Year 8

Cycle 2 Assessments

Revision Support

In this booklet, you will find **tips for parents**, **knowledge organisers** and **'what I need to know'** checklists for each subject.

Use these to support your preparation for assessments. These begin on **Monday 11th February 2019** and will take place in lesson time.

Five simple revision tips for parents

Exam season is fast approaching and you're probably feeling the pressure of trying to help your child prepare. We've compiled some revision tips to help you banish the stress of exam prep.

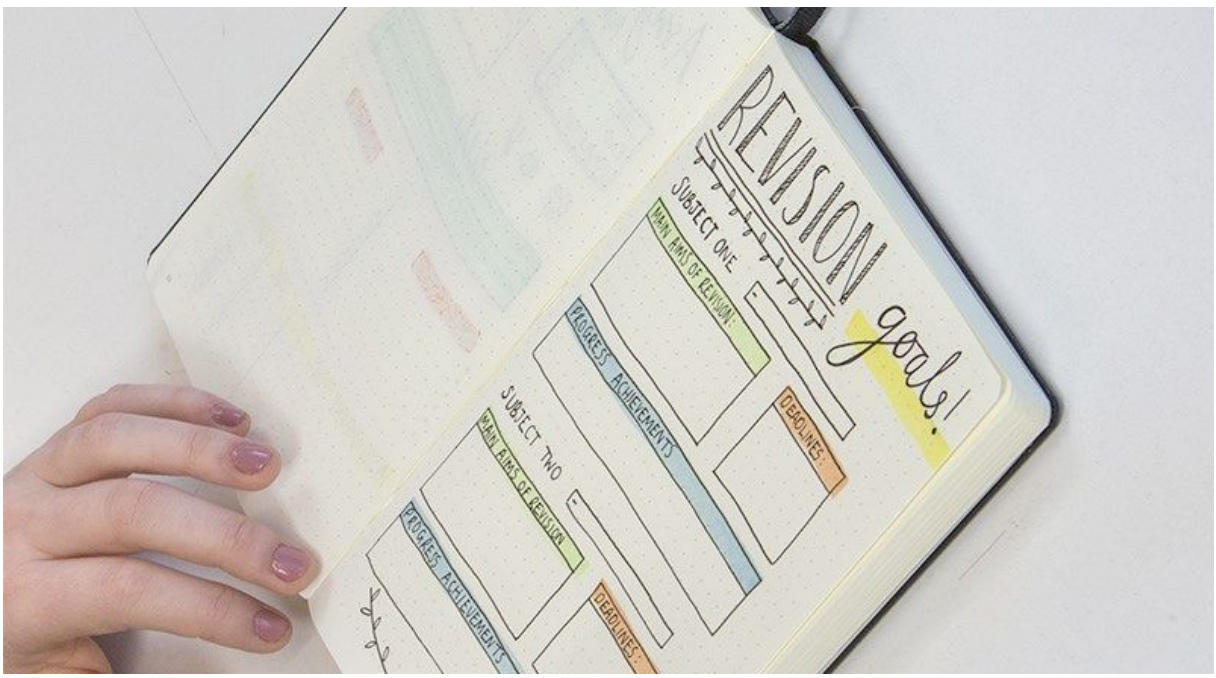
1- Establish effective study habits

Help your child create a study plan early on (this will make you aware of their exam dates too), making sure it is realistic and achievable to avoid de-motivation. Planning in advance will also help avoid ineffective cramming sessions further down the line. Encourage them to use a weekly planner so they are accountable for their work. Don't micro-manage. Provide extra support if they need or ask for it.

2- Take a break!

Don't try and force them to work for hours at a time. Their concentration span is limited and it will hinder the success of their revision if they are trying to do mammoth sessions. Suggest the use of a timer as well as regularly changing revision subject, to avoid getting stuck in a rut. Check out our Pomodoro video as it's a really simple way for students to manage their time effectively:

https://youtu.be/RlidoiSrpB0



Parent Tips

3- Practise past papers

Past papers encourage your child to think contextually, rather than just trying to memorise an entire text book. You can help by creating a realistic, timed, exam scenario when they are completing practice papers .This will encourage them to get used to working under pressure and develop exam strategies, helping them feel less anxious on the day.

4- Watch for signs of frustration

It's important that your child is in the right frame of mind for revising. If they are struggling over something in particular, it may be best to park it for the night, reassess the next day and break it down into manageable chunks. Look out for stress and worry over exams that have been and gone. Be sure to ask them how their exam went, then shift their focus to what's coming up next and encourage them to say in a positive mind-set. It is important to remember the role of a healthy diet, plenty of water and exercise in keeping a healthy outlook on exams.

5- Ask for help

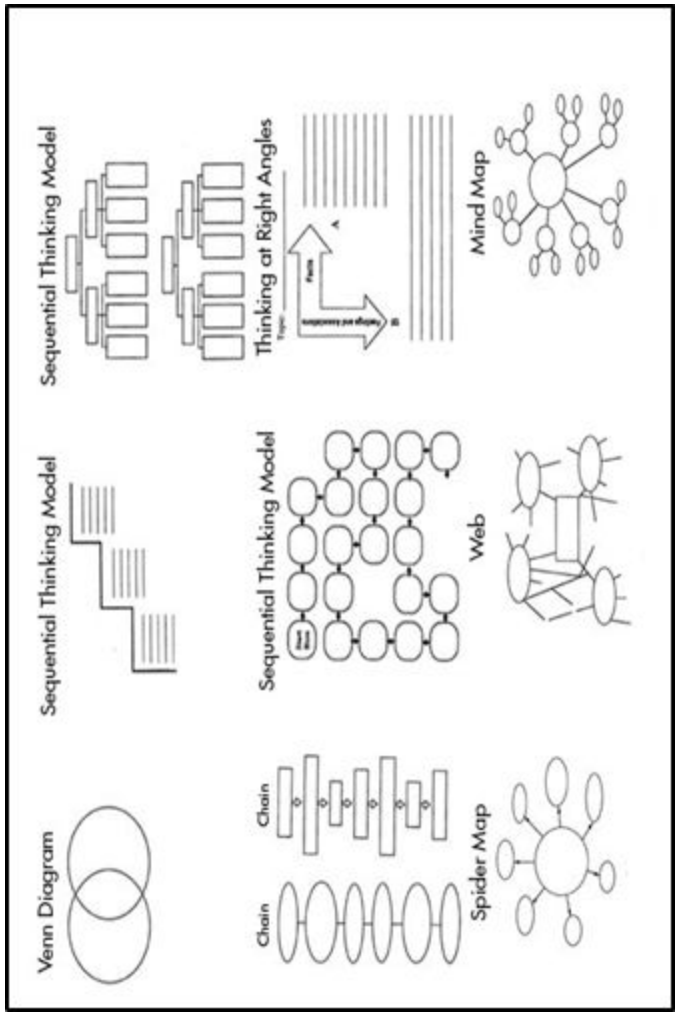
If you are working closely with your child to help them study, but feel the work is beyond your own skill set, it may be worth seeing if there is another family member who can assist. Or, if you feel this may be a long term issue and your child needs extra support, it may be worth hiring a private tutor to help improve your child's understanding of the subject. Alternatively there is lots of free support online, offering revision help for a huge range of subjects. Don't forget- teachers are just at the end of a phonecall and are ALWAYS happy to help!

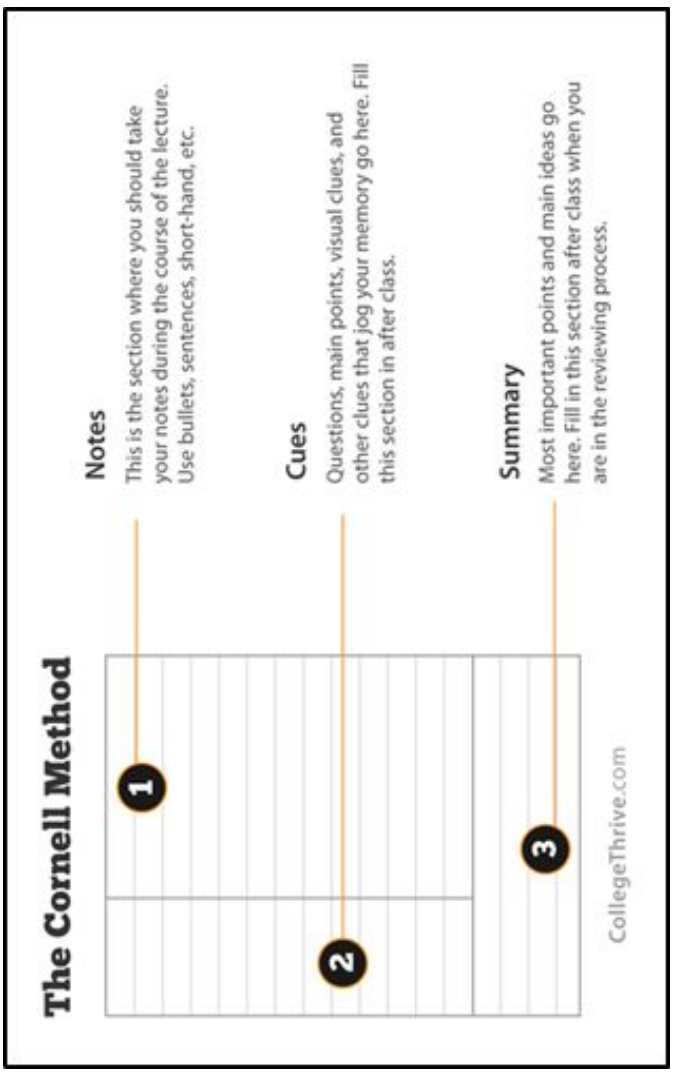
TOP TIPS

Use these knowledge organisers to revise for your assessment. Try:

- practice questions;
- getting someone to quiz you;
- making flashcards to use when quizzing;
- graphic organisers (see right);
- the Cornell method (see right);
- talk for a minute on the given term/topic – no pauses, no hesitations. Slips or repetitions or micro pauses lose a ‘life’ – three strikes and you’re out!

- Ask someone at home to use the ‘what I need to know’ checklists to test you on what you have learned.





Weekly Revision Timetable

Name: _____

Day	9:00 – 10:00	10:00 – 11:00	11:00 – 12:00	12:00 – 1:00	1:00 – 2:00	2:00 – 3:00	3:00 – 4:00	4:00- 5:00	5:00 – 6:00	6:00 – 7:00	7:00 – 8:00	8:00 – 9:00	9:00 – 10:00
Monday													
Tuesday													
Wednesday													
Thursday													
Friday													
Saturday													
Sunday													

School Day

***Remember: make sure you give yourself breaks and allow time to relax and do the things your want to do and enjoy doing.*

Year 8

English

Year 8 English Revision

What I Must Know			
I understand the plot of the play.			
I understand the characters in the play.			
I understand the main themes of the play.			
I understand the context of the playl.			
I can recall key quotes and understand how they demonstrate my understanding of character, theme and context.			
I know and understand key vocabulary			

Year 8 Romeo & Juliet Knowledge Organiser

Context
Duelling and the concept of honour: Maintaining the honour of your family name was hugely important at the time. If you were challenged to a duel and you refused, you would be deemed a coward, thus damaging your honour and the status of your family. Most Elizabethan gentlemen carried swords in public and many did fight in the streets.
Courtly Love & cures for lovesickness: common in medieval literature where a knight was consumed with passion for an unattainable noblewoman; Romeo fits this perfectly. Elizabethan doctors saw unrequited love or desire as a disease, a type of melancholy sometimes called lovesickness. They tried various cures and sometimes sent patients to church to confess to a priest. They believed that if lovesickness was left untreated, it could lead to madness.
Role of women in a patriarchal society: Elizabethan England was a society controlled by men. Women were seen as the weaker sex & were expected to be meek & mild, and most importantly, obedient to their fathers & later their husbands.
Arranged marriages: Marriages amongst the wealthy were arranged by parents in order to match or improve social standing. However, in practice, parents did try to choose someone their child liked and was happy to marry. Secret marriages such as that between the young Romeo and Juliet would have been both illegal and shocking.
The Italian setting of the play: The play is set in Italy, which was known for its warring states. It is also a Catholic country; religion was extremely important and marriage vows were seen as sacred – once made, they could not be broken.

Plot	
ACT 1	In Italy, two noble families (the Montagues & Capulets) are feuding yet again. Romeo is in love with Rosaline, who rejects his love. As a result, he is depressed. To cure Romeo of his lovesickness, Benvolio persuades him to attend a masked ball at the Capulets, where he might see prettier girls and therefore forget about Rosaline. Romeo meets Juliet and they instantly fall in love with one another. Tybalt hears Romeo's voice at the ball and is furious that a Montague has dared to attend.
ACT 2	Romeo stands beneath Juliet's balcony. He sees Juliet leaning over the railing, hears her calling out his name & wishes that he wasn't a Montague. He reveals his presence & they resolve, after a passionate exchange, to be married secretly.
ACT 3	Romeo returns from his recent marriage to Juliet and encounters Tybalt, who challenges Romeo to a duel. Unbeknownst to all present, Tybalt is now Romeo's kinsman by marriage so Romeo refuses. Mercutio is livid with Romeo's refusal and fights with Tybalt who underhandedly kills Mercutio. Furious by the death of his friend, Romeo kills Tybalt and takes shelter in the Friar's cell. The Prince exiles Romeo for his part in the fray.
ACT 4	In despair, Juliet seeks Friar Lawrence's advice. He gives her a sleeping potion, which for a time will cause her to appear dead. Thus, on the day of her supposed marriage to Paris, she will be carried to the family vault. By the time she awakens, Romeo will be summoned to the vault and take her away to Mantua.
ACT 5	The Friar's letter fails to reach Romeo. When he hears of Juliet's death, Romeo procures a deadly poison from an apothecary and secretly returns to Verona to say his last farewell to his deceased wife and die by her side. When Juliet awakens from her deep sleep, she realises Romeo's error and kills herself with his dagger. The Capulets and Montague decide to reconcile as a result of the deaths of their children.

Key Spellings

Romeo	Juliet	Tybalt	Mercutio	Benvolio	Montague	Capulet	Verona
Shakespeare	Scene	Violence	Tragic	Iambic Pentameter	Foreshadowed	Monologue	Elizabethan
Patriarchy	Patriarchal	Oxymoron	Metaphor	Simile	Society	Bravado	Feud

Significant characters	
Romeo	A young Montague. Not interested in violence, only love. He's passionate and sensitive yet also impulsive.
Juliet	A young Capulet. Naïve and sheltered at the beginning, develops into a strong character. Grounded.
Friar Lawrence	Friend to both Romeo and Juliet. Civic-minded. Also expert with potions & herbs.
Nurse	Like a mother to Juliet / confidante. Earthy/sexual. Often says inappropriate things.
Capulet	Juliet's father. Prudent and caring but can fly into rage if respect is lacking.
Mercutio	Romeo's close friend. Witty, bawdy, cynical and a hot-headed character.
Benvolio	Romeo's cousin. Tries to keep the peace and keep Romeo's mind off of Rosaline.
Prince	Leader of Verona, concerned with keeping order between the warring families.
Tybalt	Juliet's cousin. Obsessed by family honour; quick to draw his sword. He despises all Montagues.

Key themes
CONFLICT: Conflict is one of the key driving forces in the play and it occurs between a range of characters: between warring households; within families; within friendship groups; and between members of the communities. This conflict results in violence; violence opens the play in scene one and it also concludes the play with the deaths of the two lovers. It is worth noting that the motif of light vs dark is also linked to many of these themes.
LOVE: The love Romeo and Juliet share is beautiful, passionate, exhilarating, transformative and they are willing to give everything for it. But it is also chaotic and destructive, bringing death to friends, family and to themselves. It is worth noting that the motif of light vs dark is also linked to many of these themes.
FATE: No matter how much they love each other or what plans they make, their struggles against fate only help fulfil it. But defeating or escaping fate is not the point. No one escapes fate. It is Romeo and Juliet's determination to struggle against fate in order to be together, whether in life or death, that shows the fiery passion of their love and which makes that love eternal.

Dramatic devices	
Dramatic Irony	The audience know something that the people on stage don't. For example: Benvolio and Mercutio think Romeo is pining for Rosaline. The audience know that he is pining for Juliet.
Soliloquy	Where the character speaks their thoughts out aloud to itself regardless of who can hear.
Aside	A remark or passage in a play that is intended to be heard by the audience but not the characters in the play.
Foreshadowing	A warning or hint at a future event in the play.
Monologue	A long speech by a character in a play
Tragedy	A play dealing with tragic events and having an unhappy ending, especially one concerning the downfall of the main character.

Other key terms	
Oxymoron	A combination of words that have opposite or very different meanings
Metaphor	A thing regarded as representative or symbolic of something else.
Iambic pentameter	A line of verse with five metrical feet, each consisting of one short (or unstressed) syllable followed by one long (or stressed) syllable, for example Two households, both alike in dignity.
Imagery	To use figurative language (similes, metaphors and personification) to represent objects, actions and ideas in such a way that it appeals to our physical senses.
Tragedy	A play dealing with tragic events and having an unhappy ending, especially one concerning the downfall of the main character.
Prologue	PROLOGUE: a separate introductory section of a literary, dramatic, or musical work. In Romeo and Juliet, the prologue summarises the events of the play, informing the audience that the protagonists (main characters) 'take their life' at the end. This then colours the audience's view from the start, as they know that the play is a tragedy.

Year 8

Mathematics

Year 8 Maths Revision

What I Must Know			
Express one quantity as a percentage of another. Compare two quantities using percentages and work with percentages greater than 100%.			
Interpret fractions and percentages as operators with and without a calc.			
Percentage change, percentage of amount, increase and decrease - with and without a calc.			
Original value problems and simple interest in financial maths.			
Substitute numerical values into formulae and expressions, including scientific formulae. Include all prior learning (fractions, decimals and negatives).			
Simplifying expressions involving sums. Indices laws. Simplifying expressions involving products and powers. Apply to perimeter of 2D shapes.			
Expanding a single bracket. Expanding two single brackets and simplify. Apply to area on 2D shapes.			
Factorising a single bracket. Expand two brackets.			
Solving linear equations including brackets and fractions.			
Rearranging where the subject appears once. Solving linear equations where rearranging is needed.			

