for higher wages**. The government blocked this and strikes began. In 1979, **29,474,000 working days were lost** in the strikes, compared to 9,306,000 in 1978.
30 31 32		In **1972** and **1974** there were **successful mining strikes**. The **National Union of Miners** declared a national strike on **12th March 1984** In **1983** there had been **173 mining pits** in operation. By **2015** the **last deep mining pit closed** in Britain
33 34 35 36 37 38		**The Poll Tax** introduced in 1987 in Scotland, 3 years before the rest of the UK. It **charged people, not property.** The **'Can't Pay, Won't Pay'** campaign led to **4 million Scots refusing to pay the tax.** On **31st March 1990, 200,000 protestors** marched in London. The demonstration turned into a riot – **329 people were arrested.**

Waseley Hills
High School

Knowledge Organiser

Mathematics

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

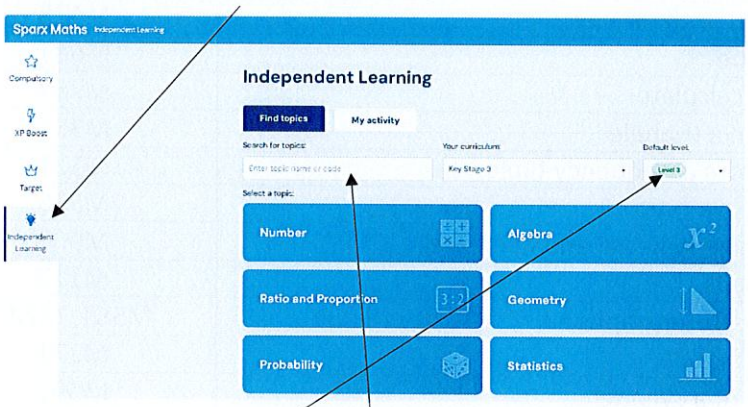
Maths

Pupils will be completing their revision for Maths on their homework platform, Sparx Maths. Every topic in the content list (below) for the Year 9 assessments contain at least one Sparx Maths Code to direct pupils to the correct questions and video. All pupils should know their login for Sparx Maths, if they have forgotten, they need to speak to their Maths teacher.

For the KS3 assessments, pupils will be completing two papers in Maths.
One non-calculator and the other calculator.
For revision, they should be practicing questions with and without a calculator.
Sparx Maths will state whether a calculator can be used.

A step-by-step tutorial on how to search the Sparx Maths Code can be seen below.

1. Login to Sparx Maths (need username and password)
2. Click on independent learning on the left tab.



3. Select your level of difficulty.
4. Type the code into the "search for topics" bar.
5. Click the topic you would like to revise and questions will appear.
6. Click on a question you would like to answer. To answer the question, you will need to click answer in the bottom right.

If you are unsure on how to work out a question, there is a button (picture below) at the bottom of the screen which allows you to watch a video.

Yr9	Sparx Maths Code
Place value columns	M704, M522
Properties of 3D solids	M767
Bar charts	M738, M460
Simplifying ratios with units	M885
Solving equations	M902
Perimeter of 2D shapes	M635
Area of compound shapes	M269, M996
Scatter graphs	M769, M596
Rounding to significant figures	M994, M131
Estimation	M878
Two-way tables	M899
Probability	M938, M206
Converting to and from standard form	M719, M678
Factorising quadratics	M100, M908
Finding missing terms in a sequence given a rule	M166
Reflections	M290
Problems with money	M478
Best value	M681
Using a calculator	M757
Angles in a triangle	M351
Mean from a frequency table	M127
Sharing in a ratio	M525
Percentage increase and decrease	M905
Scale maps	M112
Distance-Time graphs	M581, M247
Area of a circle	M231
Volume of a cylinder	M697
Ratio given one value	M801
Pythagoras theorem	M677
Trigonometry	U283
Circumference of circles	M169

A useful website to revise from alongside Sparx Maths is CorbettMaths.

The link for CorbettMaths is www.corbettmaths/content

You will just need to find the topic and a video, worksheet and answers will be accessible to use.

Waseley Hills
High School

Knowledge Organiser

R.P.E.

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

Waseley Hills

Day	Subject : RPE
Date	Period
Class YEAR 9	Code RPE9

TITLE – MALCOLM X

Students will remember the life of Malcolm X
Students will be able to demonstrate the impact of faith on action
Key Concepts to check back for: Ku Klux Klan, black nationalism, pilgrimage, faith, impact

Knowledge	Codes	Key information to recall		
		Segregation, racism, religion, Islam, ideology		
Word	**Definition**	**Synonym**	**Antonym**	**Etymology**
IDEOLOGY	a system of ideas and ideals, especially one which forms the basis of economic or political theory and policy.	Beliefs, ideas, principles, values, ideals	Dubious, wary, distrust	The term *ideology* originates from French *idéologie*, itself deriving from combining Greek: *idéā* (ἰδέα, 'notion, pattern'; close to the Lockean sense of *idea*) and *-logiā*
PILGRIMAGE	a pilgrim's journey Pilgrim - is a traveller (literally one who has come from afar) who is on a journey to a holy place	Crusade, mission, journey	Stay, stop, remain	'pilgrim' originally comes from the Latin word peregrinus (per, through + ager, field, country, land)

Contextual Knowledge

Malcolm's childhood Malcolm Little was born May 19th 1925. He was one of 8 children. When he was 6 his father, who supported black rights, died, probably murdered by racists.

Black Nationalism a type of political thought that seeks to promote, develop and maintain a black race identity for people of black ancestry. Black nationalist activism revolves around social, political, and economic empowerment of black communities and people, especially to resist assimilation into white culture (through integration or otherwise), and maintain a distinct black identity.

Pilgrimage to Mecca

Malcolm was changed forever after his pilgrimage to Mecca where he lived and worshipped alongside white men.

Waseley Hills High School

Aspire, Invest, Respect

KNOWLEDGE ORGANISER

Year 9 – RPE – AC3

FAITH IN ACTION		
CODE		KEY KNOWLEDGE
3.1	MALCOLM X	CHILDHOOD – Murder of father, murder of family members, the KKK, taken into care, racism, separation, breaking the law, drugs, violence, prison.
3.2	MALCOLM X	A MAN ON A MISSION – conversion to Islam, white supremacy, control, prejudice, discrimination, personal conviction.
3.3	MALCOLM X	A CHANGED MAN – Pilgrimage to Mecca, solidarity, open mindedness, acceptance, equality for all.
3.4	MALCOLM X	LEGACY – marching on, love for all, assassination
3.5	MARTIN LUTHER KING	CHILDHOOD – prejudice, discrimination, segregation, friendships, faith & belief
3.6	MARTIN LUTHER KING	THE BUS BOYCOTT – Rosa Parks, the civil rights movement, personal conviction
3.7	MARTIN LUTHER KING	SUFFERING AND SUCCESS – threats, brutality, I have a dream, winning and losing.
3.8	MARTIN LUTHER KING	THE END - assassination
3.9	RECAP	

Title FAITH IN ACTION			Year: 9 AC3	
Word	**Definition**	**Synonyms**	**Antonyms**	**Etymology**
RACISM	The belief that different races possess distinct characteristics, abilities, or qualities, especially so as to distinguish them as inferior or superior to one another.	Bigotry, intolerance	Anti-racism, anti-segregation	*early 20th century: from race[2] + -ism*
PREJUDICE	Preconceived opinion that is not based on reason or actual experience	Preconception, influenced, bias	Unbiased, neutral	*Middle English (in prejudice (sense 2 of the noun)): from Old French, from Latin praejudicium, from prae 'in advance' + judicium 'judgement'*
DISCRIMINATION	The unjust or prejudicial treatment of different categories of people, especially on the grounds of ethnicity, age, sex, or disability.	Intolerance, bigotry, bias	Impartiality	*from the Latin discriminat- 'distinguished between', from the verb discriminare, from discrimen 'distinction', from the verb discernere (corresponding to "to discern").*
CIVIL RIGHTS	The rights of citizens to political and social freedom and equality.	Freedom, rights, liberty	Disregard, abuse	*The earliest known use of the noun civil right is in the early 1600s. OED's earliest evidence for civil right is from around 1614, in the writing of George Chapman, poet and playwright. civil right is formed within English, by compounding. Etymons: civil adj., right n.*
PERSONAL CONVICTION	a strong opinion or belief: religious/moral convictions. deep/strong/lifelong conviction They share a deep/strong/lifelong conviction that you can do anything if you're willing to work hard.	Certainty, without doubt	Doubt, unsure, uncertain	*From late Middle English conviction, from Anglo-Norman conviction, from Latin convictiō, from convictus, the past participle of convincō ("to convict").*

Waseley Hills
High School

Knowledge Organiser

Science

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

Waseley Hills High School
Aspire, Invest, Respect

KNOWLEDGE ORGANISER

Title: Photosynthesis, Metals, Magnets and electromagnets **Year:** 9 **AC:** 1

Number	Code	Photosynthesis
1	S9.1.1	**Word equation** for photosynthesis: Carbon dioxide + water → glucose + oxygen
2	S9.1.1	Plants use the **glucose** made in photosynthesis for respiration, making proteins and to store as starch.
3	S9.1.3	**Iodine** turns from brown to blue/black when starch is present.
4	S9.1.2	Most photosynthesis occurs in the **palisade mesophyll** layer of the leaf, where there are the most chloroplasts.
5	S9.1.2	On top of the leaf is the **waxy cuticle**, a waterproof layer which prevents water being lost from the leaf.
6	S9.1.2	The **stomata** are tiny holes on the underside of the leaf which allow gases to diffuse in and out.
7	S9.1.2	The **xylem** vessel carries water and minerals in the plant. The **phloem** vessel carries sugars in the plant.

Number	Code	Metals
8	S9.1.5	An **ore** is a rock that contains traces of a metal which can be extracted.
9	S9.1.5	Metals can be listed in order of reactivity in the **reactivity series**.
10	S9.1.6	A **displacement** reaction is when a more reactive metal replaces a less reactive one in a compound.
11	S9.1.7	An **economic** effect of a problem is one which affects money or jobs.
12	S9.1.6	If a substance is **reduced** in a chemical reaction it loses oxygen, if it has been **oxidised**, it gains oxygen.
13	S9.1.6	**Electrolysis** is the process of using electricity to separate elements in a compound.
14	S9.1.6	The negative electrode is called the **cathode** and the positive electrode is called the **anode**.

Number	Code	Magnets and electromagnets
15	S9.1.8	Iron, steel, cobalt and nickel are all **magnetic** metals. Not all metals are magnetic.
16	S9.1.8	**Permanent magnets** stay magnetic once they have been magnetised. **Induced magnets** lose then magnetisation easily. Electromagnets are an example.
17	S9.1.10	A **magnetic field** is a volume of space where objects are affected by a magnets force
18	S9.1.10	When magnetic field lines are close together the magnetic field is **stronger**
19	S9.1.10	The shape of a magnetic field can be shown using **iron filings** and plotting compasses
20	S9.1.11	A **solenoid** is a coil of wire carrying an electric current. It has a similar magnetic field to a bar magnet.
21	S9.1.11	The strength of an electromagnet can be increased by increasing **the number of coils** or increasing the electric **current**

VOCABULARY

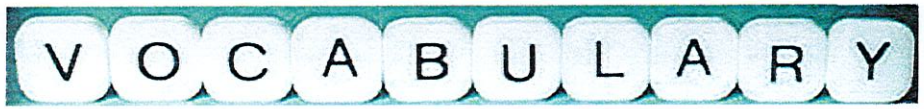
Waseley Hills High School
Aspire, Invest, Respect