Year 8 Maths Revision

Topic/Skill	Definition/Tips	Example
1. Percentage	Number of parts per 100.	31% means $\frac{31}{100}$
2. Finding 10%	To find 10%, divide by 10	10% of £36 = 36÷10=£3.60
3. Finding 1%	To find 1%, divide by 100	1% of £8 = 8÷100 = £0.08
4. Percentage Change	$\frac{Difference}{Original} \times 100\%$	A games console is bought for £200 and sold for £250. % change = $\frac{50}{200} \times 100 = 25\%$
5. Fractions to Decimals	Divide the numerator by the denominator using the bus stop method.	$\frac{3}{8} = 3 \div 8 = 0.375$
6. Decimals to Fractions	Write as a fraction over 10, 100 or 1000 and simplify.	$0.36 = \frac{36}{100} = \frac{9}{25}$
7. Percentages to Decimals	Divide by 100	$8\% = 8 \div 100 = 0.08$
8. Decimals to Percentages	Multiply by 100	$0.4 = 0.4 \times 100\% = 40\%$
9. Fractions to Percentages	Percentage is just a fraction out of 100. **Make the denominator 100 using equivalent fractions.** When the denominator doesn't go in to 100, use a calculator and **multiply the fraction by 100.**	$\frac{3}{25} = \frac{12}{100} = 12\%$ $\frac{9}{17} \times 100 = 52.9\%$

Topic/Skill	Definition/Tips	Example
1. Increase or Decrease by a Percentage	Non-calculator: **Find the percentage** and **add** or **subtract** it from the **original** amount. Calculator: Find the **percentage multiplier** and multiply.	Increase 500 by 20% (Non Calc): 10% of 500 = 50 so 20% of 500 = 100 500 + 100 = 600 Decrease 800 by 17% (Calc): 100%-17%=83% 83% ÷ 100 = 0.83 0.83 x 800 = 664
2. Percentage Multiplier	The **number** you **multiply** a quantity by to **increase or decrease** it by a **percentage**.	The multiplier for increasing by 12% is 1.12 The multiplier for decreasing by 12% is 0.88 The multiplier for increasing by 100% is 2.
3. Reverse Percentage	Find the **correct percentage given in the question**, then work backwards to **find 100%** Look out for words like '**before**' or '**original**'	A jumper was priced at £48.60 after a 10% reduction. Find its original price. 100% - 10% = 90% 90% = £48.60 1% = £0.54 100% = £54
4. Simple Interest	Interest calculated as a **percentage of the original** amount.	£1000 invested for 3 years at 10% simple interest. 10% of £1000 = £100 Interest = 3 × £100 = £300

Topic/Skill	Definition/Tips	Example
1. Expression	A mathematical statement written using symbols, numbers or letters,	$3x+2$ or $5y^2$
2. Equation	A statement showing that two expressions are equal	$2y-17=15$
3. Identity	An equation that is true for all values of the variables An identity uses the symbol: $\equiv$	$2x \equiv x+x$
4. Formula	Shows the relationship between two or more variables	Area of a rectangle = length x width or A=LxW
5. Simplifying Expressions	Collect 'like terms'. Be careful with negatives. x^2 and x are not like terms.	$2x+3y+4x-5y+3$ $=6x-2y+3$ $3x+4-x^2+2x-1=5x-x^2+3$
6. x times x	The answer is x^2 not $2x$.	Squaring is multiplying by itself, not by 2.
7. $p \times p \times p$	The answer is p^3 not $3p$	If p=2, then p^3=2x2x2=8, not 2x3=6
8. $p+p+p$	The answer is 3p not p^3	If p=2, then 2+2+2=6, not $2^3=8$
9. Expand	To expand a bracket, multiply each term in the bracket by the expression outside the bracket.	$3(m+7)=3x+21$
10. Factorise	The reverse of expanding. Factorising is writing an expression as a product of terms by 'taking out' a common factor.	$6x-15=3(2x-5)$, where 3 is the common factor.

Year 8

Science

Year 8 Science Revision

What I Must Know- Biology			
Describe: Graphs showing limiting factors of photosynthesis.			
Identify: Mineral deficiencies in plants.			
Explain: The role of the stomata.			
Define: Photosynthesis.			
Calculate: Rates of photosynthesis			
Label: A cross-section of a leaf's structure.			
State: The difference between aerobic and anaerobic respiration.			

Year 8 Biology Knowledge Organiser
Topic 1: Health and Lifestyle

KPI 1: Describe the requirements for a healthy human diet.

There are 7 major food groups, a balanced diet will contain the correct amounts of all of these for the person's needs, e.g. someone who does a lot of exercise will need a lot more carbohydrate than someone who does not. The seven food groups are summarised below:

Food Group	Example	Function
Protein	Fish, meat, dairy	For growth and repair.
Fat	Butter, oils, nuts	To provide energy. Fat provides a long term store of energy. It also provides insulation for the body.
Carbohydrate	Bread, pasta, sugar	To provide energy.
Fibre	Vegetables, Bran	To help food move through the gut.
Minerals	Dairy (calcium)	Required in small amounts to remain healthy, for example calcium is crucial for healthy teeth and bones.
Vitamins	Oranges (vitamin C), Carrots (vitamin A)	Required in small amounts to remain healthy, for example vitamin D is needed to keep teeth and bones healthy.
Water	Water, fruit juice, milk	Needed to form the cytoplasm of the cells and other fluids.

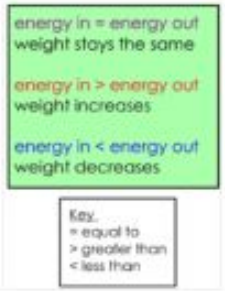
Deficiency Diseases

Deficiency diseases are when the body does not get enough of a certain nutrient. For example a lack of vitamin C can lead to **scurvy** which **affects the gums**. A lack of vitamin D can lead to rickets which **affects the bones.**

Key Terms	Definitions
Kilojoules (kJ)	A unit used to measure energy in foods
Deficiency Disease	A disease caused by the lack of a nutrient

Energy in Food

The energy in food is often measured in kJ, the amount of energy you need depends on your lifestyle. If there is an imbalance you will put on or loose weight.

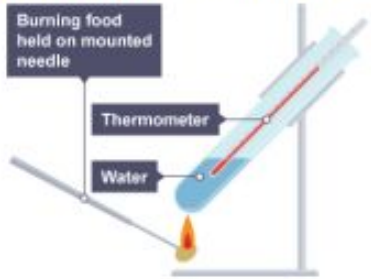


Food Tests

There are some simple chemical tests that can be carried out, to see what food groups are present. If iodine is added to starch it will turn blue/black. If Benedict's solution is added to a sugar it will go orange. To test for fat, mix the substance with a small amount of ethanol and distilled water, if a milky white emulsion appears, then fat is present.

Measuring Energy in Food

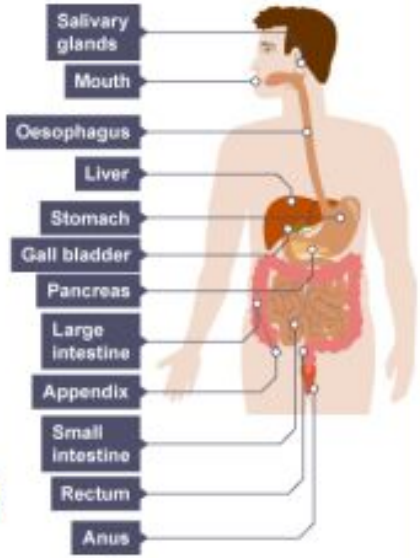
The energy in different foods can be measured using a simple experiment. If the food is set on fire, it can be used to heat up water and by measuring the temperature change, you should be able to see which foods cause the greatest rise in temperature and have given out the most energy.



Year 8 Biology Knowledge Organiser
Topic 1: Health and Lifestyle

KPI 2: Describe digestion at the molecular level.

Food is digested in the digestive system, this is an organ system. You should be able to name all parts of diagram below:

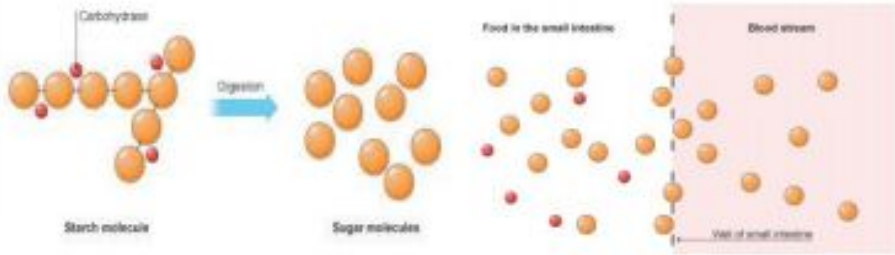


- The mouth has teeth that mechanically digest the food, it also has a salivary gland that releases enzymes to break the food down.
- The oesophagus is a muscular tube that pushes the food into the stomach
- The stomach churns the food up, while also adding acid and enzymes to break the food down.
- In the small intestine, food is broken down further and is absorbed thorough the walls of the intestine into the blood stream.
- The large intestine absorbs any remaining water
- Finally the food passes through the anus as faeces

Key Terms	Definitions
Enzymes	Protein molecules that speed up chemical reactions
Digestive System	The organ system that breaks down food into small molecules
Mechanical Digestion	When large pieces of food are broken down into smaller ones (e.g. by chewing)
Chemical Digestion	When food is broken down into small soluble chemicals, enzymes help with this

Enzymes

Enzymes help to break down larger food molecules into smaller ones, so that they can be absorbed through the walls of our small intestines, into our blood stream.
Proteins, carbohydrates and fats each have their own enzyme that breaks them down.



KPI 3: Realise the possible ill-effects of recreational drugs

Drugs can be divided up into two types, **medicinal** which are prescribed to treat an illness and **recreational,** which are taken for pleasure. Some recreational drugs are **legal and others are illegal.**

Type of drug	Effect on the body	Example
Stimulant	Speeds up reactions	Caffeine (legal) Cocaine (illegal)
Depressant	Slows down reactions	Alcohol (legal) Cannabis (illegal)
Painkiller	Stops the feeling of pain	Morphine (legal) Heroin (illegal)

Year 8 Biology Knowledge Organiser
Topic 4: Adaptations

KPI 1: Describe the factors effecting the abundance and distribution of organisms

Adaptation

- An animal must be able to find food, breed and navigate its way around its habitat if it is to survive.
- Every animal has evolved gradually over millions of years to become well suited, or adapted, to its habitat.
- These adaptations are specific to the environment of the animal and are essential for survival.
- Here are some examples:

Snow Leopard

- Big paws to evenly spread weight and help with walking through snow
- Thick fur for insulation

Siamang Gibbon

- Long arms and fingers for swinging through trees and gripping branches
- Forward facing eyes for judging distances

Bactrian Camel

- Fat stored in humps to convert to water
- Wide feet to even spread weight and prevent sinking into the sand

Humboldt Penguin

- Streamlined bodies to help with swimming
- Serrated beaks to help with catching and swallowing slippery fish

Key Terms	Definitions
Adaptation	Something which helps an organism to survive in their environment, e.g, humps for storing water
Habitat	The environment that an organism lives in
Competition	When animals or plants compete for limited resources
Intraspecific competition	Competition between individuals of the same species
Interspecific competition	Competition between individuals of different species

Competition

- Animals and plants have to compete for the limited resources available to them
- The animals that are best adapted will win and survive
- There are two types of competition
  - Interspecific – between individuals of different species
  - Intraspecific – between individuals of the same species

Competition in animals

- Animals compete for:

Food

Water

Space

Mates

Year 8 Biology Knowledge Organiser
Topic 4: Adaptations

KPI 1: Describe the factors effecting the abundance and distribution of organisms

Competition in plants

- Plants compete for:

Nutrients

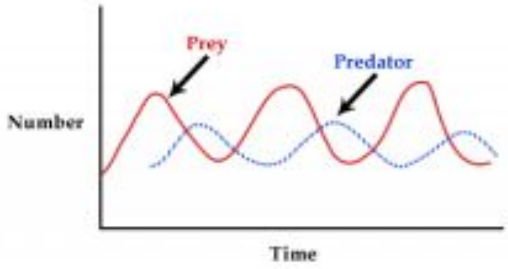
Water

Space

Sunlight

Predator-prey relationships

- Numbers of predators and prey are interdependent on each other
- If the numbers of prey drop then the numbers of predators will also drop after a while



Key Terms	Definitions
Interdependent species	If the number of one species changes it will affect the numbers of the other species
Variation	Differences between living organisms of the same species
Continuous variation	Differences that can take any value, e.g. height
Discontinuous variation	Differences that can only take set values, e.g. blood groups
Inherited variation	Variation in an individual that is caused by genetics
Environmental variation	Variation in an individual that is caused by the environment

KPI 2: Explain how characteristics can be inherited by individuals

Causes of variation

- The differences between living things of the same species is known as variation.
- Variation can be caused by differences in genes (inherited variation) e.g. eye colour, or differences in the environment e.g. language.
- Some variation is caused by a mixture of both genes and environment (e.g. weight and height).

Types of variation

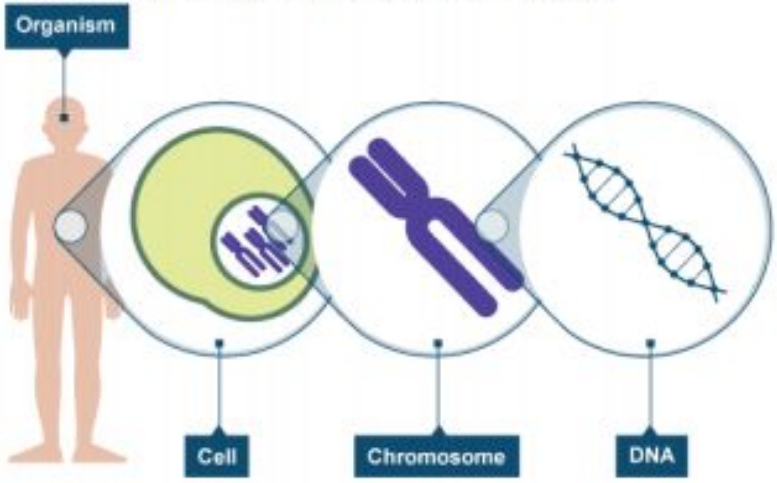
- Continuous variation is variation that can take any value (e.g. height or weight)
- Continuous variation should always be shown on a line graph
- Discontinuous variation is variation that can only take set values (e.g. shoe size or blood group)
- Discontinuous variation should always be shown on a bar chart

Year 8 Biology Knowledge Organiser
Topic 4: Adaptations

KPI 2: Explain how characteristics can be inherited by individuals

DNA

- DNA contains all the instructions needed to make an organism
- Everybody has unique DNA (apart from identical twins)
- DNA is found in the nucleus of every cell
- The DNA molecules are twisted and folded into tiny structures called chromosomes
- DNA has a double helix structure – this means it is twisted twice
- A short length of chromosome which codes for a characteristic is called a gene
- Genes contain the information to produce proteins
- DNA and therefore genes are passed on from parents to their offspring
- Alleles are different forms of the same gene



Key Terms	Definitions
DNA	The molecule containing all the instructions to make an organism
Chromosome	A structure containing DNA found inside the nucleus of a cell
Gene	A section of DNA coding for a characteristic
Allele	A form of a gene
Dominant	An allele that is always expressed (capital letter)
Recessive	An allele that is only expressed if there is no dominant allele present (lower case letter)

Inheritance

- Alleles can be dominant or recessive
- Dominant alleles will always be expressed (the characteristic they code for will be seen in the individual), they are given a capital letter
- Recessive alleles will only be expressed if the dominant allele is not present (the characteristic they code for will only be seen if the dominant characteristic is not present), they are given a lower case letter
- Punnet squares can be used to show how alleles are inherited:

Genes from mother

Genes from father	B	b
B	BB	Bb
b	Bb	bb

- B is the dominant allele for brown eyes
- B is the recessive allele for blue eyes
- Offspring BB and Bb would have brown eyes as they have the dominant allele
- Offspring bb would have blue eyes as there is no dominant allele
- There is a 1 in 4 chance of the offspring having blue eyes
- There is a 3 in 4 chance of the offspring having brown eyes

Year 8 Biology Knowledge Organiser
Topic 4: Adaptations

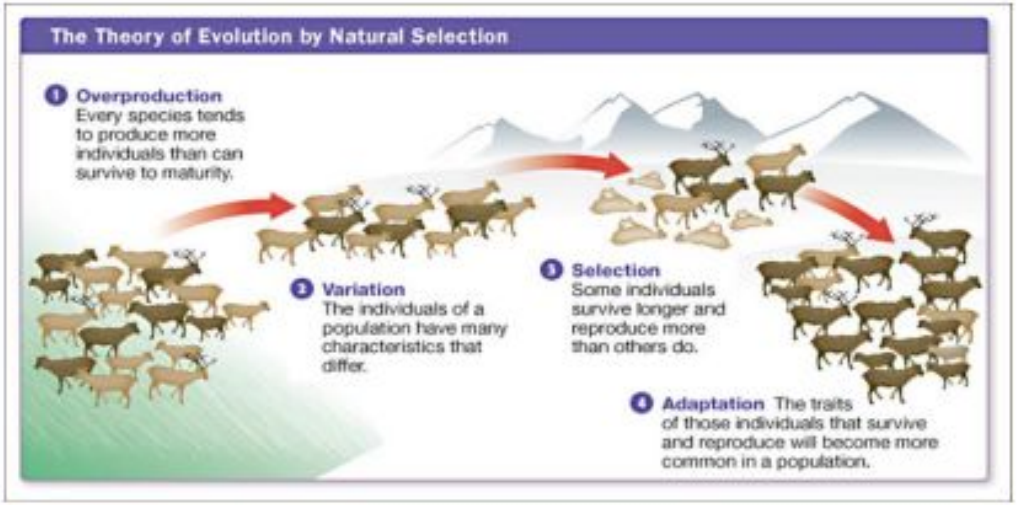
KPI 3: Outline evolution by natural selection

Evolution

- The theory of evolution states that all living organisms evolved from simple life forms
- These first simple life forms developed over three billion years ago
- The process that leads to evolution is called natural selection.

Natural selection

- Within a population there are variations between individuals leading to adaptations
- Individuals with the adaptation have an advantage and are more likely to survive than those without
- The individuals that survive will reproduce and have offspring
- The offspring will inherit the genes for the best adaptations from their parents
- Over time the population will change towards individuals with the advantageous adaptation – it will evolve



Key Terms	Definitions
Evolution	The changes in organisms seen over long periods of time
Natural selection	The process that leads to evolution
Extinction	When no individuals of a species survive
Endangered	When only small numbers of individuals of a species remain and there is a risk the species might become extinct
Conservation	Work done to try to ensure that a species does not become extinct

Extinction

- If all the individuals of a species die then the species would become extinct
- We know that species have become extinct because of fossil records of species that no longer exist
- Extinction can be caused by many things including:
  - New diseases
  - New predators
  - Climate change
  - Competition

Conservation

- Conservation is anything that is done to try to stop an endangered species becoming extinct
- Examples of endangered species include the Leatherback Sea Turtle, Ivory Billed Woodpecker and the Amur Leopard
- Conservation work can include:
  - Captive breeding
  - Seed banks
  - Conservation areas
  - Nature reserves

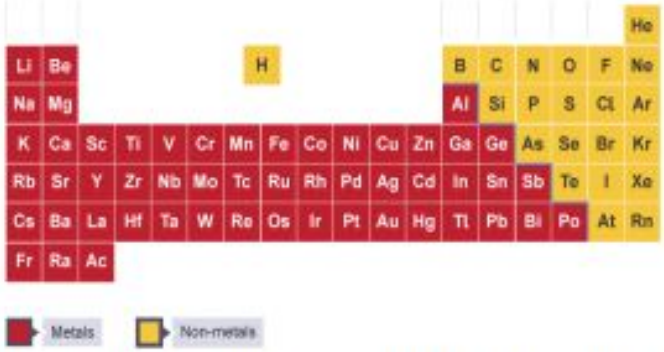
Year 8 Science Revision

What I Must Know- Chemistry			
Describe: Energy level diagrams.			
Identify: Renewable and Non-renewable fuels.			
Explain: Thermal decomposition.			
Define: Chemical reactants and products.			
Define: Exothermic and Endothermic.			
Calculate: Reacting masses.			
Label: Balanced symbol equations.			
Label: Energy level diagrams.			
State: What is meant by conservation of mass.			

Year 8 Chemistry Knowledge Organiser
Topic 3: Periodic Table

KPI 1: Describe the arrangement of elements in the periodic table.

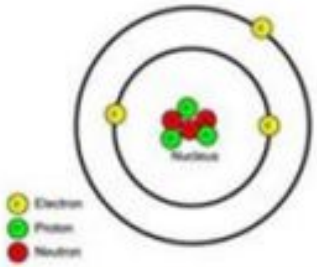
All the different elements are arranged on the periodic table. The elements are arranged in order of increasing atomic number.
On the periodic table, we can see the metal elements and non metal elements.



The section in the middle of the periodic table is known as the transition metals.

Structure of the Atom

- An atom is made up of three subatomic particles: protons, electrons and neutrons.
- Protons and neutrons are found in the nucleus of the atom (in the centre).
- Electrons are found orbiting the nucleus in shells (also known as *energy levels*).
- Protons have a positive charge.
- Electrons have a negative charge.
- Neutrons have a no charge.



Key Terms	Definitions
Atom	Contains protons neutrons and electrons, and makes up all elements
Proton	A sub atomic particle with a positive charge
Electron	A sub atomic particle with a negative charge
Neutron	A sub atomic particle with a neutral charge
Atomic number	The number of protons in an atom

Mendeleev

- Throughout history scientists have tried to classify substances and many scientists attempted to construct a periodic table.
- Before the knowledge of the atom, scientists arranged the periodic table by atomic weight and this meant the groups were not always correct.
- In 1869 Dimitri Mendeleev a Russian scientist, published his periodic table, it was slightly different to those that had been before. He still arranged elements by atomic weight but he also left gaps for where he predicted elements would be.
- He very accurately predicted the properties of elements that were not discovered until many years later e.g. Gallium.