Title Science			Year: 9 AC: 1	
Word	**Definition**	**Synonyms**	**Antonyms**	**Etymology**
Photosynthesis	Photosynthesis is a chemical process in which green plants make their own food using energy from the sun	chemosynthesis	"no life"	The photosynthesis process finds its origin in 2 Greek words, firsts one being "phōs" meaning 'light' and the second one being "sunthesis" meaning 'putting together'.
Exothermic	When a chemical reaction happens, energy is transferred to or from the surroundings.	Energy-releasing	endothermic	From French exothermique, from exo- ("outside") + thermique ("of heat"), both ultimately from Ancient Greek.
Endothermic	Endothermic reactions absorb energy from the surroundings.	Energy-absorbing	exothermic	Borrowed from French endothermique, from endo- ("inside") + thermique ("of heat"), both ultimately from Ancient Greek.
Incomplete combustion	Incomplete combustion happens when the supply of air or oxygen is poor. Water is still produced, but carbon monoxide and carbon are produced. Less energy is released than during complete combustion.	Broken combustion	Complete combustion	late Middle English: from late Latin combustio(n-), from Latin comburere 'burn up'.
Solenoid	A solenoid consists of a wire coiled up into a spiral shape.	magnet	uncoil	from French solénoïde, from Greek sōlēn 'channel, pipe'.
Fermentation	Fermentation is an anaerobic process: glucose → ethanol + carbon dioxide.	agitation		from late Latin *fermentatio(n-*), from Latin *fermentare* 'to ferment'

Waseley Hills High School
Aspire, Invest, Respect

KNOWLEDGE ORGANISER

	Title: Rates of reaction, Speed **Year:** 9 **AC:** 2
	Rates of reaction
1	
2	**Collision theory** reactions occur when particles collide with enough energy to make or break bonds.
3	**Rate of reaction** Rate means speed. We can increase the rate of a reaction to make a product faster.
4	**Factors increasing the rate of reaction** include increasing the temperature, surface area and concentration of reactants.
	Catalysts can increase the rate of a reaction but do not take part themselves so can be reused.
	Speed
5	Calculate the average speed for a journey by using the equation **speed = distance / time**
6	**Distance – time graph** the gradient of the graph shows the speed, horizontal lines represent stationary objects
7	**Velocity – time graph** the gradient shows the acceleration of the object. The area under the graph shows the distance.



Waseley Hills High School
Aspire, Invest, Respect

Title Rates of reaction, Speed, Bonding, Waves and Pressure			Year: 9 AC: 2	
Word	**Definition**	**Synonyms**	**Antonyms**	**Etymology**
Oscillation	Something that oscillates is something that "vibrates", or repeats the same pattern.	Vibration Fluctuation		From Latin *oscillatus*, past participle of *oscillare* "to swing."
Longitudinal	The oscillations are along the same direction as the direction of travel and energy transfer.	Lengthwise Long	Transverse	From Latin *longitudo* "length, long duration,"
Transverse	The oscillations are at right angles to the direction of travel and energy transfer.	Crossways Diagonal Horizontal	Longitudinal	From Latin *transversus* "turned or directed across,"
Velocity	Speed in a given direction	Speed Pace Tempo		From Latin *velocitatem* (nominative *velocitas*) "swiftness, speed,"
Acceleration	Change of speed	Speeding up Gathering Speed		From Latin *accelerationem* (nominative *acceleratio*) "a hastening,"
Ion	Charged particle formed when an atom or group of atoms loses or gains electrons.	Anion Cation Charged particle		Coined from Greek *ion*, neuter present participle of *ienai* "go," from PIE root **ei-* "to go." So called because ions move toward the electrode of opposite charge.

Waseley Hills
High School

Knowledge Organiser

Science

Revision Sheets

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

Y9 - Photosynthesis

The equation for Photosynthesis:

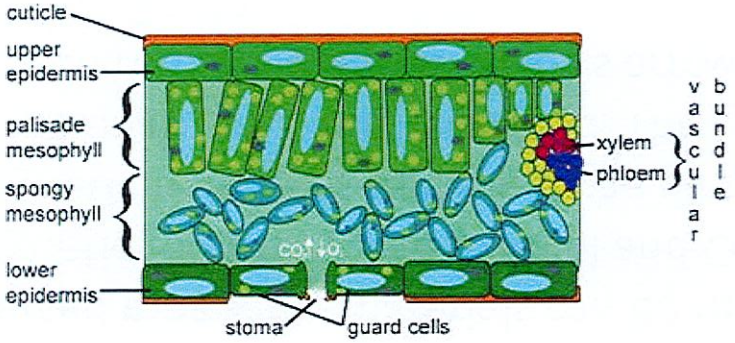
water + carbon dioxide → glucose + oxygen

$6H_2O + 6CO_2 \rightarrow C_6H_{12}O_6 + 6O_2$

Photosynthesis takes place in chloroplasts.

Glucose is used for:

1. Respiration
2. Making cellulose
3. Making amino acids



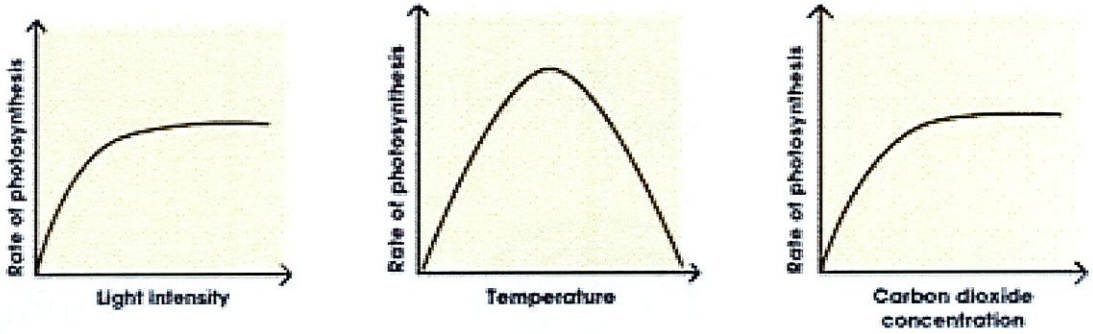
Xylem vessels - carry water from the roots up to the leaves

Stomata - open and close to allow carbon dioxide in and oxygen out of the leaf.