Atomic Number and Mass Number

This is the total of protons + neutrons — Mass Number — 23

Na

This is the number of protons — Atomic Number — 11

Therefore sodium has 11 protons, 11 electrons and 23-11=12 neutrons.

The Modern Periodic Table

The modern periodic table arranges the atoms by increasing atomic number. There are currently 118 elements with some being discovered as recently as 2016!

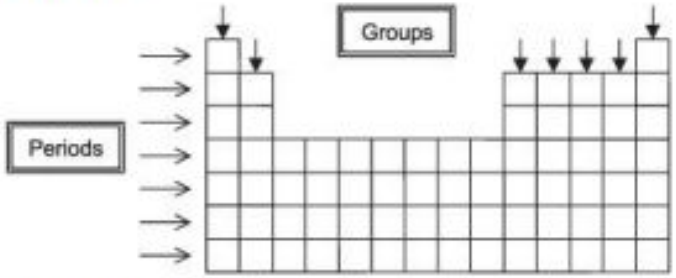
Year 8 Chemistry Knowledge Organiser
Topic 3: Periodic Table

KPI 2: Recognise the main features of the periodic table.

Key Terms	Definitions
Group	The vertical groups of elements in the periodic table
Period	The horizontal groups of elements in the periodic table

Groups and Periods

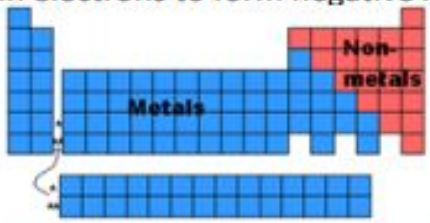
Elements are arranged on the periodic table in groups and periods. Horizontal rows are called periods and vertical columns are called groups.



Groups are labelled 1-7 from left to right, with last group being called either group 8 or 0. Elements in the same group have similar properties, because of this we can make predictions about trends. See the table below:

Metals and Non-Metals

- Metals are found on the left hand side of the periodic table, the majority of elements are metals.
- When metals react, they lose electrons to form positive ions.
- Non metals gain electrons to form negative ions.



- Properties of metals are, high density, high melting point (except mercury) and good conductors of heat and electricity.
- Only three metals are magnetic (iron, cobalt and nickel).
- Metals react with oxygen to make metal oxides e.g.

Magnesium+ Oxygen → Magnesium Oxide

	Physical properties	Chemical Properties	Equation	Trends/Explanation
Group 1 (Alkali metals)	Soft, low density	React vigorously with water releasing hydrogen	Sodium + Water→ Sodium Hydroxide + Hydrogen	More reactive as you go down, electron further from the nucleus easier to lose
Group 7 (Halogens)	Low melting point, exist as pair (Cl_2)	React with group 1 metals to form compounds. Can carry out displacement reactions	Sodium + Chlorine → Sodium Chloride Sodium Bromide + Chlorine → Sodium Chloride + Bromine	Higher melting point as you go down the group (higher molecular mass). Less reactive as you go down the group.
Group 0 (Noble Gases)	Low melting point/boiling point Eight electrons in outer shell (except helium)	Unreactive	N/A	Higher melting point and boiling point as you go down the group (due to increase ion density)

Year 8 Chemistry Knowledge Organiser
Topic 3: Periodic Table

KPI 3: Use word equations to explain chemical reactivity in groups 1 and 7.

Key Terms	Definitions
Aqueous	Dissolved in water
Reactive	When an element is more reactive this means it is going to replace the less reactive element in a reaction.

We use both word and symbol equations to summarise reactions, when doing this the more reactive element will take the place of the less reactive element. For example,

Chlorine + Potassium Bromide → Bromine + Potassium Chloride

In this case chlorine is more reactive than bromine, and therefore takes its place in the reaction.

When looking at reactions we also need to include state symbols to explain what is happening to the elements involved in the reaction.

(s) – shows that the element or compound is a solid
(l) – shows that the element or compound is a liquid
(g)- shows that the element or compound is a gas
(aq)- shows that the element or compound is aqueous. This means dissolved in water.

A example of how we show the state symbols is,

Sodium(s) + Water(l) → Sodium Hydroxide(aq) + Hydrogen(g)

Year 8 Chemistry Knowledge Organiser
Topic 5: Separation

KPI 1: Describe the difference between pure and impure substances

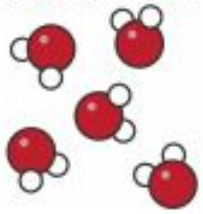
Pure Substances

If you could see the particles in pure water, you would only see water particles. There would be no other particles. Pure substances can be elements or compounds. Examples of pure substances include gold, oxygen and pure water.

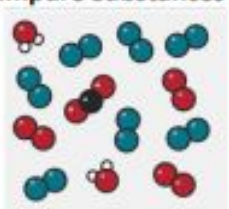
Impure Substances

Impure materials may be mixtures of elements, mixtures of compounds, or mixtures of elements and compounds. For example, even the most pure water will contain dissolved gases from the air. Impurities in a substance will affect its properties. For example, they may change its boiling point.

Pure Substances

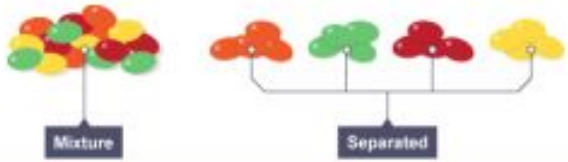


Impure Substances



Mixtures

A mixture contains different substances that are not chemically joined to each other. For example, a packet of sweets may contain a mixture of different coloured sweets. The sweets are not joined to each other, so they can be picked out and put into separate piles.



Key Terms	Definitions
Pure	A material that is composed of only one type of particle.
Impure	A material that is composed of more than one type of particle.
Evaporation	A change of state involving a liquid changing to a gas
Distillation	A process for separating the parts of a liquid solution. The solvent is heated and the gas is collected and cooled.
Filtration	The act of pouring a mixture through a mesh, in attempts to separate the components of the mixture.
Mixture	A material made up of at least two different pure substances.
Chromatography	A technique used to separate mixtures of coloured compounds.

Elements

Elements are made up of one type of atom.
All the elements are found listed in the periodic table – there are currently 118 of them.

Compounds

Compounds are formed by chemical reactions.
Compounds contain two or more elements that are chemically joined to each other.
In order to separate the elements in a compound you would need to carry out another chemical reaction.
Examples of compounds are:

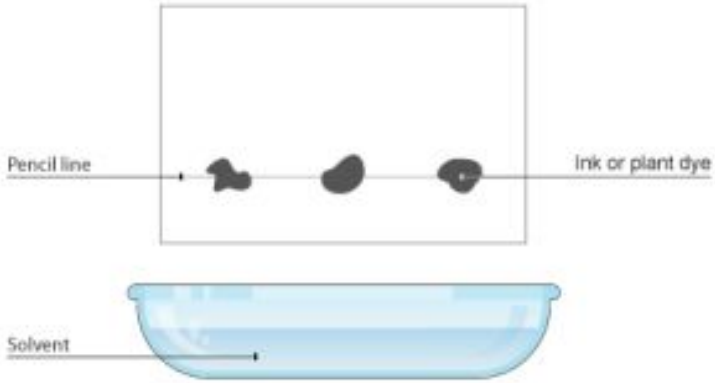
- Carbon dioxide (CO_2)
- Water (H_20)

Year 8 Chemistry Knowledge Organiser
Topic 5: Separation

KPI 2: Explain different techniques for separating mixtures

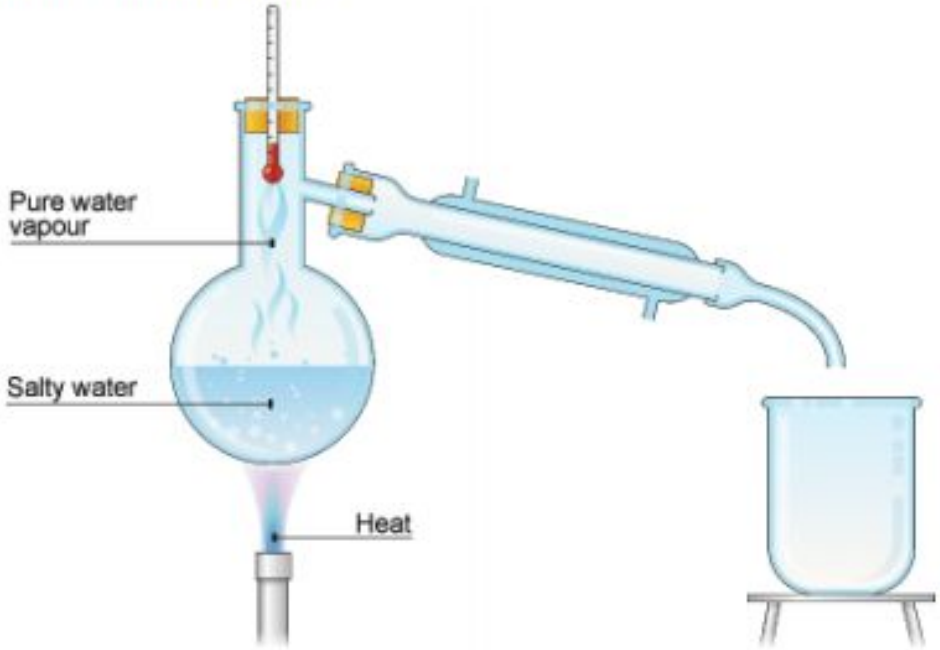
Chromatography

Simple chromatography is carried out on paper. A spot of the mixture is placed near the bottom of a piece of chromatography paper and the paper is then placed upright in a suitable solvent, e.g. water. As the solvent soaks up the paper, it carries the mixtures with it. Different components of the mixture will move at different rates. This separates the mixture out.



Distillation

This is good for separating a liquid from a solution. For example, water can be separated from salty water by simple distillation. This method works because the water evaporates from the solution, but is then cooled and condensed into a separate container. The salt does not evaporate and so it stays behind. Distillation can also be used to separate two liquids that have different boiling points.

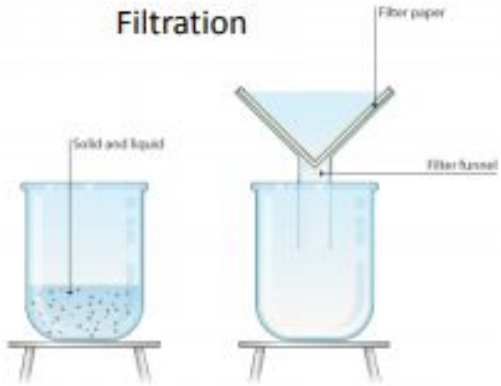


Other techniques for separating mixtures

- If you have a solution for example salt water, you can **evaporate** the water leaving pure salt.
- If you have two substances where 1 is magnetic and 1 is not, for example iron and sulphur, then a **magnet** can be used to separate the two substances.
- If you have a mixture of a solid and a liquid then the mixture can be **filtered.**

Evaporation

Filtration



Year 8 Chemistry Knowledge Organiser
Topic 5: Separation

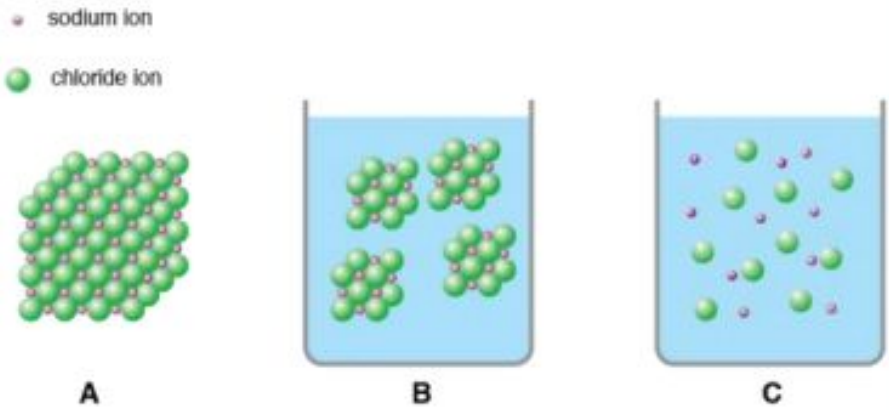
KPI 3: Explain the process of dissolving including saturation

Solutions

- Salt and sugar are **soluble** in water, this means they dissolve in water.
- Sand is **insoluble** in water, this means it does not dissolve in water
- The **solute** is the substance that dissolves
- The **solvent** is the liquid the solute dissolves in
- The solution what is produced (the solvent containing the solute)

Dissolving

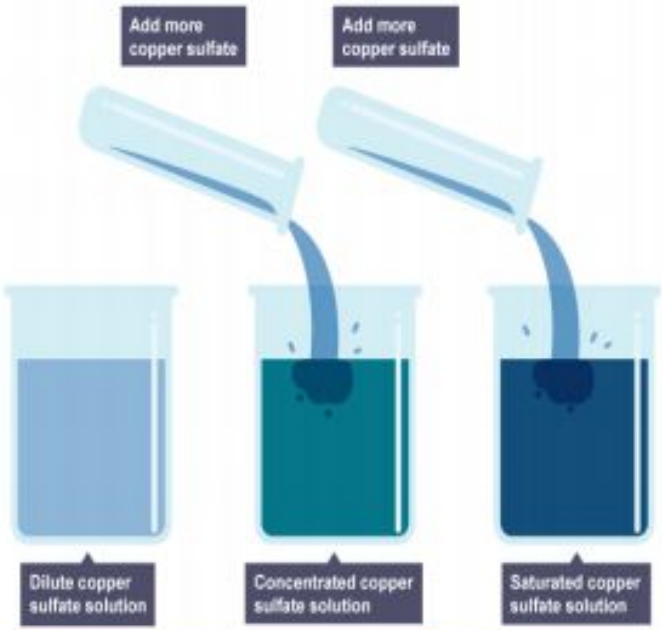
- During dissolving the **solvent particles** surround the **solute particles** and move them away so they are spread out in the **solvent**



Key Terms	Definitions
Solute	The substance that dissolves
Solvent	The liquid that the solute dissolves in
Solution	The solute dissolved in the solvent
Solubility	How easy it is for a given substance to dissolve
Saturated solution	When no more solute can be dissolved into a solution it is said to be saturated

Saturated solutions

- When a solvent is heated it will dissolve **more solute**
- When no more solute can be dissolved in the solvent the solution is saturated
- **Mass is always conserved** so for example if 5 grams of solute are dissolved in 100 grams of solvent, the mass of the solution will be 100+5= 105 grams.

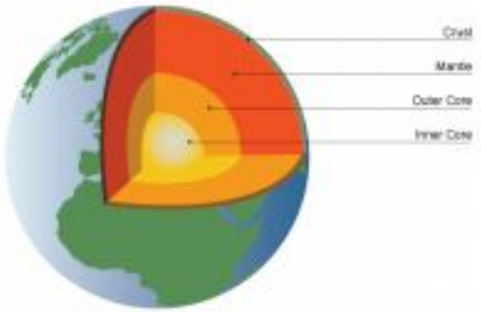


Year 8 Chemistry Knowledge Organiser
Topic 7: Metals and the Earth

KPI1: Explain the resources obtained from the Earth and the need for recycling as the Earth is a source of limited resources.

The structure of the Earth

The Earth is almost a sphere and it is split into 4 main layers:



The lithosphere is the relatively cold outer part of the Earth's structure and it is broken up into large pieces called tectonic plates. These plates move slowly over the mantle.

Volcanoes occur when molten rock pushes up through weaknesses in the crust. The molten rock cools and solidifies to form igneous rocks, such as basalt, gabbro, rhyolite and granite.

Recycling

The resources on the Earth are limited, this means they may not last forever. It is important that the things we do now do not make things difficult or impossible for future generations.

Recycling is an important way to help us achieve sustainable development. We can recycle many resources, including:

- glass
- metal
- paper

Key Terms	Definitions
Crust	Outermost layer of the Earth, relatively thin and rocky
Mantle	Layer below the crust, has the properties of a solid but can flow very slowly
Outer core	Layer below the mantle, made from liquid nickel and iron
Inner core	Centremost layer of the Earth, made from solid nickel and iron
Lithosphere	Consists of the crust and the outer part of the mantle
Recycling	Converting a waste material into something that can be reused
Ore	Naturally occurring rock from which a useful material can be extracted

Recycling of Aluminium

Aluminium extraction is expensive because the process needs a lot of electrical energy. Therefore aluminium is extensively recycled because less energy is needed to produce recycled aluminium than to extract aluminium from its ore.

Recycling preserves limited resources and requires less energy, so it causes less damage to the environment. In addition, the multiple uses of aluminium mean that soon the demand for the recycled aluminium will outweigh the need to extract it and therefore less energy is lost.

Year 8 Chemistry Knowledge Organiser
Topic 7: Metals and the Earth

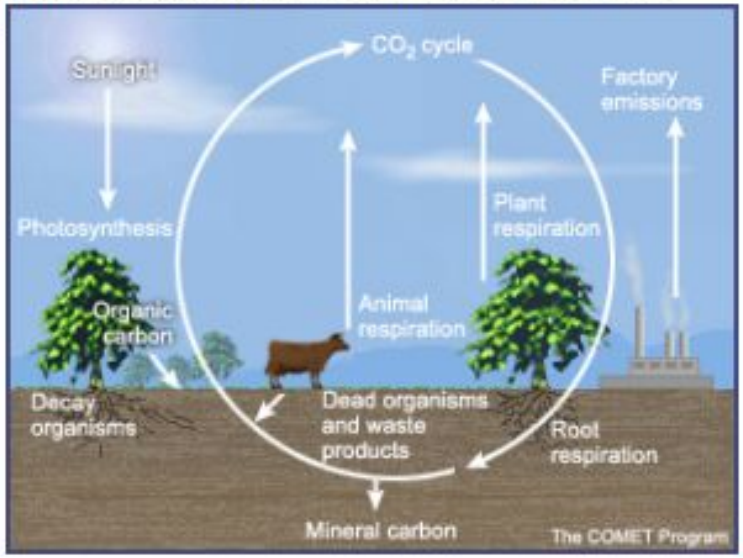
KPI2: Explain the composition of the atmosphere and the possible consequences of anthropogenic climate change.

The Carbon Cycle

All cells - whether animal, plant or bacteria - contain carbon, because they all contain proteins, fats and carbohydrates.

Carbon is passed from the atmosphere, as carbon dioxide, to living things, passed from one organism to the next in complex molecules, and returned to the atmosphere as carbon dioxide again. This is known as the carbon cycle.

- **Step 1 : Removing carbon dioxide from the atmosphere**
  Green plants remove carbon dioxide from the atmosphere by *photosynthesis*. The carbon becomes part of complex molecules such as proteins, fats and carbohydrates in the plants.
- **Step 2: Returning carbon dioxide to the atmosphere**
  Organisms return carbon dioxide to the atmosphere by *respiration*. It is not just animals that respire. Plants and microorganisms do, too.
- **Step 3: Passing carbon from one organism to the next**
  When an animal eats a plant, carbon from the plant becomes part of the fats and proteins in the animal. Microorganisms and some animals feed on waste material from animals, and the remains of dead animals and plants. The carbon then becomes part of these microorganisms and detritus feeders.