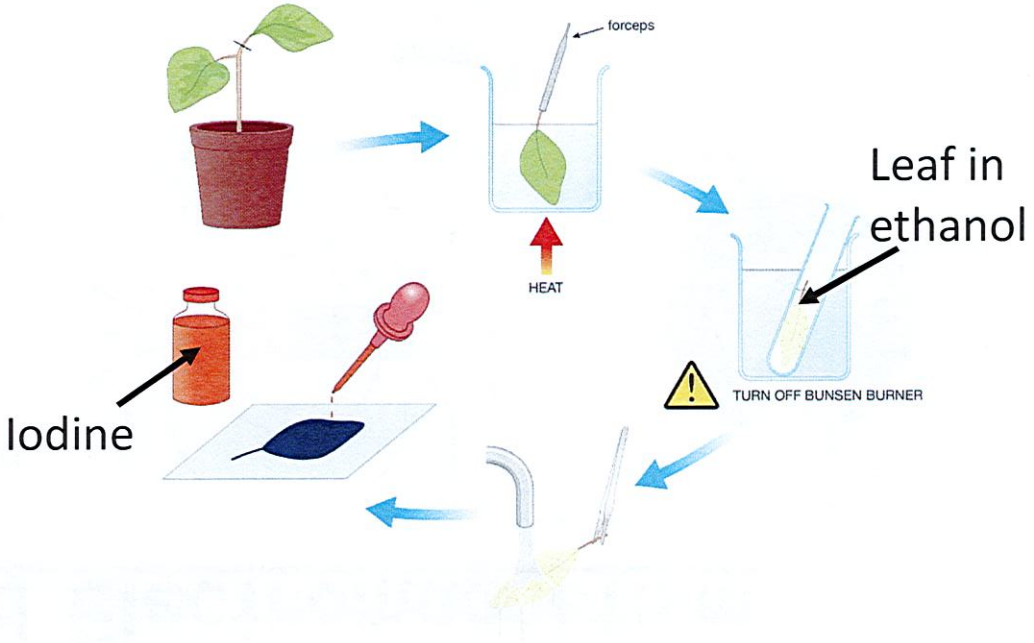
Palisade cells - contain may chloroplasts to absorb light energy.

Guard cells - control whether the stomata open and close to help prevent water loss

Limiting factors for photosynthesis

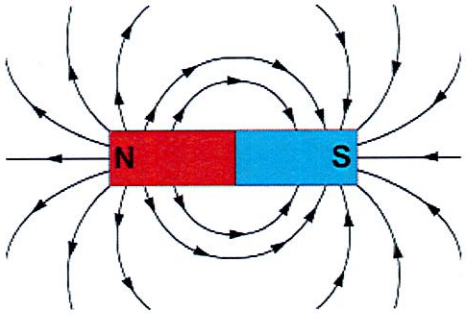


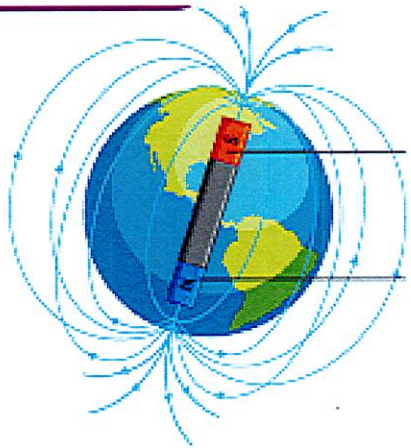
Testing for starch in a leaf using iodine

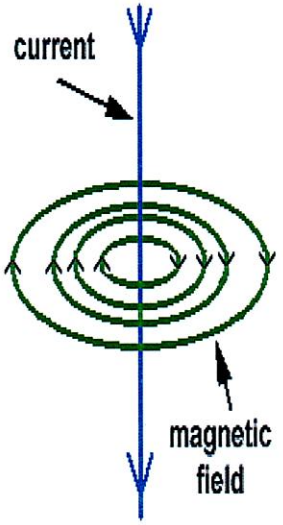


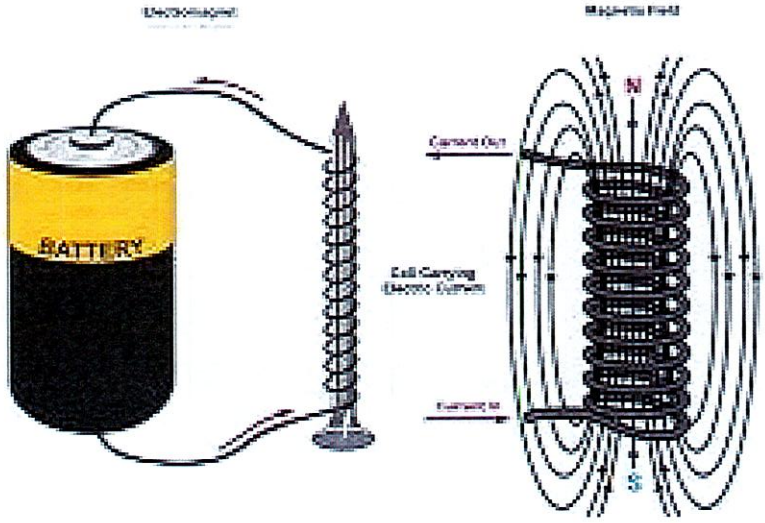
Y9 - Magnets and Electromagnetism

Magnetic substance produces a magnetic field.
Magnetic field is a non-contact force.
North and **South Poles** – the same type of poles **repel**, and opposite poles **attract**.
Permanent magnets are objects that produce their own magnetic field
Induced magnets - materials can be made magnetic too (Iron, Steel, Nickel and Cobalt)
Magnetic field lines represent the direction and strength of a magnetic field. They cannot be seen round a magnet. Always arrows from North to South.