Key Terms	Definitions
Carbon cycle	A series of processes that moves carbon through organisms and the atmosphere
Photosynthesis	A chemical process that uses energy to produce glucose
Respiration	A chemical process that releases energy
Global warming	The gradual increase in global temperatures

Global Warming

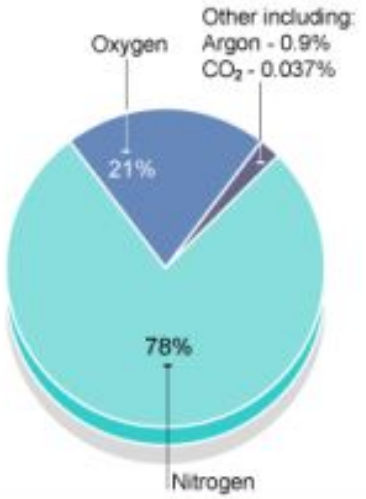
The extra carbon dioxide increases the greenhouse effect. More heat is trapped by the atmosphere, causing the planet to become warmer than it would be naturally. The increase in global temperature this causes is called global warming.

Global warming is beginning to cause big changes in the environment. These include:

- ice melting faster
- the oceans warming up
- changes in where different species of plants and animals can live

Atmospheric composition

The Earth's atmosphere has remained much the same for the past 200 million years. The pie chart shows the proportions of the main gases in the atmosphere.



Year 8 Chemistry Knowledge Organiser
Topic 7: Metals and the Earth

KPI3: Explain how the reactivity of a metal affects the way it is extracted.

Reactions of Metals

Acids react with most metals and a salt and hydrogen gas are produced. This is the general word equation for the reaction:

metal + acid → salt + hydrogen

The salt produced depends upon the metal and the acid. Here are two examples:

zinc + sulphuric acid → zinc sulphate + hydrogen
magnesium + hydrochloric acid → magnesium chloride + hydrogen

Displacement reactions involve a metal and a compound of a different metal. In a displacement reaction a more reactive metal will displace a less reactive metal from its compounds. Displacement reactions are easily seen when a salt of the less reactive metal is in the solution. During the reaction:

- the more reactive metal gradually disappears as it forms a solution
- the less reactive metal coats the surface of the more reactive metal

Testing for different Gases

You need to know the following tests:

Hydrogen
A lighted wooden splint makes a popping sound in a test tube of hydrogen.

Oxygen
A glowing wooden splint relights in a test tube of oxygen.

Carbon dioxide
Bubble the test gas through limewater - calcium hydroxide solution. Carbon dioxide turns limewater cloudy white.

Ammonia
Ammonia has a characteristic sharp, choking smell. It also makes damp red litmus paper turn blue. Ammonia forms a white smoke of ammonium chloride when hydrogen chloride gas, from concentrated hydrochloric acid, is held near it.

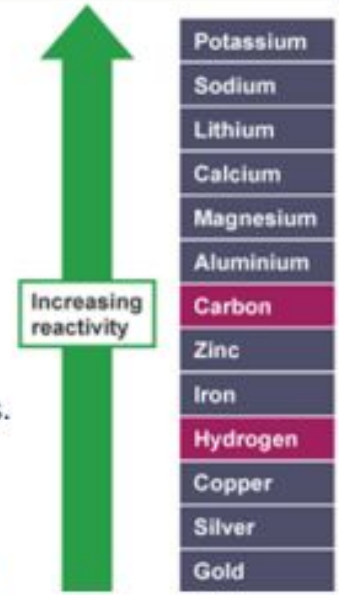
Chlorine
Chlorine has a characteristic sharp, choking smell. It also makes damp blue litmus paper turn red, and then bleaches it white. Chlorine makes damp starch-iodide paper turn blue-black.

Key Terms	Definitions
Displacement reaction	Reaction where a more reactive substance will take the place of a less reactive substance in a compound
Electrolysis	The separation of a compound using an electrical current
Reduction	Reaction where oxygen is removed from a substance. It also means a gain in electrons.

The Reactivity Series

In a reactivity series, the most reactive element is placed at the top and the least reactive element at the bottom. More reactive metals have a greater tendency to lose electrons and form positive ions.

Observations of the way that these elements react with water, acids and steam enable us to put them into this series.



Metals are very useful. A **metal ore** is a rock containing a metal, or a metal compound, in a high enough concentration to make it economic to extract the metal.

The method used to extract metals from the ore in which they are found depends on their reactivity.

For example, reactive metals such as aluminium are extracted by *electrolysis*, while a less-reactive metal such as iron may be extracted by *reduction* with carbon or carbon monoxide.

Thus the method of extraction of a metal from its ore depends on the metal's position in the reactivity series.

Year 8 Science Revision

What I Must Know- Physics			
Describe: Graphs showing the extension of a spring (Hooke's Law)			
Identify: Contact and non-contact forces.			
Explain: Drag and friction.			
Define: Equilibrium.			
Calculate: Moments on a see-saw.			
Calculate: Pressure in liquids and gases.			
Label: Force diagrams.			
State: Centre of mass.			

Year 8 Science Revision

Equations to learn in this topic:

Aerobic respiration

Glucose + Oxygen → Carbon Dioxide + Water (+ energy)
(reactants) (products)

Anaerobic respiration

Glucose → Lactic Acid (+ energy)

Anaerobic respiration (in plants and microorganisms)

Glucose → Ethanol + Carbon Dioxide (+ energy)

Photosynthesis

Carbon Dioxide + Water → Glucose + Oxygen

Combustion

Methane + Oxygen → Carbon Dioxide + Water

Moments

Moments = Force x Distance from the pivot

Pressure

Pressure = Force/Area

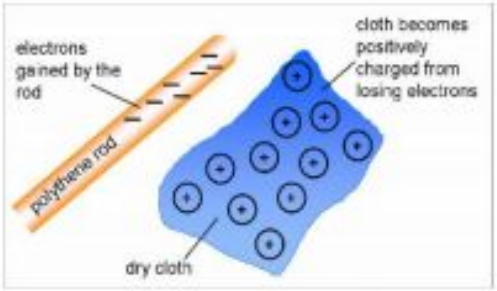
Year 8 Physics Knowledge Organiser
Topic 2: Electricity and Magnetism

KPI 1: Compare current and static electricity and explain current electricity in terms of current, voltage and resistance.

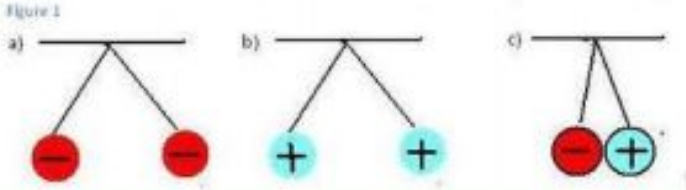
Some particles are electrically charged e.g. electrons, these can therefore carry an **electric charge**. There are two types of electricity

1. Static Electricity
2. Current Electricity

In static electricity, when **two insulators are rubbed together,** electrons are transferred, causing an electric charge to build up.



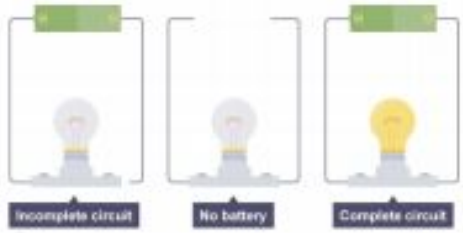
When this happens one object has a positive charge and one will have a negative charge, **like charges repel and opposite charges attract.**



Key Terms	Definitions
Potential Difference	The difference in energy between two points in an electric circuit
Current	The number of electrons flowing past a point in 1 second
Resistance	Something that resists the flow of an electric charge
Electron	A charged particle which flows in an electric circuit
Conductor	A material which allows the flow of electric charge
Insulator	A material that slows the flow of electric charge

Current Electricity

Current electricity occurs in conductors, for example metals, where the electrons can flow. Electric current is how **many electrons are flowing in one second measured in Amps (A).** For electric current to flow, we require a complete circuit.



The **potential difference** in an electric circuit is the difference in energy between two different parts of the circuit. This is measured in **volts (V)**. Sometimes people call potential difference **voltage** and it is still measured in volts.

Resistance in an electric circuit is anything which slows the flow of electric charge**, resistance is measure in Ohms (Ω).**

Circuit Symbols

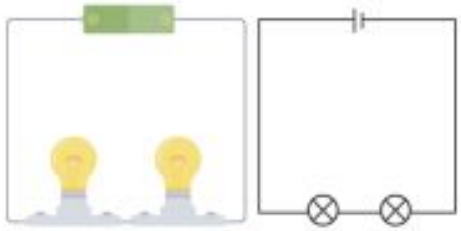
When drawing an electric circuit, we use different symbols to represent different components, the symbols you need to memorise are:

Year 8 Physics Knowledge Organiser
Topic 2: Electricity and Magnetism

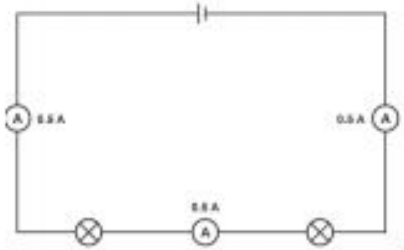
KPI 2: Compare current and voltage in series and parallel circuits.

Circuits can be connected in two ways:
1. Series Circuits
2. Parallel Circuits

In a series circuit all of the components are in the same loop, below is an example of two lamps in **a series circuit.** If either of the lamps were to break the circuit would not be complete and the light bulb would go out.



The current is the **same** at any point in a series circuit as current is always conserved in a circuit.



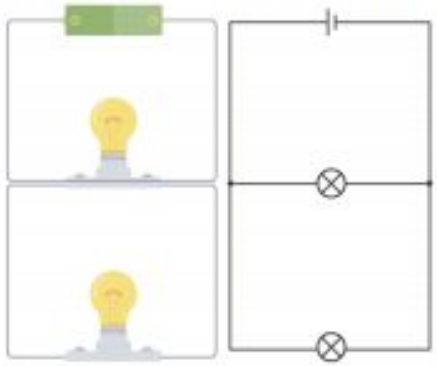
Measuring Current and Voltage

	Current	Potential difference
Unit	ampere, A	volt, V
Measuring device	Ammeter in series	Voltmeter in parallel
Circuit symbol of measuring device		

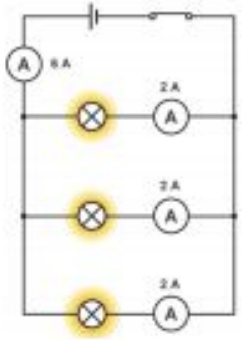
Key Terms	Definitions
Series Circuit	A circuit where all the components are in the same loop.
Parallel Circuit	A circuit where the components are in different loops in the circuit.
Ammeter	An electrical component that measures the size of electric current, it is connected in series in a circuit.
Voltmeter	An electrical component that measures the size of the potential difference, it is connected in parallel.

Parallel Circuits

In a parallel circuit components are in more than one loop. Lights in a house are connected in parallel, when one light bulb breaks the whole circuit is not broken so the other light bulb will stay alight.



In a parallel circuit the current **splits at junctions,** see the example. The current on the different branches of the circuit must add up to the total current.



Year 8 Physics Knowledge Organiser
Topic 2: Electricity and Magnetism

Ohm's Law

Current, voltage and resistance are all linked by Ohm's Law, it states that:

Resistance = Voltage÷Current or R=V÷I

KPI 3: Explain the difference between bar magnets and electromagnets.

Bar Magnets

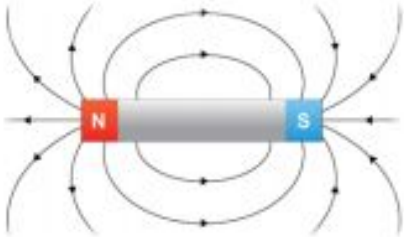
Bar magnets have two poles, a North pole (N) and a South pole (S), **opposite poles attract and like poles repel.**

Magnets create magnetic fields. These cannot be seen. They fill the space around a magnet where the magnetic forces work, where they can attract or repel magnetic materials.

Although we cannot see magnetic fields, we can detect them using iron filings. The tiny pieces of iron line up in a magnetic field. We can draw simple magnetic field line diagrams to represent this. In the diagram, note that:

- **field lines have arrows on them**
- **field lines come out of N and go into S**
- **field lines are more concentrated at the poles.**

The **magnetic field is strongest at the poles**, where the field lines are most concentrated.



The Earth has a magnetic field because the core rotates, it acts like a giant bar magnet.

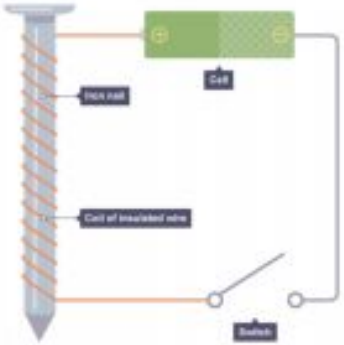
Key Terms	Definitions
Ohm's Law	A mathematical law that links current, voltage and resistance
Electromagnet	A magnet created by the flow of electricity in a wire
Magnetic Field	The area around a magnet, where the magnetic field acts

Electromagnets

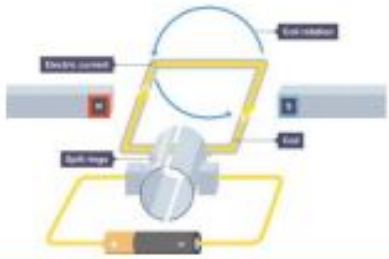
When an electric current flows through a wire, it creates a magnetic field, this can be used to make **an electromagnet,** by making the wire into a coil.

You can increase the strength of an electromagnet by doing three things:

1. Increase the number of coils
2. Increase the current
3. Add a soft iron core



The motor effect: A simple electric motor can be built using a coil of wire that is free to **rotate between two opposite** magnetic poles. When an electric current flows through the coil, the coil experiences a force and moves. This is called the motor effect.



Year 8 Physics Knowledge Organiser
Topic 6: Energy

KPI 1: describe examples of energy transfers
KPI 3: apply the law of conservation of energy to situations involving energy transfers

Energy Stores

Energy can be stored in objects, or when objects are doing something. It is a quantity measured in joules (J). Examples to know:

- Energy is stored in fuels as **chemical potential energy**
- Energy is stored in anything elastic when it is stretched, as **elastic potential energy**
- Energy is stored in any object that has been lifted up, because the object stores **gravitational potential energy**
- Energy is stored in moving objects as **kinetic energy**.
- Energy is stored in any object as **heat energy**. (Obviously, if it is cold, it doesn't store much heat energy!) This is also known as *thermal energy*.

Energy Transfer

An energy transfer is when energy changes from one store to another. VERY IMPORTANTLY, the **total amount of energy does not change**. Energy cannot be created or destroyed. All that can be changed is how it is stored. This ideas is called **the law of conservation of energy.**

Energy is transferred, so it changes store, in loads of situations. Examples to know:

- When a fuel is burned, the chemical potential energy in the fuel ends up stored as thermal energy in the surroundings;
- When an object falls off a shelf, the gravitational potential energy it stores is transferred (changed) to kinetic energy while it is falling.
- When the object hits the floor, all the gravitational potential energy it had to start with ends up stored as thermal energy in the surroundings.
- When a spring that's been stretched is released, the elastic potential energy it stored is transferred to kinetic energy then to thermal energy.

Key Terms	Definitions
Energy	Energy is a quantity that is stored in many objects and situations. Anything storing energy can do **work**.
Work	Work is done when energy changes from one store to another.
Potential energy	Potential energy is energy stored in objects that don't seem to be doing anything. See the examples.
Chemical potential energy	Energy stored in fuels (like wood, or the gas we run Bunsen burners on) is called chemical potential energy.
Elastic potential energy	Elastic objects, like springs or rubber bands, store elastic potential energy when they are stretched.
Gravitational potential energy	Any object that is not on the ground has gravitational potential energy. This is because they are lifted up in a gravitational field, and could fall down!
Kinetic energy	Movement energy. Any moving object stores kinetic energy.
Thermal energy	Also known as heat energy. All objects store some thermal energy, because the particles are moving. The higher the temperature of an object, the more thermal energy it stores.
Conservation of energy	The law that says energy cannot be created or destroyed. It can only change how it is stored.

This shows how energy changes where it is stored twice while you use a light bulb (lamp):
From chemical potential energy to electrical energy to heat (thermal) energy in the surroundings.

Year 8 Physics Knowledge Organiser
Topic 6: Energy

KPI 2: describe how thermal energy transfers from one place to another

Temperature and Heat

Temperature and heat are linked, but are not the same thing. The heat of a material depends on the **potential energy** of the particles AND the **kinetic energy** of the particles is it made from. What this does mean is that the more heat (thermal energy) a substance stores, the higher its temperature will be. You can increase the heat stored in a substance without increasing its temperature though: just get more of it. This means you have more particles, so there is more thermal energy all together in the substance.

But do not get confused, a cup of tea at 80°C has a higher temperature than a swimming pool at 30°C but because there are many more water particles in the swimming pool so the energy is higher.

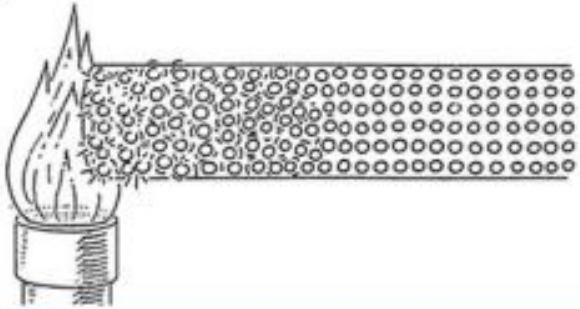
Key Terms	Definitions
Temperature	The measure of the average amount of kinetic energy of all the particles in a substance.
Heat	The energy stored in substances thanks to the energy of their particles. Also called thermal energy.
Conduction	One way that thermal energy can be transferred. Objects that are touching can transfer thermal energy, from the hotter object to the cooler one.
Radiation	Another way that thermal energy can be transferred. All objects give out **infra red radiation**. Hotter objects give out (emit) infra red radiation that is absorbed by cooler objects.
Infra red radiation	A form of light that we cannot see; infra red radiation transfers thermal energy from one object to other objects or the surroundings.
Emit	To give out.
Absorb	To take in.

Thermal energy transfer

Thermal energy will always be transferred from hotter objects to cooler objects. This includes hot objects transferring thermal energy to the surroundings (the air, nearby surfaces and so on). You can reduce the amount of thermal energy transferred by **insulating** the hot object.

Thermal energy transfer by conduction

Hot materials can transfer thermal energy to other materials that they are touching. This is called **conduction** of thermal energy. As the diagram shows, the particles that are heated increase in kinetic energy when they are heated. They bump into neighbouring particles and pass on (transfer) thermal energy. This is why a table feels warm after a hot cup of tea is lifted from it, and the reason why thermal energy can pass through the bottom of a saucepan to cook your dinner.



Thermal energy transfer by radiation

All objects give out some infra red radiation, but the hotter they are the more radiation they give out. All objects can also absorb infra red radiation: when they do, they heat up. Radiation can travel through empty space – so this is how the Sun heats up the Earth. The objects don't have to be touching, unlike in conduction, and there are no particles involved. .

Year 8 Physics Knowledge Organiser
Topic 6: Energy

KPI 4 distinguish between power and energy
KPI 5 compare values of energy and power using appropriate SI values
KPI 6 compare different fuels and energy resources

Energy and power

Energy can be stored in objects or transferred between them. The **speed**, or **rate**, at which energy is transferred is called the **power**. Divide the amount of energy transferred by the time it took to transfer it to find the power (see equation).

This means that is the same amount of energy is transferred in half the time, the power is twice as much.

Fuels as Energy Resources

Fuels store chemical potential energy. Many fuels are used a great deal by humans, including fossil fuels:

- Oil – used to make petrol/diesel/aircraft fuel especially
- Coal – burned in power stations to generate electricity
- Natural gas – used as a fuel for heating homes and for cooking.

These are all very useful fuels, but the problem is that they are **non-renewable** and when they are burned, carbon dioxide is produced. Carbon dioxide contributes to climate change because it is a greenhouse gas.

Other Energy Resources

We don't have to use fossil fuels for the uses given above. There are many other energy resources on Earth, including many **renewable resources**. E.g.

- Sunlight, which we can use to generate electricity with solar cells
- Wind, which can be used to generate electricity using wind turbines
- The tides, which can be used to generate electricity
- Waves in the sea, which can be used to generate electricity.

Key Terms	Definitions
Power	Power is the **rate** (or speed) of energy transfer. $power(W) = \frac{energy\ transferred\ (J)}{time\ (s)}$
Joule (J)	The unit for energy
Watt (W)	The unit for power
Kilowatt (kW)	1000 watts
Renewable	Renewable resources are replenished (replaced) as they are used.
Non-renewable	Non-renewable resources, like fossil fuels, are NOT replenished (replaced) as they are used.
Environmental impact	The effects of something on the environment.

Choosing energy resources

Many things should be considered to choose an energy resource:

- The **reliability** of the energy resource
- The usefulness of the energy resource
- How long the resource lasts, and if it is **renewable**
- The **environmental impact** of the energy resource.

FOR EXAMPLE:
Tidal energy is very reliable, as there are two tides per day. Tidal energy is useful for generating electricity, but you couldn't use it to run your car! Tidal energy is renewable, which is an advantage, because it cannot be used up. Using tidal energy does not produce polluting gases like carbon dioxide, but building the generators in the sea can damage the habitats of wildlife near the coast.

Year 8 Physics Knowledge Organiser
Topic 8: Motion and pressure

KPI 1: Calculate speed and interpret distance-time graphs

Speed

The speed of an object tells you how long it takes an object to cover a distance. The unit for speed is m/s (metres per second).

Speed is calculated by dividing distance by the time (see equation in the box).

If the speed of an object is increasing, then it is accelerating. If the speed is decreasing it is decelerating.

Key Terms	Definitions
Gradient	How steep the line on a graph is.
Stationary	Not moving
x axis	The horizontal axis on a graph
y axis	The vertical axis graph
Acceleration	Speed of an object is increasing
Deceleration	Speed of an object is decreasing

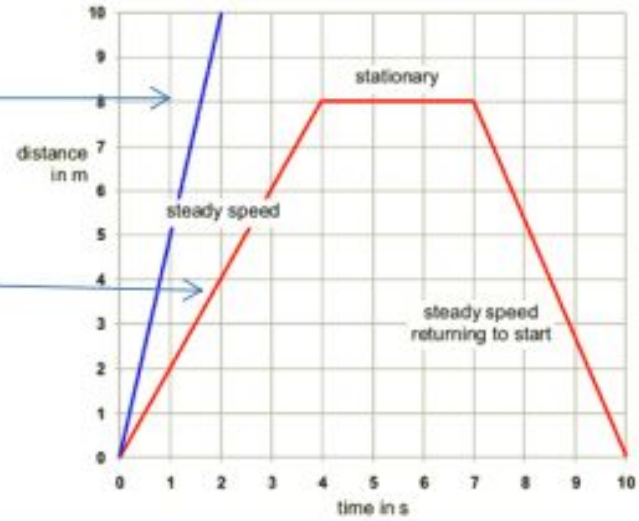
Equation	Meanings of terms in equation
• $s = \frac{d}{t}$	*S= Speed* *D= Distance* *T= Time*

Distance Time Graphs

A distance time graph has the time on the x axis and the distance on the y axis. If an object is stationary (not moving) the line will be horizontal. If the line is diagonal the object is moving at a constant speed. If the line has a larger gradient (steeper), it means it is moving faster. If the line is going back towards the x axis it is returning to its starting point.

Higher gradient = faster speed

Lower gradient = lower speed

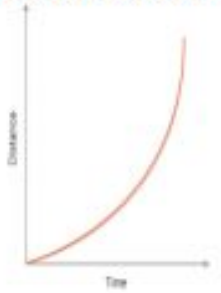


Acceleration and Deceleration

When an object is accelerating, the distance time graph will curve upwards.

When an object is slowing down an object will curve towards the horizontal.

Acceleration



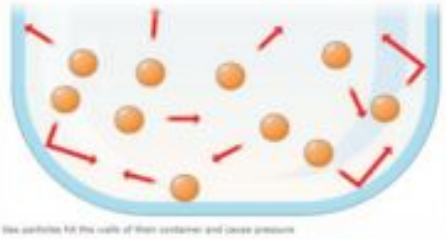
Deceleration

Year 8 Physics Knowledge Organiser
Topic 8: Motion and pressure

KPI 2: Compare pressure in liquids and gasses

Gas Pressure

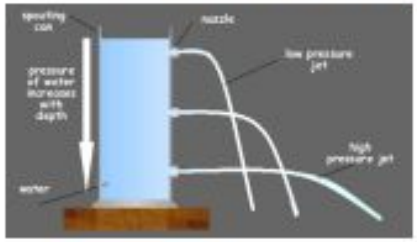
Gas pressure is caused by gas particles colliding with the walls of the container. A container also experiences pressure on the outside. Air particles on the outside collide with the outside wall. An imbalance between the pressure on the inside and outside can cause the container to change its shape.



There are 3 factors affecting gas pressure:
1. Number of particles
2. Temperature
3. Volume

Pressure in fluids

Fluids (liquids or gases) exert pressure at 90˚ to the surface. In a gas particles are constantly colliding with objects, this exerts a pressure. In a liquid like water the deeper you go the higher the pressure.



Key Terms	Definitions
Pressure	The force exerted over a given area
Fluids	A substance that can flow
Pascals	The unit for pressure which can also be written as (N/m^2)

Equation	Meanings of terms in equation
$*P = \frac{f}{a}$	*P=Pressure Pa* *f=Force N* *a= Area M^2*

Atmospheric pressure

The atmosphere exerts a pressure on you and everything around you. The higher you go the lower the atmospheric pressure becomes.

KPI 3: Calculate the pressure exerted by an object

Pressure on surfaces

Objects exert pressure on the surface that they are on. The size of the pressure depends on the force applied by the object and the surface area of the object.
Pressure is calculated by dividing force by area.
Some objects look to increase pressure for example drawing pins have a very low surface area, so exert a high pressure.
Snow shoes have a very large surface area so exert a very low pressure, stopping people sinking into the snow.

Year 8

History

What I Must Know

			
Describe the love cause of the Break with Rome			
Describe the power causes of the Break with Rome			
Describe the money causes of the Break with Rome			
Describe the faith causes of the Break with Rome			
Describe the 4 methods of the Break with Rome			
Describe the consequences of the Break with Rome in Henry VIII's lifetime			
Describe the consequences of the Break with Rome in reigns of Edward VI, Mary I, Elizabeth I, James I and Charles I			
Explain the causes of the Break with Rome			
Explain the methods of the Break with Rome			
Explain the consequences of the Break with Rome in Henry VIII's lifetime and up until 1650			
Describe the challenges Elizabeth I faced on her accession to the throne in 1558: legitimacy, gender, age, marriage, religion, economy, internal threats and threat of invasion			

Year 8 History Revision Tudors and Gunpowder Plot

What I Must Know			
Explain why and how Elizabeth I faced challenges on her accession			
Judge which of Elizabeth's challenges was most significant and why			
Describe the need for Elizabeth I to marry			
Describe the possible suitors for Elizabeth I			
Explain reasons for and against each choice of husband: Robert Devereux, Robert Dudley and Philip II of Spain			
Explain why Elizabeth I chose not to marry			
Explain why Elizabeth I's refusal to marry was so significant for England			
Describe Elizabeth I's aim in her Religious Settlement			

Year 8 History Revision Tudors and Gunpowder Plot

What I Must Know

What I Must Know			
Describe the key features of the Act of Supremacy in 1559 and Act of Uniformity in 1559			
Describe the key features of the Spanish Armada: causes, plans, battle, key leaders			
Explain why the Spanish Armada was defeated in 1558			
Judge the key reasons for the defeat of the Spanish Armada in 1558			
Describe the uses of Elizabethan propaganda			
Explain why propaganda was important to Elizabeth's rule			
Describe the key features of the Gunpowder Plot: causes, plans			
Explain why the Gunpower Plot of 1605 failed			
Analyse the usefulness of the content of a source			
Evaluate the usefulness of the source: POND – Purpose (why the source was made/intended audience, Origin: author, Nature: source type…speech, portrait), Date: when it was made, put the source in context.			

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Explaining phrases

This meant that…

This shows that…

This led to…

As a result…

If this hadn't happened...

Connectives

However…

Consequentlly…

Also...

Moreover...

Writing frames to learn in this topic:

Describe 2 key features

One key feature of …….. was…….

Explain two consequences of (PEAL)

One cause/consequence of ……. was…… . This meant that……..which led to…….. . This then……..

Therefore……

Write a narrative account analysing how…

This is a CHRONO LINK with ANALTYICAL PHRASES. This means it is a chronological retelling of an event with links explaining how one part of the event links to another part of the event whilst supporting it with detailed knowledge. Think causes – what actually happened in order and how one aspects led to another- the consequences

How useful is Sources B for an enquiry into…?

Source B is useful …. *(explain what the content shows us- then say how that would help an enquiry into and link in your own knowledge)*

Source B is useful as it is from……. This makes it useful as……. The nature of the source is…….. which is useful for an enquiry as…….

It's purpose is to……which makes it more/less useful because…….

Statement: How far do you agree with this statement?

I agree/ disagree with the statement to a limited extent / to an extent/ to a large extent. I would argue that ……..

The statement can be agreed with as…….

However, the statement can be challenged and disagreed with as……

In conclusion, I would therefore agree/disagree with statement as I would argue that…….. was the most important…… as

Measuring phrases

To an extent…

Totally different…

To a limited degree…

To a large extent…

Assess phrases

Without this… then…

In the long term…

For the short term…

If this hadn't happened…

This is more/less important…

ChronoLink Phrases

Therefore…

Due to this..

As result…

Then….

This led to…

Hence…

Combined with……

Thus..

A further consequence was..

Year 8 History Revision Tudors and Gunpowder Plot

KO Y8 – Tudors 1485-1603

Period: Tudor England 1485-1603

1	Tudor England is the period 1485-1603 which was also the 15th and 16th centuries. This is also known as Early Modern Britain

Key Events

2	1485- Battle of Bosworth Field marked the end of the Wars of the Roses between the House of York and the House of Lancaster. Henry Tudor won the battle, the House of Lancaster won the wars and the Tudor reign began
3	1534- Henry VIII began the Break with Rome passing the Act of Supremacy and the Act of Treason
4	1536-1540- The Dissolution of the Monasteries. Henry VIII destroyed the monasteries in England to access their wealth, land, reduce opposition and as they were accused of being immoral/corrupt.
5	1547-1553 Edward VI ruled and made England a Protestant nation
6	1553-1558 Mary I ruled and returned England to Roman Catholicism.
7	1555 The Pope was restored as head of the Roman Catholic Church in England
8	1558-1603 Elizabeth I ruled England, she was the last Tudor
9	1559- Act of Supremacy, Act of Uniformity and Royal Injunctions. Elizabeth sets out her Religious Settlement as also known as the Middle Way
10	1570- Elizabeth is excommunicated by Pope
11	1587- Mary Queen of Scots is executed
12	1588- The Spanish Armada is launched against Elizabeth and England.
13	1603- Elizabeth I died leaving the throne to James VI of Scotland, the Stuarts then ruled England and Scotland.

Key Concepts

14 Religious conflict	The 16th and 17th century saw religious change as a new form of Christianity developed and led to conflict between leaders and people.
15 Reformation	Reformation, also called the Protestant Reformation, this was the move of part of the church away from the authority of the Pope. Its greatest leader was Martin Luther.
16 Tudor monarchs	The emphasis in Tudor times was on authority of the monarch, the monarch had absolute power but the Church has considerable control. Once Henry VIII had taken over the Church he became Supreme Leader. People followed authority and would question the views of King/Church at risk to their own lives. Henry VIII introduced the death penalty for witchcraft in 1542.

Key Words

17	**Roman Catholic**	A form of Christianity, followers of the Roman Catholic Church.
18	**Heir**	The next in line for throne
19	**Pope**	Head of the Roman Catholic Church, ran the Papacy, seen as infallible
20	**Protestant**	A follower of the Protestant faith
21	**propaganda**	The deliberate attempt to make someone believe something usually political
22	**Act of Supremacy**	Law which gave English monarch control over the church in England, established the Church of England
23	**Cause**	The reason why something happens
24	**consequence**	The result of a cause: positive or negative

KO Y8 – Tudors 1485-1603

Key Words

25	**method**	How something happened, the process
26	**Roman Catholic Church**	This was the organisation that controlled religion in Western Europe before 1517, it was incredibly powerful as people could only access heaven through following the rules of the RCC
27	**monasteries**	A place where monks lived, prayed and worshiped
28	**Break with Rome**	This was the event that saw Henry VIII break England away from the RCC and establish his own church
29	**Counter-Reformation**	This was when the RCC and monarch began to try and get rid of Protestantism in Europe
30	**dynasty**	A powerful family
31	**treason**	A crime against king or country
32	**martyr**	A person who dies for their beliefs
33	**supreme**	Being the ultimate source of power

Key figures

34	**Henry VII**	He became king in 1485 following the Battle of Bosworth. He ended the wars of the Roses and united the rival houses of York and Lancaster by marrying Elizabeth Woodville, the daughter of Edward IV, a Yorkist. Henry tried to improve the power monarch and avoided war where possible.
35	**Henry VIII** 	Henry came to the throne following the death of his father in 1509. Henry was deeply religious but also desperate for an heir. He tried to divorce his first wife, Catherine of Aragon, for this reason and so began the English Reformation. He increased the control of the monarchy but conducted costly and expensive wars. He developed the Royal Navy, building the first naval dock and setting up the naval administration,
37	**Thomas Cromwell**	Cromwell was Henry's chief minister 1532-1540. He helped the King in breaking from Rome and establishing his own Church in England, with Henry as Supreme Head of the Church. He had a large role in the Dissolution of the Monasteries from 1536 onwards. However, he fell out of favour following the disastrous Anne of Cleaves marriage and was executed in 1540.
38	**Edward VI**	Reigned from 1547 to 1553. He was only 9 years old when he became King of England and died when He was 16 years old. Edward was a Protestant and he was the only legitimate son of Henry VIII.
39	**Lady Jane Grey**	Lady Jane Grey She was the great grand-daughter of Henry VII and named by Edward to be his successor to the throne of England. She became known as the 'nine day queen'.
40	**Mary I** 	Reigned from 1553 to 1558.Mary I was a Roman Catholic. As Henry VIII's eldest daughter she had a stronger claim to the throne of England than Lady Jane Grey. Mary imprisoned and then executed her. Mary was nicknamed 'Bloody Mary' as she was responsible for signing the death warrants of 301 Protestants who did not support her beliefs.
41	**Elizabeth I** 	Reigned from 1558to 1603. Elizabeth I was a Protestant. She never married and became known as the 'Virgin Queen'. She was the last Tudor and when she died, the throne of England passed to the Stuarts, the royal family in Scotland.

KO– Tudors 1485-1603

Key People

42	**Mary Queen of Scots**	Mary Queen of Scots was cousin to Elizabeth I. She was a Roman Catholic. It was feared that she was plotting to take the throne of England. Elizabeth had her arrested, imprisoned for 19 years before executing her in 1588.
43	**Philip II of Spain**	He was King of Spain and originally married to Mary I. After her death he proposed marriage to Elizabeth I, but she refused! He wanted to wipe out Protestantism in Europe. He sent the Spanish Armada in 1588 to try and conquer England.

More detailed events.. Cause-Event-Consequence

44	**Break with Rome**	**Causes** (4) **Love**: Anne Boleyn but married to Catherine of **Aragon** **Money**: need to French Wars, low Royal income- get from Church taxes (St Peter's Pence, tithes), land, monastic buildings and land **Religion**: RCC corrupt and superstitious, Henry VIII run it more effectively **Power**: Supreme Leader of Church and State, male heir= secure dynasty/reduce threat of invasion, gain Protestant support, guided by Cromwell and Cranmer **Methods (4)** 1. Parliament used to pass laws, 2. Act of Supremacy 1534 (new Ch of E, Henry VIII Supreme Leader, service and Bible out into English, 3. Treasons Act, executed those who denied Act of Supremacy 4. Dissolution of the Monasteries 1536-1540

44	**Break with Rome**	**Love:** behead AB, married Jane Seymour (dies following child birth), Anne of Cleves: divorce, Kathryn Howard: behead/affairs, Katherine Parr: outlives him **Money:** money wasted on wars, England almost bankrupt in 1547 **Religion:** England is divided over religion, Edward VI makes it Protestant, Mary I returns it to Roman Catholic and burns 301 Protestant, Elizabeth tries to a Middle Way, Gunpowder Plot, **Power:** Monarch not seen as supreme leader, English monarch are not undisputed rulers but face rebellions and threats: Gunpowder Plot, Parliament grow increasingly strong, English Civil War 1642-1649 which leads to end of the monarchy
45	**Elizabeth I's problems**	Legitimacy- parents marriage not recognised by RC, therefore she had no right to rule Financial: £300, 000 in debt Gender and age: young, female (reputation of Mary I) Religion: England divided over religion, needs a compromise (Act of Supremacy 1559 and Uniformity 1559) Marriage and heir: needs ally, support, last Tudor and needs an heir (or throne to Stuarts, threat o f civil war), no suitable husband= not marry Mary Queen of Scots: seen as legitimate heir, ally with France, later Spain, support of English RC (rebellions)
46	**Elizabeth I's propaganda**	Use of portraits to control image and cover what he looked like, could not travel as too dangerous, needed to look strong, wealthy and powerful as she represented England.

KO– Tudors 1485-1603 and Gunpowder Plot 1605

More detailed events.. Cause-Event-Consequence

47	**Spanish Armada 1588**	**Causes**: religion, Philip II wanted to make England RC, wealth, New World, Francis Drake and theft from Spain, Genoese Loan, Elizabeth helping Dutch Protestant rebels, marriage refusal, use of England as a port **Plan**: **Spanish** Led by Medina Sedonia 130 Spanish ships sail in a crescent formation with 8000 sailors and 18,000 soldiers to Flanders, collect 30, 000 soldiers and then invade England, remove Elizabeth and conquer it. **English** had 80 ships led by Drake and Howard, beacons lit to warn of approaching Armada, aim to cut of ports to Spanish and break formation before soldiers could board in Flanders **Why was it defeated?** **Poor Spanish planning and mistakes**: lack of gunners, no plan B, inexperience of Medina Sedonia, ships too slow/big, not enough sailors, food rots and water stale, no port to harbour in Flanders, did not attack English when stuck in port, communication failed so no soldiers in Flanders to collect, **English leadership**: Drake and Howard experienced, loyalty from their men, Elizabeth I gave them freedom to adapt and all 3 inspired their men **English ships:** agile, smaller **English tactics:** kept distance from Spanish canons and grappling hooks, Line-A-Stern, **FIRESHIPS**: 8 ships set alight and sent towards Spanish, they cut anchors and broke formation which meant the English could go in and attack them! **Consequences**: English win, Spanish caught in storms and destroyed. World super power lost= beginning of Spain's decline
48	**Gunpowder Plot 1605**	**Who?** A group of Catholics led by Guy Fawkes and including Robert Catesby, Thomas Winter, Thomas Percy and John Wright. **WHY?** Some Catholics felt the King was treating Catholics unfairly this was because they had to practise their religion in secret. You could be fined if you did not go to a Protestant church on Sunday. Rumours that James I planned to ban Catholicism. Some wanted rid of RC and may have framed them (Cecil- King's chief Minister as Protestant) **AIM?** Kill the king and replace him with his daughter and make her Catholic. WHAT? A plot to kill the King of England James I by blowing parliament up. Rented a cellar under the House of Lords filled with 36 barrels of gunpowder (first lot went off). Blow up Parliament in London 5th November 1605 as this was state opening day, when the Kings, Lords and Commons would all be present in the Lords chamber. **WHY FAILED?** Delayed a year, took more people into the plot, letter sent to Lord Monteagle, Cecil had a double agent, Guy Fawkes arrested, confesses (?), plotters surrounded in hiding and killed/arrested. **CONSEQUENCES**: Guy Fawkes killed for treason, RC not trusted, not allowed to work for government, Bonfire Night set up to remember it. **BUT**… framed? Confessions re-written, no tunnel, no witnesses, all who could say Cecil set them up killed….