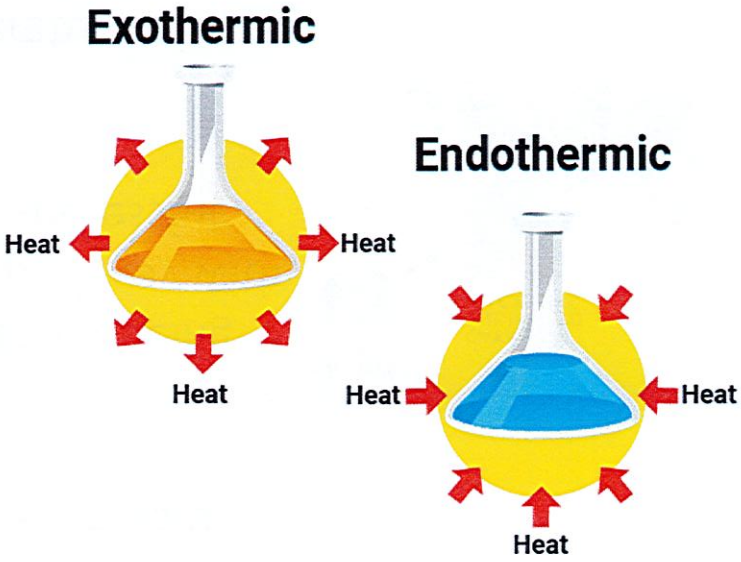


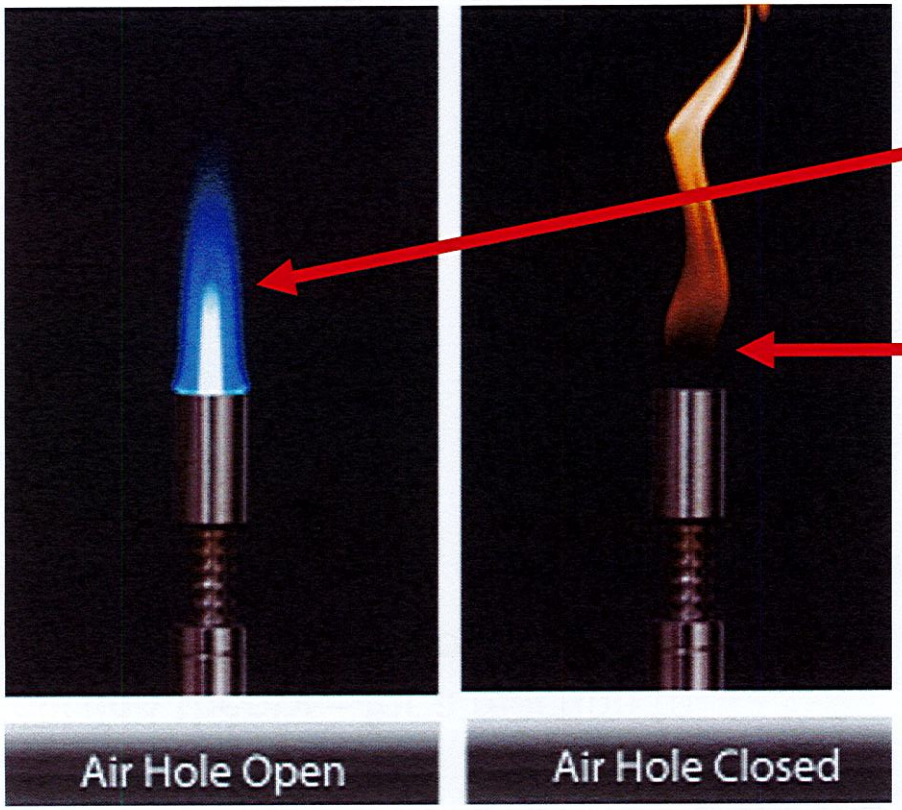
Solenoid is a coil of wire carrying an electrical current.
Electromagnet is a coil of wire carrying an electrical current with an iron core.
More coils = stronger electromagnet.

Y9 - Energy changes

Exothermic reaction - energy is transferred to the surroundings during a reaction and the temperature of the surroundings increases e.g. **combustion** reactions and **neutralisation** reactions

Endothermic reaction - energy is transferred from the surroundings and the temperature of the surroundings decreases e.g. **thermal decomposition** reactions





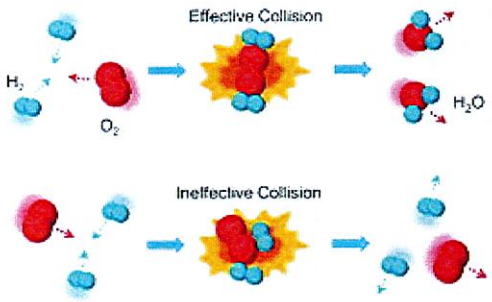
Complete combustion - a fuel burns in excess (more than enough) oxygen. The products are usually water and carbon dioxide.

Incomplete combustion - a fuel burns in restricted (not enough) oxygen. The products are usually water and carbon monoxide and/or carbon.

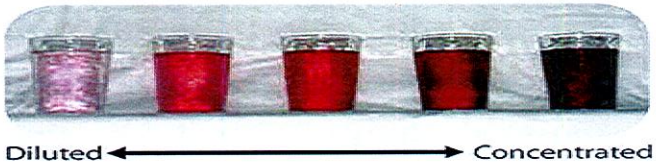
Energy is transferred to the surroundings, so the reactions are exothermic, but incomplete combustion gives out less heat than complete combustion reactions.

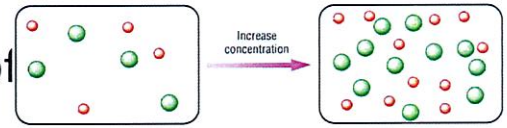
Y9 - Rates of reaction

Collision theory – for a reaction to occur particles must collide with enough energy

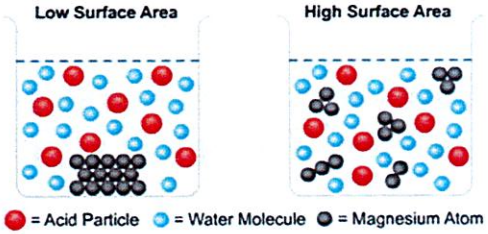


How to increase the rate of reaction:

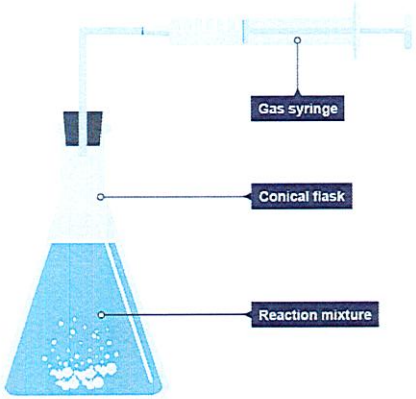




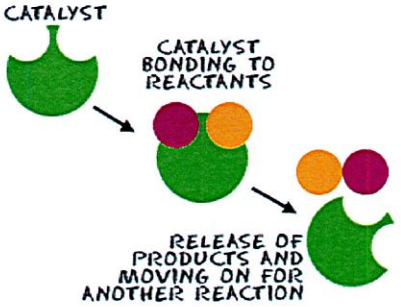
Concentration – increasing the concentration of a solution (aq). There are more particles in a given volume, so more successful collisions in a given time