KO – Tudors 1485-1603 and Gunpowder Plot 1605 Practice questions

Describe questions	Describe two key features of the Break with Rome Describe two key features of the methods of the Break with Rome Describe two key features of the Act of Supremacy 1534 Describe two key features of Elizabeth I's marriage choices Describe two key features of the Gunpowder Plot 1605
Explain question	Explain two consequences of Break with Rome Explain two consequences of religious change in England under the Tudors 1534-1603 Explain two consequences of the Spanish Armada 1588 Explain two consequences of the Gunpowder Plot 1605
Narrative account	Write a narrative account analysing how Henry VIII made the Break with Rome 1534-1547 Write a narrative account analysing how Elizabeth dealt with problems she faced in her reign Write a narrative account analysing how religion changed under the Tudors 1534-1603 Write a narrative account analysing the Spanish Armada 1588 Write a narrative account analysing Gunpowder Plot of 1605
How far do you agree?	'Henry VIII made the Break with Rome over love.' How far do you agree with this interpretation? 'The Act of Treason 1534 was the most important method of the Break with Rome.' How far do you agree with this interpretation? 'Henry VIII achieved his aims in the Break with Rome.' How far do you agree with this interpretation? 'Mary Queen of Scots was the greatest threat that Elizabeth I faced.' How far do you agree with this interpretation? 'The Gunpowder plotters were framed.' How far do you agree with this interpretation?

Year 8

Geography

Year 8 Geography Revision

What I Must Know			
Types of plate boundary			
Case Study – Nepal 2015 (effects and responses)			
Case Study – Kobe (effects and responses)			
How to prepare and protect against earthquakes			
HDI (Human Development Index)			
Disadvantages of measures of development			
Impact of a natural hazard on a country (Haiti)			

Geography Knowledge Organiser 8.1.2: The Unstable Earth (Plate boundaries)

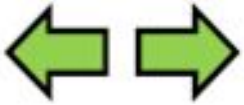
KPI Name:
To describe conservative, constructive and destructive plate boundaries.

Plate boundaries:

- The Earth's crust is broken into different plates, which sit on the Earth's mantle.
- These plates move because of convection currents.
- The plates move in different directions and meet at plate boundaries.
- As the plates move, parts of the crust are destroyed and in other areas new crust is created.

Different types of plate boundary:

- There are three different types of plate boundary: **destructive**, **constructive** and **conservative**. Which type they are depends on how the plates move at this boundary.
- Different plates boundaries have different landforms, such as volcanoes and fold mountains.

Boundary	Movement	Diagram	Example	Landforms
Destructive	The plates either collide or the oceanic plate subducts under the continential plate.		The Nazca plate being forced under the South American plate.	Volcanoes Fold mountains Earthquakes
Constructive	The plates move apart.		The African plate and the South American plate.	Volcanoes
Conservative	The plates move alongside each other.		The Pacific plate and the North American plate.	Earthquakes

Key words and terms:

Plate boundaries:
Where two or more tectonic plates meet.

Conservative:
A plate boundary where two plates slide past one another.

Constructive:
A plate boundary where two plates are moving apart.

Destructive:
A plate boundary where two plates are colliding.

Magma:
Molten rock from the mantle before it reaches the surface of the earth.

Lava:
Molten rock released from the earth's core by a volcano.

Fold Mountains:
Mountains formed at collision zones, where two continental plates move towards each other.

Volcano:
A vent in the earth's crust from which lava, ash and gas is released.

Earthquake:
A sudden shaking of the ground, caused by movement in the earth's crust.

Geography Knowledge Organiser 8.2.1: The Unstable Earth (Tectonic plate boundaries and earthquakes)

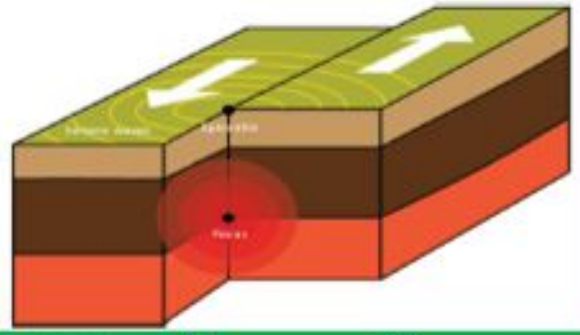
KPI Name:
I understand the three kinds of tectonic movement and how they link to earthquake activity, using key terminology.

Plate boundaries and earthquakes:

- The Earth's crust is broken into different plates, which sit on the Earth's mantle.
- The plates move in different directions and meet at **plate boundaries**. These three boundaries are called **destructive, constructive or conservative** plate boundaries (see knowledge organsier 8.1.2 for further detail).
- Earthquakes can happen **at any plate boundary**.
- Plates do not always move smoothly alongside, under or beside each other. They sometimes get stuck. When this happens pressure builds up and, when this pressure is released, an earthquake occurs.
- Every earthquakes has an **epicentre** and a **focus**.
- The focus is the point in the earth's crust where the pressure between the two plates is released. It is underground.
- The epicentre is the point on the **surface** of the crust, above the focus.

Earthquakes on *conservative* plate boundaries:

- Earthquakes can occur at all plate boundaries. However, conservative plate boundaries clearly show how earthquakes happen.
- The **San Andreas Fault** is part of the plate boundary between the **Pacific plate** and the **North American plate**.
- The Pacific plate moves slightly faster than the North American plate. This means that, even though the plates are moving in the same direction, they can get stuck, causing a build up of **pressure**.
- This build up and release of pressure caused two major earthquakes during the last century, in 1906 and in 1989.
- However, this area experiences constant small earthquakes, with Los Angeles experiencing 10 earthquakes per day on average!
- Because of this movement, Los Angeles should be in line with San Francisco in roughly 20 million years.



Key words and terms:

Earthquake:
The shaking or vibration of the earth's crust due to pressure at a plate boundary.

Mantle:
The semi-molten layer below the earth's crust.

Crust:
The thin, rocky outer layer of the earth. It is broken into many different plates.

Plate boundary:
The point where two tectonic plates meet.

Destructive plate boundary:
Where two plates meet and they are moving towards each other.

Constructive plate boundary:
Where two plates meet and they are moving away from each other.

Conservative plate boundary:
Where two plates meet and they are moving alongside each other (either in the same or opposite directions).

Y8 Geography Knowledge Organiser –Global development and the development gap

What is development?

1. **Development** is an improvement in living standards through better use of resources.
2. **Economic development** is progress in economic growth through levels of industrialisation and use of technology.
3. **Social development** is an improvement in people's standard of living. For example, clean water and electricity.
4. **Environmental development** is advances in the management and protection of the environment.

Measuring Development - These factors are used to compare and understand a country's level of development.

Economic indicators

1. **Employment type** - The proportion of the population working in primary, secondary, tertiary and quaternary industries.
2. **Gross Domestic Product per capita** - This is the total value of goods and services produced in a country per person, per year.
3. **Gross National Income per capita** - An average of gross national income per person, per year in US dollars.

Social indicators

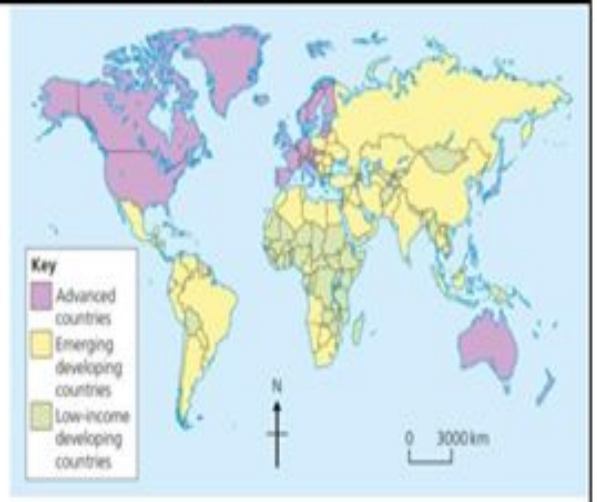
1. **Infant mortality** - The number of children who die before reaching 1 per 1000 babies born.
2. **Literacy rate** - The percentage of population over the age of 15 who can read and write.
3. **Life expectancy** - The average lifespan of someone born in that country.

Mixed indicators

1. **Human Development Index (HDI)** - A number that uses life expectancy, education level and income per person.

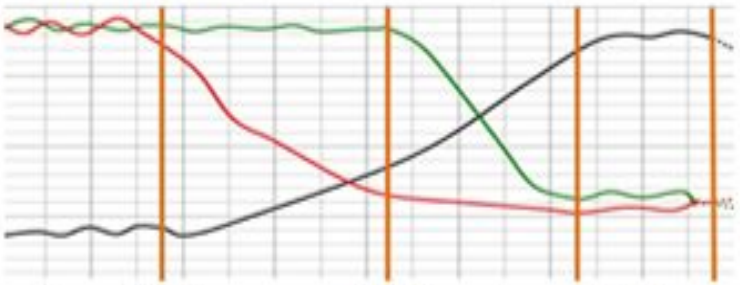
Variations in the level of development

1. **LIC** - Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.
2. **NEE** - These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports lead to better wages.
3. **HIC** - These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.



The Demographic Transition Model

The demographic transition model (DTM) shows population change over time. It studies how birth rate and death rate affect the total population of a country



STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
High DR High BR Steady	BR Low Declining DR Very High	Rapidly falling DR Low BR High	Low DR Low BR Zero	Slowly Falling DR Low BR Negative
e.g. Tribes	e.g. Kenya	e.g. India	e.g. UK	e.g. Japan

Human factors affecting uneven development

1. **Trade** - Countries that export more than they import have a **trade surplus**. This can improve the national economy. Having **good trade relationships**. **Trading goods** and services is more profitable than raw materials.
2. **Health** - **Lack of clean water** and poor healthcare means a large number of people suffer from **diseases**. People who are ill cannot work so there is little contribution to the economy. More money on healthcare means less spent on development.
3. **History** - **Colonialism** has helped Europe develop, but slowed down development in many other countries. Countries that went through industrialisation a while ago, have now develop further.
4. **Politics** - Aid can help some countries develop **key services** and infrastructure faster. **Aid** can improve projects such as schools, hospitals and roads. Too much **reliance on aid** might stop other trade links becoming established.
5. **Education** - Education creates a **skilled workforce** meaning more goods and services are produced. **Educated people earn more money**, meaning they also pay more taxes. This money can help develop the country in the future.
6. **Aid** - **Corruption** in local and national governments. The **stability of the government** can effect the country's ability to trade. Ability of the country to **invest into services and infrastructure**.

Causes of uneven development

Development is globally uneven with most HICs located in Europe, North America and Oceania. Most NEEs are in Asia and South America, whilst most LICs are in Africa. Remember, development can also vary within countries too.

The physical factors affecting development are:

1. **Natural resources** - **Fuel sources** such as oil. Minerals and metals for fuel. **Availability of timber**. Access to **safe water**.
2. **Natural hazards** - Risk of tectonic hazards. Benefits from **volcanic material** and **floodwater**. Frequent hazards **undermine redevelopment**.
3. **Climate** - **Reliability** of rainfall to benefit farming. **Extreme climates** limit industry and affects health. Climate can **attract tourists**.
4. **Location/ terrain** - **Landlocked countries may find trade difficulties**. **Mountainous terrain makes farming difficult**. **Scenery attracts tourists**.

Consequences of uneven development

Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and migration.

1. **Wealth** - **People in more developed countries have higher incomes than less developed countries.**
2. **Health** - **Better healthcare means that people in more developed countries live longer than those in less developed countries.**
3. **Migration** - **If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living.**

Year 8

Design and Technology

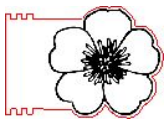
Year 8 DT Revision

What I Must Know			
Describe – use of hand tools			
Identify – ferrous, non ferrous metals and alloys			
Explain – how to produce a CAD design for cutting on the laser cutter			
Define – the terms ferrous, non ferrous and alloys			
Calculate – the total length of material used in a product			

Use the writing frames for:

- Hand tools
- Metals and their uses
- Preparing an image for the laser cutter
- Engineering drawing for the bracket

Ferrous Metals	Ferrous metals contain iron, so can rust and are magnetic. Common ferrous metals include – steel and iron
Non ferrous Metals	Non ferrous metals do not contain iron, so can not rust and are not magnetic. Common non ferrous metals include – aluminium and copper
Alloys	Alloys are combinations of two or more metals to make a better metal – common alloys include – stainless steel and brass
Thermoplastics	Thermoplastics are those plastics that go soft when they get hot, this allows them to be shaped and formed. In school we most often use acrylic with the laser cutter and HIPPS with the vacuum former.
Thermosetting plastics	Thermosetting plastics are plastics that set when they are heated or compressed under heat. We don't use thermosetting plastics in school as they are not easy to work. Epoxy resin adhesive is a common thermosetting plastic.
CAD	Computer Aided Design – the CAD packages we use most often in school is 2D Design, we use this to produce the designs that we cut on the laser cutter.
CAM	Computer Aided Manufacture – the laser cutter is the CAM machine we use the most often, we use this to cut out the designs for the blades of the spinner.



For the image above to be ready for the laser cutter, what do we need to do?
RED line – cutting, BLACK areas – etched onto the acrylic. The first stage was to copy in a black and white clipart, we then turned it transparent before contouring it in red. The lines were joined to the bracket and then the unwanted lines were deleted.

	Scribe		Pillar drill
	Engineers square		File
	Steel rule		Junior hacksaw
	Centre punch		Engineers vice
	Ball pein hammer		Marker pen

YEAR 8 DT FOOD AND NUTRITION

knead	To thoroughly mix ingredients in a dough and in the case of bread, develop the gluten structure, creating an elastic dough.
Rubbed in method	Rub fat into flour using the tips of your fingers only as this is the coolest part of the hand. The particles of flour are coated in fat to reduce the formation of gluten. This method is used for scones, pastry and a rubbed in sponge cake.
prove	Dough relaxes and yeast works, forming carbon dioxide bubbles which make the dough rise. The gluten structure forms a stretchy skin, like a balloon, to hold the bubbles of gas.

	Pastry cutter. Cut accurate shapes from pastry or scone dough. Used to create many identical products.		Electric kettle. Used to safely and quickly boil water.
	Sauce pan Used to combine and heat ingredients, often used to simmer or boil soups or sauces.		Colour coded chopping boards. Used to protect the work surface when chopping ingredients. The colour coding can help uses to prevent cross contamination.
	Baking tray. Used to cook food products, like scones, and to transport them to and from the oven.		Electric hob used to transfer heat (via metal plates) to a pan in order to cook or reheat food.
	Weighing scales used to accurately weigh larger quantities of usually dry ingredients. Weighs in increments of 1g.		Gas hob used to transfer heat (via gas flames) to a pan in order to cook or reheat food.
	Measuring jug		Mixing bowl

<u>Always remember</u> to think about detail, why do things happen the way they do? Why are you following a certain process?

Use this knowledge organiser to revise for your assessment. Try:

- practice questions;
- getting someone to quiz you;
- making flashcards to use when quizzing;
- graphic organisers
- talk for a minute on the given term/topic – no pauses, no hesitations. Slips or repetitions or micro pauses lose a 'life' – three strikes and you're out!

Year 8

Art

What I Must Know

What I Must Know			
What are the 7 formal elements in Art & Design			
What is a Still Life painting and what might you expect to see in one?			
Be able to name at least 2 artists who have painted a Still Life painting			
What is mixed media?			
How to apply gradients of tone to a drawing			
How to use guidelines to support composition			
What is the difference between Watercolour paint & Acrylic paint			
How to blend and apply tone using watercolour paint			
What is Pop Art? What would you expect to you in a Pop Art painting?			
Describe the work of Roy Lichtenstein, using colour, style and influences			
Be able to discuss Pop Art using Onomatopoeia words			
Describe the work of Nancy Standlee, using her media preference and influences			

Year 8 Art Revision

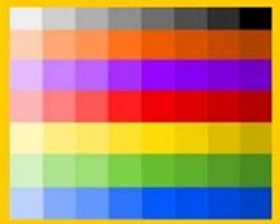
FORMAL ELEMENTS

LINE

A Line is the path left by a moving point, e.g. a pencil or a brush dipped in paint. A line can take many forms, e.g. horizontal, diagonal or curved. A Line can be used to show Contours, Movements , Feelings and Expressions.

TONE

Tone means the lightness or darkness of something. This could be a shade or how dark or light a colour appears



SHAPE & FORM

A shape is an area enclosed by a line. It could be just an outline or it could be shaded in.

Form is a three dimensional shape such as a sphere, cube or a cone.

Sculpture and 3D design are about creating forms

KEY WORDS & TERMS

Line
Tone
Shape
Form
Texture
Colour
Pattern
Shade
Light
Dark
Pressure
Natural Pattern
Manmade Pattern
Geometric Shape
Organic Shape
Actual Texture
Visual Texture
Design
3D Design
2D Design
Primary Colours
Secondary Colours
Mix
Blend

TEXTURE

Texture is the surface quality of something, the way something feels or looks like it feels. There are two types of texture: Actual Texture and Visual Texture.

Actual Texture– really exists so you can feel it or touch it

Visual Texture– created using different marks to represent actual texture.

Actual Texture Visual Texture

COLOUR

There are 3 Primary Colours: RED, YELLOW and BLUE.

By mixing any two Primary Colours together we get a Secondary Colour: ORANGE, GREEN and PURPLE

PATTERN

A pattern is a design that is created by repeating lines, shapes, tones or colours.

Patterns can be manmade, like a design on fabric, or natural, such as the markings on animal fur.

Analysing Art

Content – looking at the subject of the work

What is it? What exactly can you see? What is happening? What does the work represent?
What does the artist call the work?
Does the title change the way we see the work?
What is the theme of the work?

landscape, portrait, journey, moment, memory, event, surreal, fantasy, abstract, message, energy

Form – looking at the formal elements

What colours does the artist use? Why? How is the colour organised?
What kind of shapes can you find?
What kind of lines and marks does the artist use?
What is the surface like?
What kind of textures can you see?
What kind of patterns can you see?
How big is the work?

light, delicate, layered, strong, rough, dark, peaceful, dripped, textured, scale, vivid, bright

Process – how the work has been developed and made

What materials and tools have been used?
What is the evidence and clues for how it has been made?

painted, woven, printed, drawn, cast, stitched, layered, assimilated, collage

Mood – looking at the communication of moods and feelings

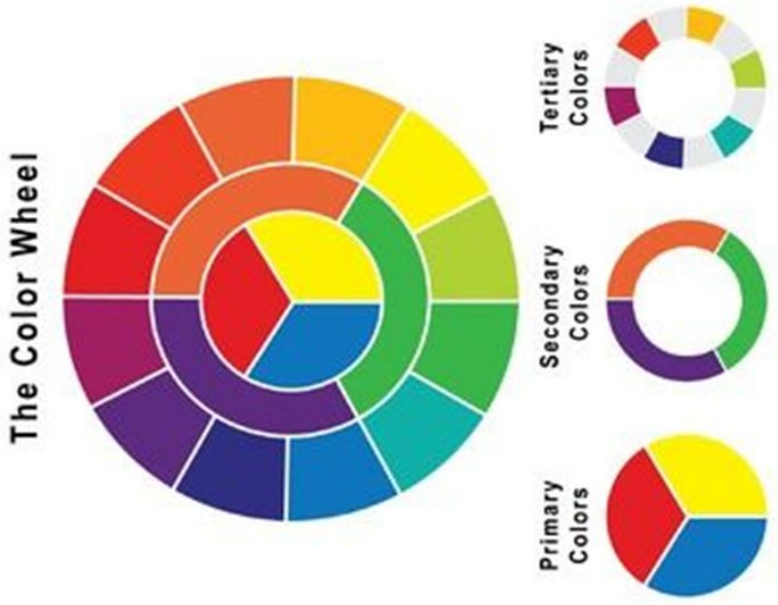
How does the work make you feel?
Why do you feel like this?
Does the colour, texture, form or theme of the work affect your mood?