Surface area – increase the surface area of a solid (s). Powders have more particles available to react with the solution, so more successful collisions in a given time

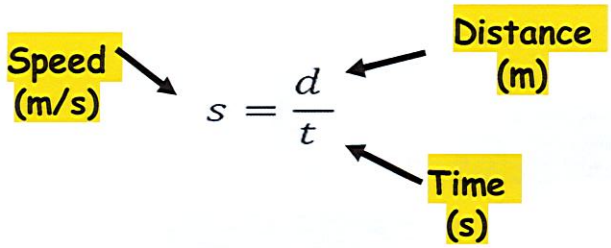


Catalyst – speeds up a reaction without being used up. It provides an alternative pathway with a lower activation energy, so more successful collisions in a given time



Temperature – increase the temperature of a solution (aq). Particles have more kinetic energy, so more successful collisions in a given time

Y9 - Speed



Scalar – quantities that only have magnitude (or size) e.g. speed, distance

Vector - quantities that have both magnitude and direction e.g. velocity, gravity

Distance-time graph

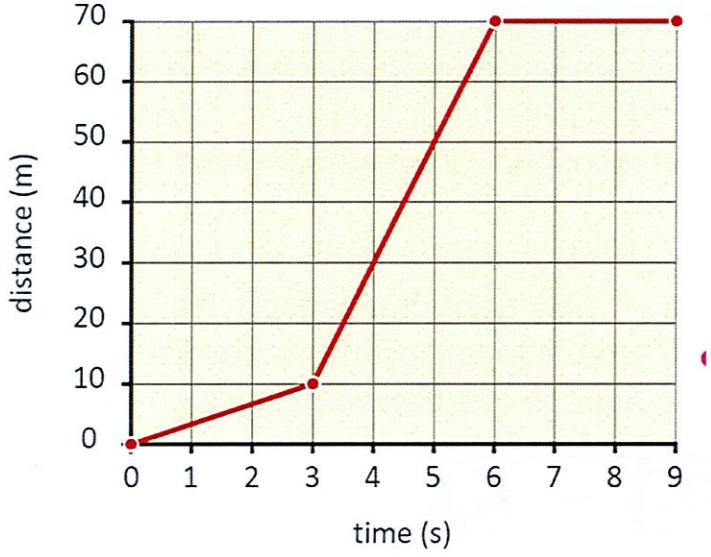
Lines that are sloped upwards = object is moving with a constant speed.

Flat (horizontal) lines = object has stopped moving – or is stationary.

Lines that are sloped downwards = object is moving with a constant speed backwards.

Speed that an object moves = gradient

Gradient = $\frac{change\ in\ y\ value}{change\ in\ x\ value}$

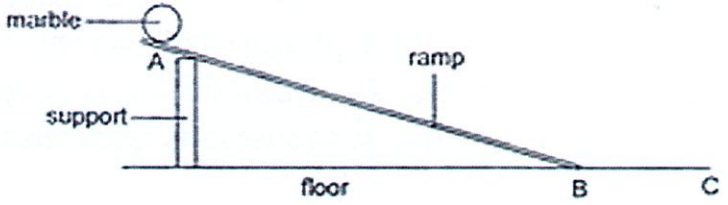


Experiment to calculate the speed of 4 different sizes balls across a 2m surface.

Independent Variable: Type of ball

Dependent Variable: Time taken for ball to travel 2m

Control Variable: Distance travelled, How steep the surface is



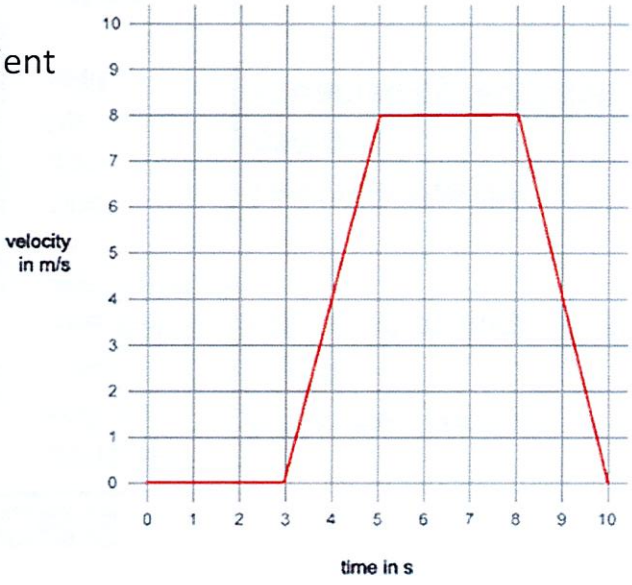
Lines that are sloped upwards = object is accelerating

The steeper the line, the faster the rate of acceleration

Flat (horizontal) lines =object has stopped accelerating – it is travelling at a constant velocity.

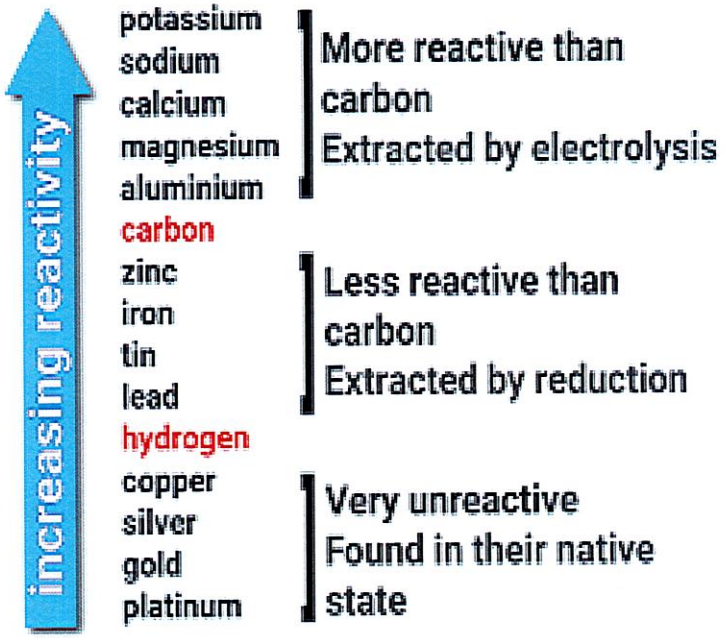
Line sloped downwards = object is slowing down, or decelerating.

Acceleration = gradient

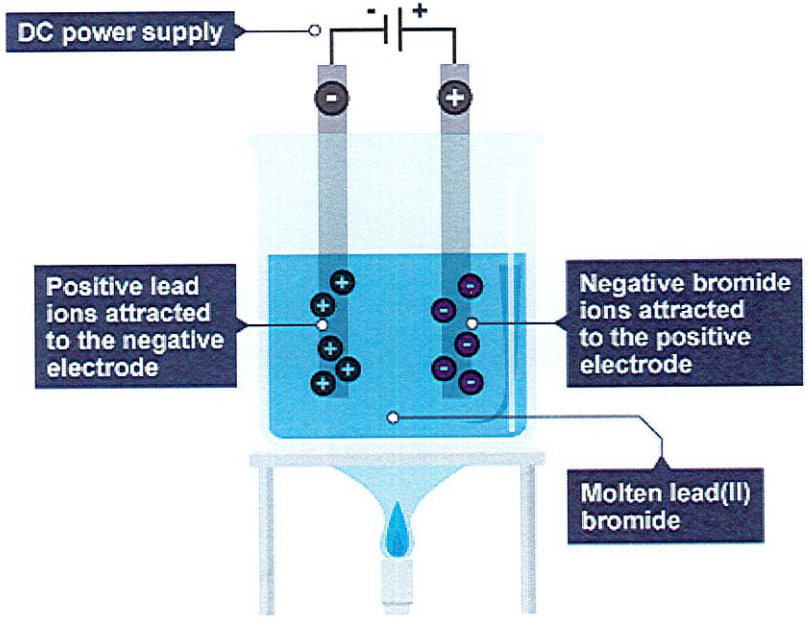


Y9 - Earth's Resources

Ore: a rock containing a high percentage of a metal.
Displacement Reactions are those where a more reactive metal substitutes for a less reactive one e.g. Copper chloride + iron → iron chloride + copper
Oxidation is when a metal gains oxygen or loses electron(s) in a chemical reaction.
Reduction is when a non-metal/compound loses oxygen or gains electron(s) in a chemical reaction.
A **Redox** reactions is one where both oxidation and reduction occurs.
Electrolysis is a process in which electricity breaks down compounds to make elements.
Electrodes are the positive or negative rods which transfer electrical energy.
Electrolytes are in the **molten** state
Ions are charged particles.



OIL RIG - **O**xidation **I**s **L**oss of electrons, **R**eduction **I**s **G**ain of electrons.



Natural resources: substances which are useful to humans and are taken from the earth; e.g. metals, glass, building materials, clay ceramics and plastics.
Limited/finite: resources which will be used up faster than they can be replaced.
Social issue: once which affects communities of people
Economic issue: one which affects the monetary worth of people or a community
Environmental issue: one which affects either the local or global surroundings
Recycled: when an object is changed in some way before being used again, e.g. melted and reformed.

Waseley Hills
High School

Knowledge Organiser

Spanish

Central Region Schools Trust
Founded by the RSA

Teach Central
Central Professional Learning, Research & Development

AC1 Spanish Y9 Knowledge Organiser

Expressing opinions

Me gusta + infinitive or singular noun

Me gustan + plural noun

Similar verbs

encantar

flipar

chiflar

molar

Me flipa bailar.

Me interesa el rap.

Me gustan los gatos.

Forming the negative

Put 'No' in front of the verb constrc-tion

Eg **No** me gusta bailar.

Add nada to say you really don't like something.

Eg **No** me gusta **nada** la pesca.

Forming the definite article (the)

	Masculine	Feminine
Singular	EL	LA
Plural	LOS	LAS

Forming the indefinite article (a some)

	Masculine	Feminine
Singular	UN	UNA
Plural	UNOS	UNAS

Adjectives - likes/dislikes

activo - active	gratis- free
animado –lively	rápido - fast
artistico—arty	sensillo - easy
barato - cheap	útil - useful
caro—expensive	musical—musical
deportivo—sporty	tranquilo—quiet
duro—hard	peligroso– danger-ous
dificil -difficult	perezoso - lazy
fácil—easy	práctico—practical
fisico—physical	raro—strange

AR verb Infinitives

aprender	to learn
bailar	to dance
cantar	to sing
celebrar	to celebrate
cenar	to dine
comprar	to buy
descansar	to relax
entrenar	to train
ganar	to earn/ win
grabar	to record
jugar	to play
montar	to ride a bike
nadar	to swim
organizar	to organise
participar	to participate
pintar	to paint
tocar	to play (instrument)
tomar el sol	to sunbathe
viajar	to travel

Feminine nouns

cocina	cooking
contaminación	pollution
moda	fashion
música	music
naturaleza	nature
pesca	fishing
televisión	tv
tecnologia	technology
violencia	violence
artes marciales	marcial arts
corridas	bullfights
drogas	drugs
injusticias	injustice
taréas domésticas	—chores
vacaciones	holidays

ER/IR verb infinitives

beber	to drink
comer	to eat
correr	to run
dormir	to sleep
escribir	to write
leer	to read
salir	to go out

Masculine Nouns

baile	dance
deporte	sport
dibujo	drawing
fútbol	football
racismo	racism
animales	animals
comics	comics
deberes	homework
examines	exams
insectos	insects
lunes	Mondays
tatuajes	tatoos
tebeos	comics
videojuegos	video games

More adjectives films/music

aburrido—boring pegadiza—catchy

educativo—educational

divertido—fun rápido—fast

emocionanate—exciting

escalofriante—scary lento—slow

estupendo—great violente—violent

excelente—excellent

favorito– favour-ite

gracioso—funny

Masc	femi
Gordo	gorda
verde	verde
Azul	azul

AC1 Spanish Y9 Knowledge Organiser

Types of films and music

Películas (de) films
animación cartoons
ciencia ficción sci-fi
Terror horror
Superheroes superhero
Aventuras adventure
Fantasia fantasy
Comedias comedies
El ritmo the rhythm
El cantante singer
El grupo group
La letra lyrics
La canción song
Las palabras words

The comparative

To compare things put 'más or menos..... que' around the adjective. Remember the adjective needs to agree with the gender and number of the first noun.

EG Las películas de animación son más divertidas que las películas de ciencia ficción.