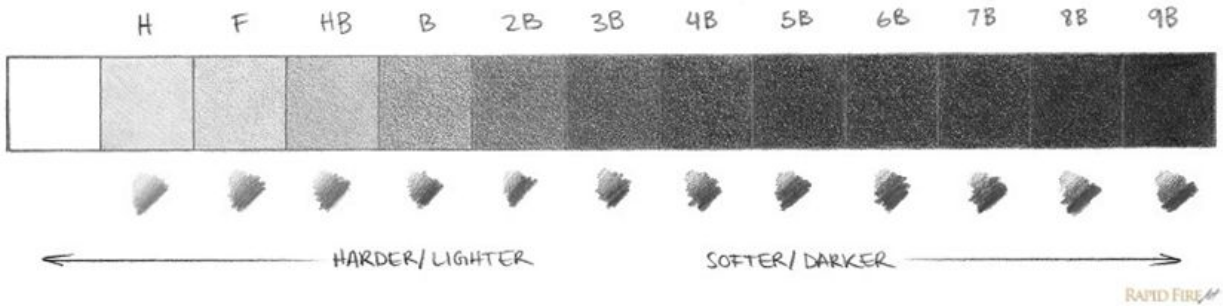
quiet, contemplative, thoughtful, hopeful, peaceful, elated, joyful, celebratory, reflective

Interpretation and Justification – looking at the meaning of the work

After analysing the context, form, process and mood:

What do you think the artist is saying? Why?
What message is the work/artist trying to communicate? Why?





Year 8

French

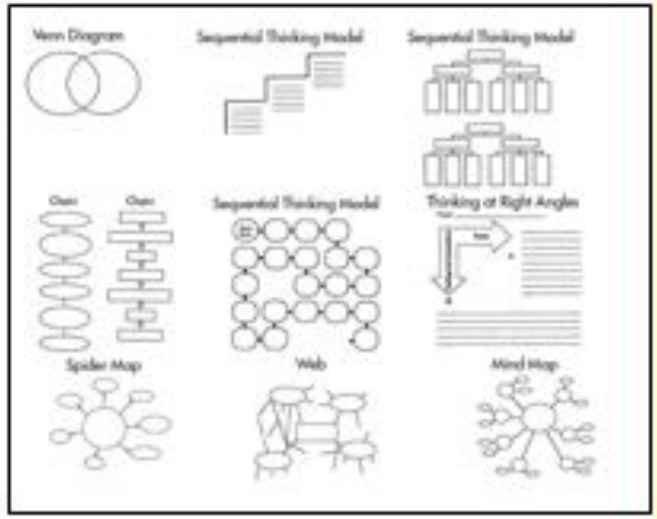
Year 8 FRENCH REVISION

What I must know or be able to …			
Describe a photo in 4 sentences (il y a : there is …)			
Write 90 words (about 15 lines) on the topic of school and free time			
School subjects			
Express and justify opinions			
Give the time in French and describe my timetable			
Describe my uniform			
Position and agree my adjectives correctly (e.g. je porte une cravate noire)			
Use verbs in the PAST accurately (e.g. Hier j'ai étudié … Yesterday I studied …) to describe what you did recently			
Use verbs in the FUTURE accurately (e.g. Ce week-end je vais aller au cinéma … This weekend I am going to go to the cinema)			
Use a range of connectives			

YEAR 8 – FRENCH – REVISION

Use this knowledge organiser to revise for your assessment. Try:

- practice questions;
- getting someone to quiz you;
- making flashcards to use when quizzing;
- graphic organisers (see right);
- the Cornell method (see right);
- talk for a minute on the given term/topic – no pauses, no hesitations. Slips or repetitions or micro pauses lose a 'life' – three strikes and you're out!



Key questions:

1- Qu'est-ce-que tu as dans ton sac? - What do you have in your bag ?
2-Tu aimes ton collège ? - Do you like your school ?
3- Qu'est –ce que tu as le lundi à neuf heures? - What do you have on a Monday at nine o'clock ?
5- Décris ton uniforme? - Describe your uniforme ?
6- Tu aimes ton uniforme ? Pourquoi ? Do you like your uniform and why ?
7- Qu'est –ce que tu as fait hier après le collège ? – What did you do yesterday after school?
8- Qu'est-ce-que tu vas faire ce week-end? – What are you going to do this weekend ?

School subjects – les matières

le français – French
le sport/ l'EPS – PE
le dessin – Art
la technologie – tech
la géographie – geography
la religion – RE
la musique – music
les maths – Maths
les sciences – sciences

Opinions

Je pense que … – I think that…
Ma matière préférée est … – My favourite subject is…
À mon avis… – In my opinion…
J'ai horreur de … I really hate …
C'est… /Ce n'est pas… It is…/It isn't
Je trouve ça …– I find it …
J'adore … I love
parce que/car/puisque/vu que – because

Ce que j'aime le plus, c'est … – What I love the most is…
Ce que j'aime le moins, c'est … – What I like the least is …
Je préfère… – I prefer…
J'aime beaucoup …– I like… a lot
J'aime un peu … – I like …a little
Je n'aime pas …– I don't like
Je déteste … – I hate …

Reasons

C'est – It is …

Ce n'est pas … It isn't …

génial – great
amusant/marrant – fun
fatigant– tiring
bête – stupid
débile – daft
barbant – boring
strict – strict
nul – rubbish
utile – useful

difficile – difficult
ennuyeux – boring
intéressant – interesting
facile – easy
sensass – sensational
casse-pied – a pain
compliqué – complicated
inutile – useless

Je ne sais pas si j'aime … –I don't know if I like …

Les affaires d'école – School equipment

Dans mon sac/ma trousse – In my bag/pencil-case

J'ai – I have
un cahier – an exercise book
un crayon – a pencil
une gomme – a rubber
une règle – a ruler
des crayons de couleur – colouring pencils

un livre – a book
un stylo – a pen
un bâton de colle – a glue stick
une calculatrice – a calculator
des ciseaux – scissors
des vêtements de sport – PE kit

Je n'ai pas de stylo /de cahier/ de trousse –

I don't have a pen/exercise book/pencil case

School uniform

Je porte – I wear / I'm wearing
On porte/Nous portons – We wear
un pantalon – trousers
un pull – a jumper
une cravate – a tie
une chemise – a shirt
une jupe – a skirt
une veste – a jacket
des chaussures – shoes
des chaussettes – socks
des collants – tights

Que penses-tu de ton uniforme ? – What do you think of your uniform ?

Je le/la trouve… – I find it
Je pense que … – I think that …
À mon avis … – In my opinion …
mon uniforme … my uniform
(c') est … – (it) is…
(ce) n'est pas … – (it) is not …
joli – pretty
confortable – comfortable
démodé – old-fashioned
moche/laid – ugly
Ça me démange– It's itchy
à la mode – fashionable
pratique – practical
chic – smart

Mon horloge française

Days of the week – les jours de la semaine

lundi – Monday
mardi – Tuesday
mercredi – Wednesday
jeudi – Thursday
vendredi – Friday
samedi – Saturday
dimanche – Sunday

Qu'est-ce-que tu as le lundi à neuf heures ?

What do you have on a Monday at 9.00 am?

une réunion – a meeting
la récréation – break
la pause-déjeuner – lunch break

FUTURE TENSE

ALLER _ TO GO

Je vais – I'm going
Tu vas – You're going
Il/elle va – He/She is going
On va – We are going
Nous allons – We are going
Vous allez – You are going
Ils/elles vont – They are going
Je vais – I'm going to + verb in the infinitive
Je ne vais pas – I'm not going to + verb in the infinitive

Qu'est ce que tu vas faire ce soir après le collège ?
What are you going to do tonight after school ?

Je vais.. – I'm going to ...
regarder la télé –to watch the TV
jouer au foot –to play football
aller –to go aller à la pêche –to go fishing
faire du vélo –to ride my bike
faire mes devoirs –to do my homework
faire du sport –to do sports
faire de la natation – to go for a swim
surfer sur internet – to surf the net

Opinions
Ça va être – It's going to be...
Ce sera – It will be....

Important verbs PAST tense:

J'ai joué – I played
J'ai regardé – I watched
J'ai écouté – I listened
J'ai acheté – I bought
J'ai fait – I did
Je suis allé(e)-I went
Je suis sorti(e) – I went out
C'était – it was

Important verbs FUTURE tense

Je vais jouer – I'm going to play
Je vais regarder - I'm going to watch
Je vais écouter-I'm going to listen
Je vais acheter – I'm going to buy
Je vais faire – I'm going to do
Je vais aller – I'm going to go
Je vais sortir – I'm going to go out
Ça va être – it's going to be

CHECK THE VERB ENDINGS !

Year 8

German

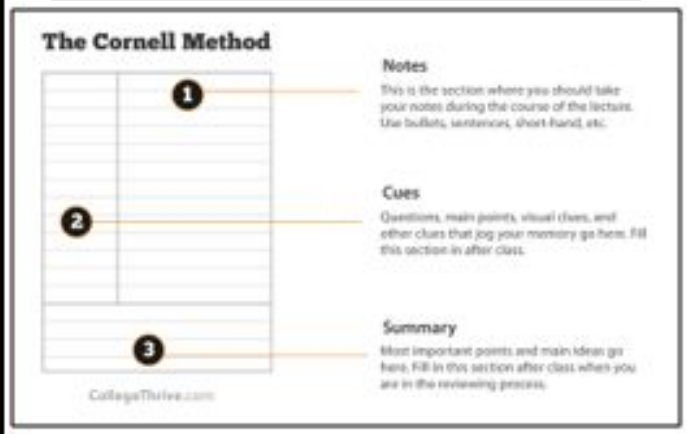
Year 8 German Revision

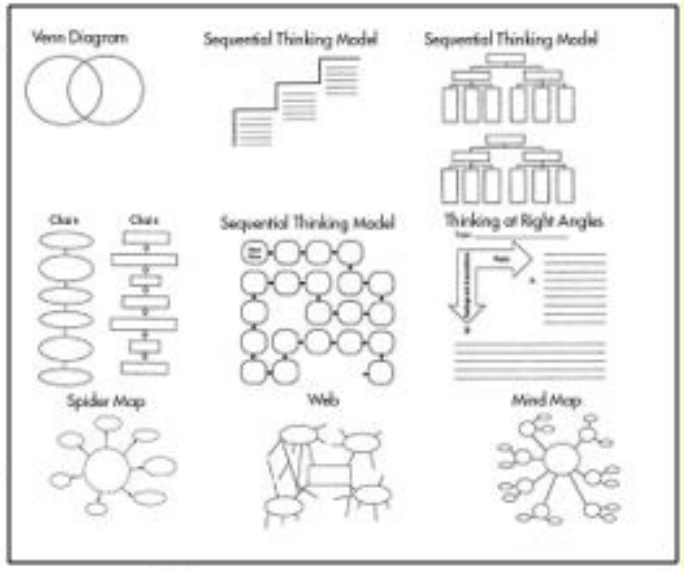
What I must know			
To say where you usually go on holiday			
To describe a typical holiday in the present tense			
To use verbs in the present tense accurately, using the ich (I) and er/sie (he/she) forms			
To use the perfect tense (past) accurately to say what you ate/drank			
To say what you WILL eat (future tense)			
To say whether you are healthy or not			
Express and justify opinions			
Vocabulary for food items and meals			
To be able to describe a photo using “there is”			

Year 8 German Revision

Use this knowledge organiser to revise for your assessment. Try:

- practice questions;
- getting someone to quiz you;
- making flashcards to use when quizzing;
- graphic organisers (see right);
- the Cornell method (see right);
- talk for a minute on the given term/topic – no pauses, no hesitations. Slips or repetitions or micro pauses lose a 'life' – three strikes and you're out!





Topic: FOOD AND DRINK

Was isst du zum Frühstück?
What do you eat for breakfast?

Müsli	cereal
Toast	toast
Eier	eggs
Bacon	bacon
Würste	sausages
Jogurt	yoghurt

Was isst du zum Mittagsessen?
What do you eat for lunch?

ein Sandwich	a sandwich
Nudeln	pasta
Pommes	chips
Pizza	pizza
Chips	crisps
Kuchen	cake
Süßigkeiten	sweets
Salat	salad
Obst	fruit

Was isst du zum Abendessen?
What do you eat for tea/dinner?

Fleisch	meat
Reis	rice
Hähnchen	chicken
Nudeln	pasta
Schweinefleisch	pork
Gemüse	vegetables
Rindfleisch	beef
Kartoffeln	potatoes
Bratkartoffeln	fried potatoes

Was möchtest du trinken?
What would you like to drink?

Wasser	water
Milch	milk
Orangensaft	orange juice
Apfelsaft	apple juice
Cola	Coke
Kaffee	coffee
Tee	tea
Limonade	lemonade
Kakao	hot chocolate

Zum Frühstück/Zum Mittagsessen/Zum Abendessen...	For breakfast/lunch/dinner...
...esse ich...	...I eat...
...esse ich gern...	...I like to eat...
...esse ich am Liebsten...	...My favourite thing to eat is...
...esse ich nicht gern ...	...I don't like to eat...
...esse ich oft...	...I often eat...



Im café – Essen bestellen.
Ordering food in a café.

Was möchten Sie?	What would you like?
Was darf es sein?	What are you having?
Ich möchte...	I would like
Ich hätte gern...	I would like
Einmal/zweimal etc.	One/two etc. of...
Danke!	Thank you!
Bitte	Please/You're welcome

Bist du gesund oder ungesund? Warum?
Are you healthy or unhealthy? Why?

Ich glaube, ich bin...
I think I am...

(sehr/ziemlich/nicht sehr)
(very/quite/not very)

gesund
healthy
ungesund
unhealthy

DON'T LEAVE IT THERE!
Look at the grammar page to see how you can extend this simple statement using **DENN/WEIL** (because).

Add intensifiers to increase complexity!

Isst du gern...?
Do you like eating...?

Ja,	Yes,
Ich esse sehr gern...	I really like to eat...
Ich esse gern...	I like to eat...
Nein,	No,
Ich esse nicht gern...	I don't like to eat...
Ich esse gar nicht gern...	I really don't like to eat..
weil das..(adjective)..**ist**	because it is...
denn das **ist**...(adjective)	because it is...
ein bisschen	**a bit**
ziemlich	**quite**
sehr	**very**
total	**completely**

Wie findest du...?
What do you think of...?

Ich finde das...	I find it...
lecker	tasty
herzhaft	hearty
süß	sweet
scharf	spicy
geschmacklos	tasteless
widerlich	disgusting
langweilig	boring

Over to you!

1) **Translate the following**: Zum Frühstück esse ich oft Eier und Würste. Ich esse auch gern Müsli, aber das ist ein bisschen fade. Ich glaube, ich bin ziemlich gesund, weil ich viel Obst und Gemüse esse. Ich esse gar nicht gern Schokolade. Ich finde das widerlich!
2) **Adapt your translation** from Q1 to create a detailed description of where you live.
3) Using the verb table and sentence structure on the grammar sheet, can you say:
a) what you ate yesterday?
b) what you will eat after school?
c) What a member of your family eats?

GRAMMATIK

Our KEY VERBS for this topic are:
ESSEN (to eat) and TRINKEN (to drink).
In your assessment, you will need to include 3 tenses Past, Present and Future). Use the time phrases to make your sentences more advanced.

PAST	PRESENT	FUTURE
ESSEN – to eat		
Ich habe ... gegessen	Ich esse	ich werde... essen
Du hast ... gegessen	Du isst	Du wirst... essen
Er/Sie hat... gegessen	Er/sie isst	Er/sie wird... essen
Wir haben... gegessen	Wir essen	Wir werden... essen
Ihr habt... gegessen	Ihr esst	Ihr werdet... essen
Sie haben... gegessen	Sie essen	Sie werden... essen
TRINKEN – to drink		
Ich habe... getrunken	Ich trinke	Ich werde... trinken
Du hast... getrunken	Du trinkst	Du wirst... trinken
Er/sie hat... getrunken	Er/sie trinkt	Er/sie wird... trinken
Wir haben... getrunken	Wir trinken	Wir werden... trinken
Ihr habt... getrunken	Ihr trinkt	Ihr werdet... trinken
Sie haben... getrunken	Sie trinken	Sie werden...trinken

TIME PHRASES
Letzte Woche
Last week
Gestern
Yesterday
Letztes Jahr
Last year
Letzten Monat
Last month

TIME PHRASES
Heute
Today
Jetzt
Now
Normalerweise
Normally
Montags
On Mondays

TIME PHRASES
Morgen
Tomorrow
Nächste Woche
Next week
Nächstes Jahr
Next year
Nach der Schule
After school

WORD ORDER.

In German, sentences often start with the subject (I, you, he/she etc.), but they can also start with a different piece of information such as a time phrase.

The verb in German is ALWAYS the second idea. It ALWAYS lives at number 2 of "Sentence Street"

If there are 2 verbs in a tense, it is only the first verb that is affected by this rule, the other will still go at the end of the sentence.

EXAMPLES
1) Ich spiele Fußball
Normalerweise spiele ich Fußball

2) Ich habe Fußball gespielt
Letztes Wochenende habe ich Fußball gespielt

3) Ich werde Fußball spielen
Nächstes Wochenende werde ich Fußball spielen

EXTENDING SENTENCES using DENN and WEIL (because).

In German, there are TWO words we can use to say "because".

"Denn" is the simplest of the two as it has no impact on word order.
I like to eat chips **because** chips are tasty
Ich esse gern Pommes, **DENN** Pommes sind lecker
As you can see, the subject (thing) and the verb (action) follow the exact same word order as we would in English.

I think I am healthy **because** I eat lots of fruit.
Ich glaube, ich bin gesund, **WEIL** ich viel Obst esse.
In this example, the verb is sent to the END of the sentence.
"weil makes the verb run a mile!"

Using **WEIL** accurately will score you higher marks for complex structures – but if in doubt, use **DENN** and follow English word order.

Year 8

ICT

Year 8 ICT Revision

What I Must Know			
Define a variable			
Define a constant			
Define a algorithm			
Identify components from an algorithm			
Label an *IF / Else IF* statement			
Label a *Forever loop*			
Label a *Repeat until loop*			
Define a animation			
Explain the purpose of a keyframe			

Year 8 ICT

What I Must Know			
Explain the purpose of layers			
Identify tools in Macromedia flash			
Explain the function of RAM			
Explain the function of ROM			
Explain the differences between RAM and ROM			
Explain the purpose of the CPU			
Explain how ICT can be used in different industries			
Explain how ICT can be utilised for people who have special needs / mobility issues			
Explain the differences between hardware and software			

Year 8 ICT Revision

What I Must Know			
Identify examples of hardware and software			
Identify tools in Macromedia Photoshop			
Explain the term “airbrushing”			
Explain possible implications of airbrushing in social media			

YEAR 8 COMPUTER SCIENCE REVISION

Use this knowledge organiser to revise for your assessment. Try:practice questions (use your white book);

- using ***Craig and Dave / The computer science tutor*** on YouTube to revisit topics;
- getting someone to quiz you;
- making flashcards to use when quizzing;
- graphic organisers (e.g Mind maps)

INPUT DEVICE	STORAGE DEVICE	OUTPUT DEVICE
Keyboard	Optical - CD / DVD	Monitor
Mouse	Magnetic	Speakers
Touch Screen	Hard Drive	Headphones
Barcode Scanner	Solid State	Printer
OMR (Lottery / Multiple choice)		
Joystick		
Microphone		
Sensors		

MEMORY

RAM – holds currently running programs instructions and data - memory is volatile it is temporary

ROM – Boots up the PC and loads the OS- memory is non-volatile it is permanent

Differences: RAM is volatile / ROM non-volatile , RAM can be written to, ROM cant not be written to and their jobs are different (see above for job info)

Virtual Memory – When RAM is full the hard disk drive can be used to work as RAM.

Cache – Stores the frequently used programs instructions and data (a very small, fast memory located in the CPU, if used speeds up the FDE cycle as its less distance to travel)

1/0 = bit	4 bits = 1 nibble	8 bits = 1 byte
1024 bytes = 1 kilobyte	1024 kilobytes = 1 megabyte	
1024 megabytes = 1 gigabyte	1024 gigabytes = 1 terabyte	

WHAT IS A VARIABLE?