Ser with permanent characteristics

bajo—short **alto—tall**
debil—weak **fuerte—strong**
guapo good looking **feo - ugly**
delgado—slim **gordo—fat**
limpio—clean **sucio—dirty**
pesimista– pessimistic **optimista**
pobre—poor **rico—rich**
religioso—religious
trabajador—hard-working **perezoso—lazy**
Vegano - vegan
Vegetarian—vegetarian
Industrial—industrial **historico—historical**

Soy
Eres
Es
Somos
Sois

Activities with HACER eg Hago

natación—swimming
equitación—horse riding
Judo/karaté /Boxeo
gymnasia / atletismo
ciclismo
Salsa / un picnic
Karting /Zorbing / surf

Places in the town masculine

Gimnasio—gym
Parque—park
Parque acuatico—water park
Cine—cinema
Teatro—theatre
Insti /colegio—school
Supermercado—supermarket
Centro comercial—shopping centre
Polideportivo—sports centre

Places in the town feminine

Escuela—school playa—beach
Piscina—pool bolero—bowling

Estar with temporary characteristics

Cansado - tired
Enfermo - ill
Enojado - annoyed
Estresado - stressed
Triste - sad
Nervioso - nervous
Casado - married soltero - single
Contento Feliz Alegre - happy

Estoy
Estás
Está
Estamos
Estais
están

Expressions of frequency

a veces = sometimes
de vez en cuando = from time to time
dos veces a la semana = twice a week
a menudo = often
muy a menudo =very often
todos los días = everyday
casi todos los días = almost every day
todo el tiempo = all the time
siempre = always

Future time expressions

En el futuro - in the future
La próxima semana - next week
Mañana (por la mañana) tomorrow (morning)

The Near Future

Part of IR + the Infinitive

Voy a bailar—I am going to

The weather with HACER

Hace sol
Cclor—hot frío - cold fresco - cool
viento - windy
mal tiempo bad Buen tiempo good
BUT nieva—it snows and llueve—it rains

AC2 Spanish Y9 Knowledge Organiser

Expressing opinions

Me gusta + infinitive or singular noun

Me gustan + plural noun

Similar verbs

encantar

flipar

chiflar

molar

Me flipa mi casa.

Forming the negative

Put 'No' in front of the verb constrc-tion

Eg **No** soy paciente.

Add nada to say you really don't like something.

Eg **No** soy nada organizado.

Forming the definite article (the)

	Masculine	Feminine
Singular	EL	LA
Plural	LOS	LAS

Forming the indefinite article (a some)

	Masculine	Feminine
Singular	UN	UNA
Plural	UNOS	UNAS

JOBS

peluquero/a hairdresser

camarero/a waiter/waitress

dependiente / dependienta—shop worker

jardinero/a gardener

director/a boss/ head teacher

Professor/profesora—teacher

Limpiador/a —cleaner

Pintor - painter

Piloto pilot

Fotógrafo - photographer

Programador programmer

Diseñador designer

Conductor de autobus bus driver

Receptionista receptionist

Futbolista footballer

Esteticista beautician

Policia police

Cocinero cook

Secretaria secretary

Dentista dentist

Florista florist

Artista artist

Actor/ actriz actor/actrerss

Cantante singer

Don't use the indefinite article in front of jobs - just

Soy actor.

Esta v está

Esta casa = This house

Está en B'ham = it is in Birming-ham

Rooms in the house—las habitaciones

El dormitorio - bedroom

El cuarto de baño - bathroom

El jardín - garden

El comedor - dining room

El salón - living room

La cocina - kitchen

La terraza - patio

Así que - therefore / so

Use as a connective to join 2 clauses

Por eso—therefore/so

Use to start a sentence but it links back to what you just said

Las tareas

Tengo que + infinitive—I have to

Preparer la comida - prepare the food

Server bebidas - serve drinks

Ayudar a los clientes - help customers

Cortar el pelo - cut hair

Hablar por telefono - talk on the phone

Vender productos - sell products

Limpiar—clean

Cuidar a plantas - look after plants

Cuidar a los niños—look after children

Contester el telefono - answer the phone

Adjectives -

Grande—big moderno—modern

Antiguo—very old bonito—pretty

Feo—ugly cómodo—cosy

Incomodo—uncomfortable

Creative—creative fácil—easy

Dificíl—difficult aburrido—boring

Repetivo—repetitive serio—serious

estresante—stressful severo—strict

Simpático—kind

monótono—monotoous

interesante—interesting

Masc	Fem
Serio	seria
Paciente	paciente
Fácil	fácil

Quantifiers

Bastante—quite

Un poco—a little bit

Muy—very

Demasiado—too

AC2 Spanish Y9 Knowledge Organiser

Use ser to describe permanent characteristics— Soy .....

divertido—fun responsable - responsible

gracioso—funny independiente—independant

Ambicioso—ambitious paciente—patient

Práctico—practical sociable—sociable

Serio—serious inteligente—intelligent

Organizado—organised educado—polite

Maleducado—rude exigente—demanding

Trabajador—hard—working

Soy
Eres
Es
Somos
Sois
son

Estar with temporary characteristics

Cansado - tired

Enfermo - ill

Enojado - annoyed

Estresado - stressed

Triste - sad

Nervioso - nervous

Casado - married

soltero -single

Contento Feliz

Alegre - happy

Roto - broken

Estoy
Estás
Está
Estamos
Estais
están

The Near Future

Part of IR + the Infinitive

Voy a ser famoso—I am going to be famous

Voy
Vas
Va
vamos
Vais
Van

+ A + infinitive

Estar with location

Mi casa está en el campo.

Mi casa está cerca de la playa.

En las montañas—in the mountains

En la ciudad—in the city

En las afueras—in the suburbs

En el campo—in the countryside

En la costa—on the coast

The Conditional Future

Add ía to the Infinitive + the infinitive

Me gustaría ser famoso—I would like to be famous

Me gustaría + infinitive

Eg me gustaría trabajar con animales.

Useful phrases to talk about the future

Ganar dinero - earn money

Viajar - travel

Tener hijos - have kids

Vivir en el extranjero - live abroad

Ser Famoso—be famous

Hacer un trabajo interesante—

do an interesting job

Ser voluntario—be a volunteer