A value stored in the program that can change

WHAT IS A CONSTANT

A value stored in the program that can NOT change

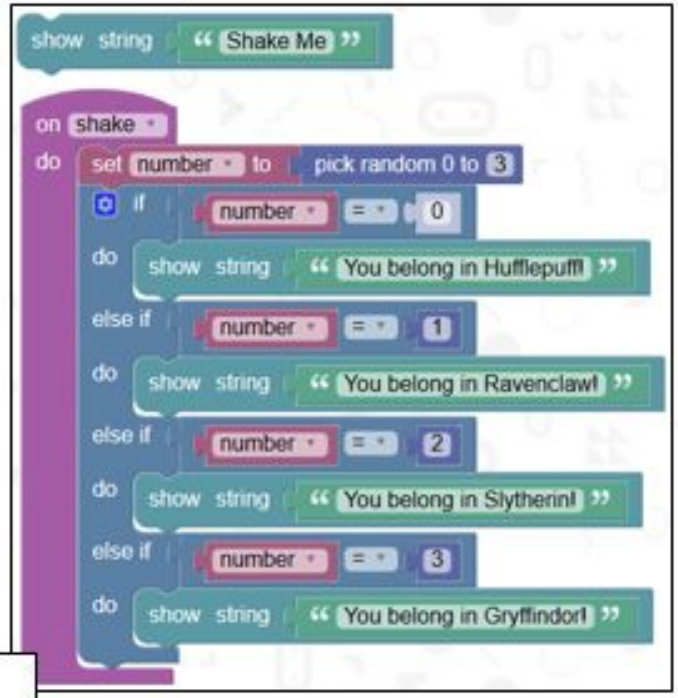
WHAT IS A NETWORK?

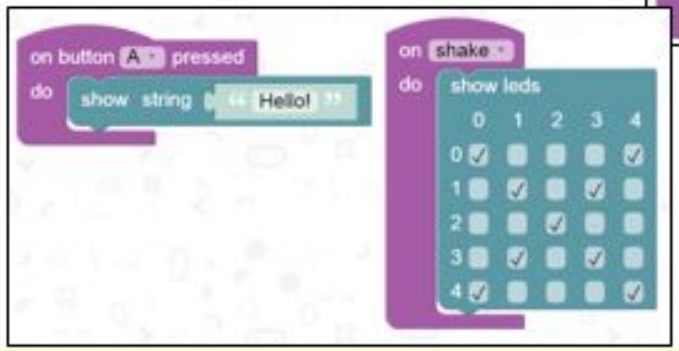
A network is one or more devices connected together to communicate

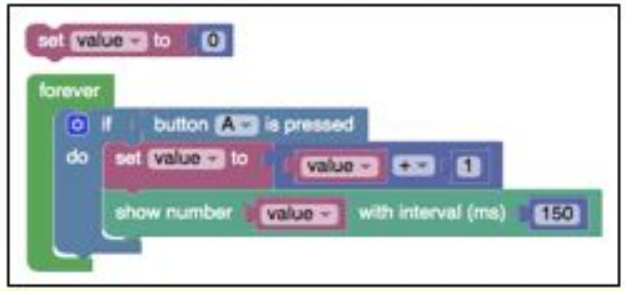
WHAT ARE THE DIFFERENCES BETWEEN HARDWARE AND SOFTWARE?

Hardware is the physical components such as monitor, keyboard, mouse, printer.
Software is the non-physical components – programs and applications

MICROBIT & PROGRAMMING







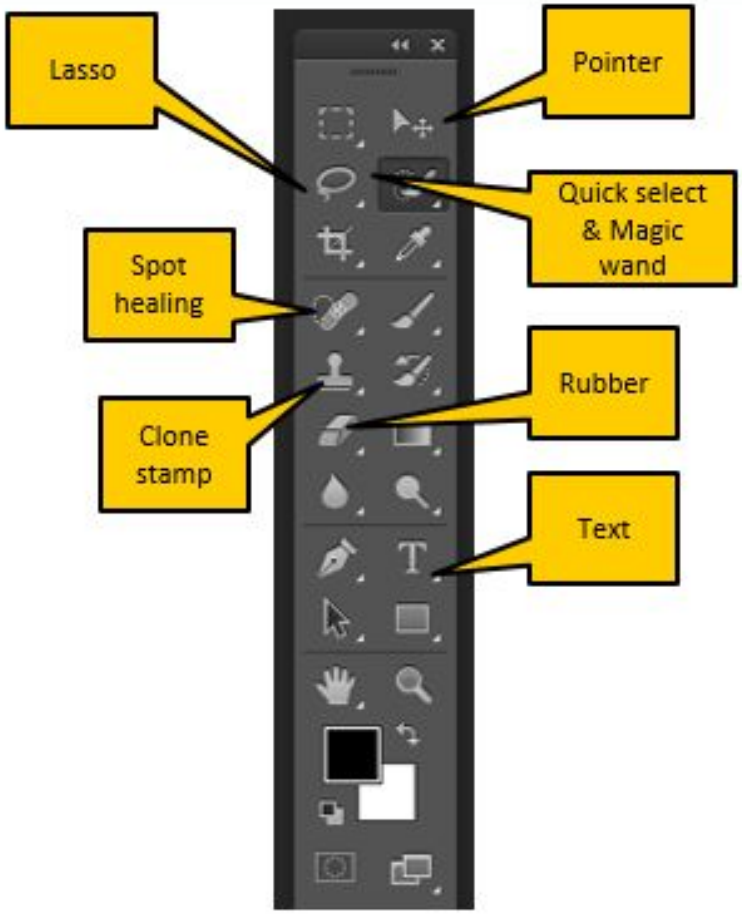
YEAR 8 COMPUTER SCIENCE REVISION

PHOTOSHOP

BASIC TERMINOLOGIES & KEY CONCEPTS

Airbrushing– when an image has been altered / improved in some way
Layers – holds each item separately so can move independently to the others. Can be locked.
Hue / Saturation – colour tones
Main tools:

Liquify	Lasso	crop
spot healing brush	clone stamp	Magic wand
Patch	quick selection	



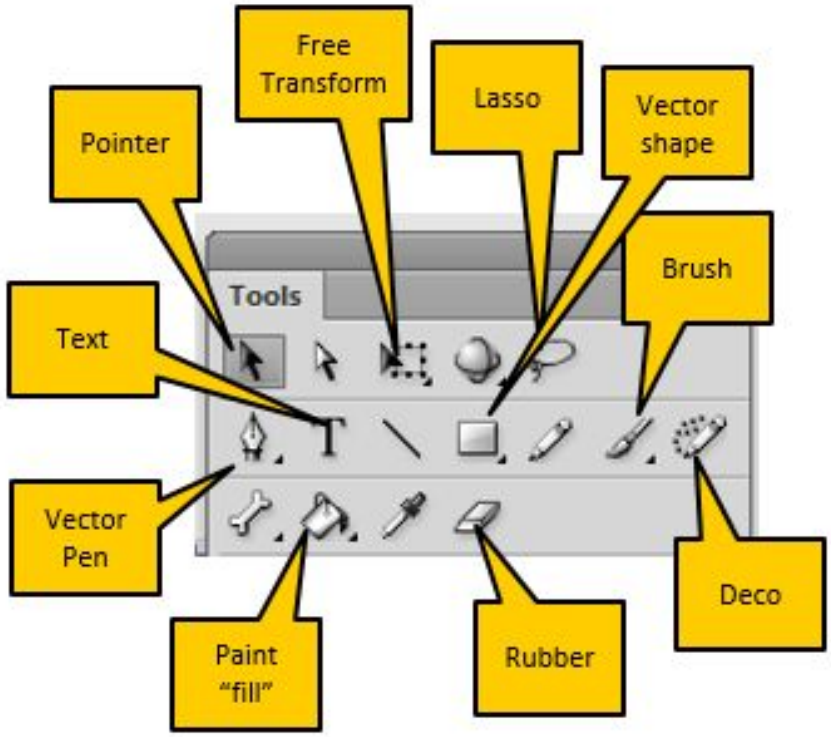
ANIMATION

BASIC TERMINOLOGIES & KEY CONCEPTS

Animation– A collection of static images with slight changes and when played in quick succession, they look as if they are moving.

Keyframes – holds an images inside of a layer

Layers – holds each item separately so can move independently to the others. Can be locked.



Year 8

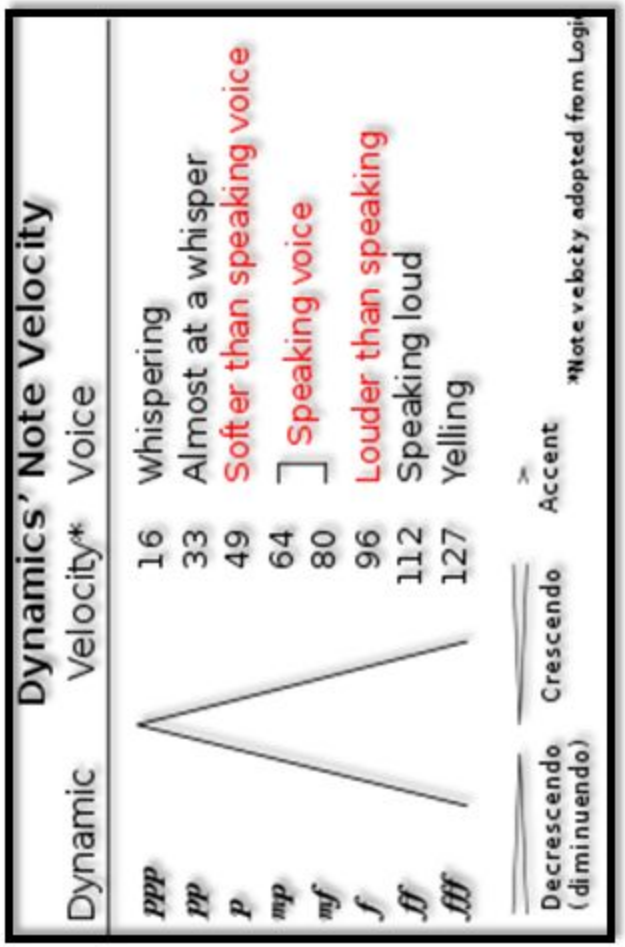
Music

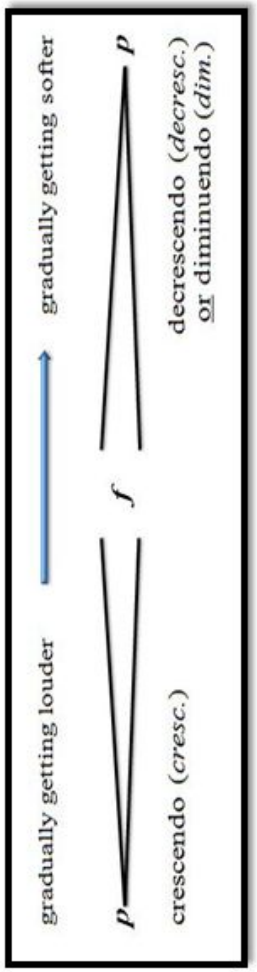
Year 8 Music Revision (Tempo and Dynamics)

What I Must Know			
Explain the use of TEMPO in performing and composing			
Identify BPM from ITALIAN TERMS			
Identify ITALIAN TERMS from BPMs			
Explain the use of a METRONOME in improving your performing			
Identify REAL TIME TEMPO CHANGES from their abbreviations			
Explain the use of DYNAMICS in performing and composing			
Identify DYNAMIC SIGNS from ITALIAN TERMS			
Identify ITALIAN TERMS from DYNAMIC SIGNS			
Describe the effect of adding a CRESCENDO to your music			
Describe the effect of adding a DIMINUENDO to your music			
Perform 'Stitches' (Plickers assessment)			
Compose a 'Bugle and drum fanfare' using MUSESCORE software (free from https://musescore.com)			

Real-Time Tempo Change Markings

Marking	Abbreviation	English
Accelerando	accel.	Gradually speed up
Ritardando	rit.	Gradually slow down (deliberate)
Rallantando	rall.	Gradually slow down (die away)
Ritenuto	riten.	Suddenly slow down
Rubato	rub. or rubato	Expressive speeding up and slowing down/sense of improv.





Tempo

Presto	very fast (168–200 bpm)
Allegro	fast and bright (120–168 bpm)
Allegretto	moderately fast
Moderato	moderately (108–120 bpm)
Andante	at a walking pace (76–108 bpm)
Adagio	slow and stately (66–76 bpm)
Grave	slow and solemn
Lento	very slow (40–60 bpm)

Dynamic Sign	Italian	English
ppp	*pianississimo*	Very, very soft.
pp	*pianissimo*	Very soft.
p	*piano*	Soft.
mp	*mezzo piano*	Moderately soft.
mf	*mezzo forte*	Moderately loud.
f	*forte*	Loud.
ff	*fortissimo*	Very loud.
fff	*fortississimo*	Very, very loud.

Year 8

P. E.

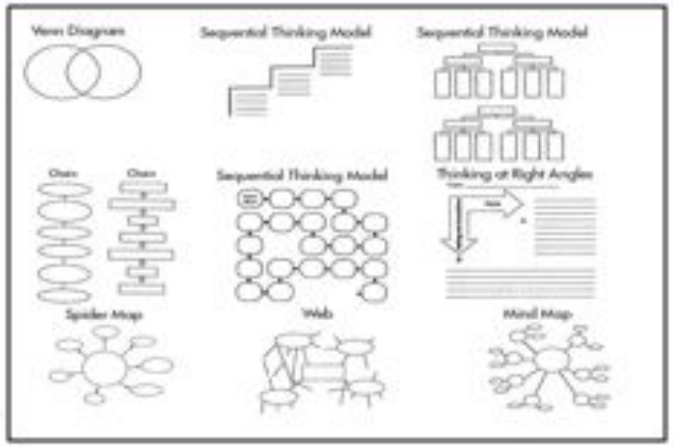
Year 8 PE Revision

What I Must Know			
Know the rules of various sporting activities			
Know what equipment is used in various sporting activities			
Know what playing area is used for various sporting activities			
Identify extrinsic injury risk factors for a variety of sports			
Identify intrinsic injury risk factors for a variety of sports			
Identify risk factors on a diagram (a picture of a sporting activity)			
Describe how an extrinsic risk factor can cause injury to a performer			
Describe how an intrinsic risk factor can cause injury to a performer			
Explain how a performer can reduce their extrinsic injury risk factor			
Explain how a performer can reduce their intrinsic injury risk factor			

KS3 PE REVISION – INJURY RISK FACTORS

Use this knowledge organiser to revise for your assessment. Try:

- practice questions;
- getting someone to quiz you;
- making flashcards to use when quizzing;
- graphic organisers (see right);
- the Cornell method (see right);
- talk for a minute on the given term/topic – no pauses, no hesitations. Slips or repetitions or micro pauses lose a 'life' – three strikes and you're out!

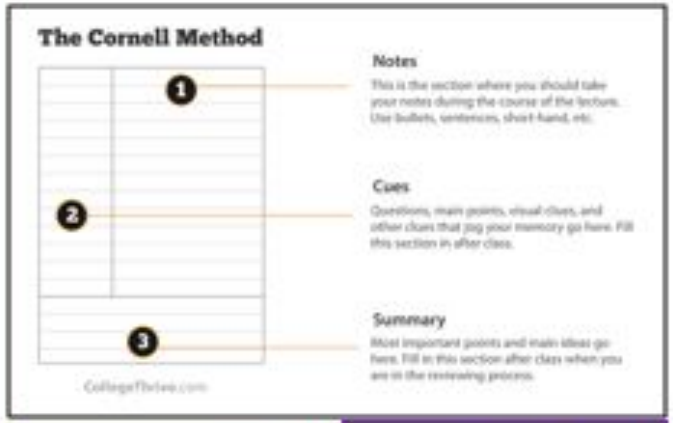


How to score top marks

Quizlet will help you gain the basic knowledge and your teacher will explain information to you in practical lessons. However, to score top marks on your test you will not only need to be able to list the knowledge below, you will need to be able to provide sporting examples (see right).

Sporting example

The weather is an extrinsic injury risk factor for football. For example, the playing surface could be slippery due to it having rained heavily before the match. A player could reduce their risk of injury by wearing studded football boots in order to gain more grip to the surface. This does not mean they would never slip or fall down but it does significantly reduce the risk factor.



Extrinsic factors

Environmental factors

Weather

Playing surface/performance area

Other participants

Type of activity

Some sports have a higher risk and present different injury risks.

E.g. contact to non-contact sports

Coaching/Supervision

Poor/incorrect techniques

Ineffective communication

Importance of rules and regulations

Equipment

Protective equipment (shin pads, gum shield)

Performance equipment (e.g. hockey stick, cricket bat)

Suitability of clothing/footwear

Safety hazards

Risk assessments – identify things that may cause harm, identify who could be harmed, identify steps to prevent harm

Safety checks – weather, surface/floor, equipment, clothing/footwear, jewellery removed, hair tied back

Emergency action plan (3 components-emergency personnel, emergency communication, emergency equipment)

Intrinsic factors

Physical Preparation

Training

Warm up

Cool down

Fitness levels

Overuse

Muscle imbalance

Individual variables

Flexibility-women are more flexible than men

Age-Young children and old people have lower levels of fitness, compared to young people

Nutrition-we need enough calories for energy to do sport

Sleep-fatigue can increase injury risk as we may miss things

Gender-men are stronger than women

Previous/reoccurring injuries-higher risk of injuring these again

Exam tip

Make sure you cannot only differentiate between an extrinsic and intrinsic injury risk factor, but that you can also group the different extrinsic and intrinsic injury risk factors into categories. For example, **flexibility** is an **individual variable**.

Remember if you are unsure about anything on this document come and ask your teacher – we are here to help!

Year 8

Ethics
&
Belief

Year 8 RE Revision

What I Must Know			
Key Terms			
Details of the Christian/Jewish creation stories in Genesis. Including a source of authority			
How the creation story in Genesis shows God's omnipotence			
Christian beliefs that stem from the Genesis creation story			
Christian practices that stem from the Genesis creation story			
Details of the Hindu creation myths			
Details of the Buddhist creation myths			
Details of the Sikh creation myths			
a, b and c question structures			

KS3 Ethics and Belief Cycle 2 Revision Knowledge Organiser

The Christian and Jewish Creation Story in Genesis

✔ God creates everything from nothing (ex nihilo)
✔ God creates the world in 6 days
✔ God rests on the 7th day (**Shabbat**)
✔ God created humans in his own likeness: **"Let us make man in our own image and let them have dominion over all living creatures"**.
✔ Humans are given **dominion** (control) over the earth and all living things.
✔ The first human, Adam, is lonely, so God makes Eve from his rib.
✔ The serpent (devil) tempts Adam and Eve to eat the fruit of the Tree of the Knowledge of Good and Evil, which God told them not to eat
✔ Adam and Eve's sin is punished by God. They are banished from the Garden of Eden and doomed to die.

God's omnipotence in the Genesis creation story

✔ God creates the world out of nothing (ex nihilo)
✔ God creates all living creatures
✔ God creates humanity
✔ God makes Eve from the rib of Adam

How the Genesis creation story influences Christian beliefs

✔ Humans are made in the image of God but are **sinful** and need God's forgiveness.
✔ The purpose of humankind is to have **dominion** over the earth which is shown through **stewardship** on God's behalf.

How the Genesis creation story influences Christian actions

✔ Christians perform their duty as **stewards** of the earth looking after God's creations for the next generation.
✔ Christians pray for forgiveness and confess their sins to a priest to be forgiven.

Creation in Hinduism

✔ Brahma is the creator god
✔ Brahma works with Vishnu and Shiva to maintain a cycle of universes.
✔ Time is not a straight line but eternal cycles with no beginning and no end.

Creation in Buddhism

✔ The Buddha (founder of Buddhism) refused to answer questions about creation
✔ Buddhists believe that worlds follow a cycle of decay, death and rebirth (similar to Hindus)

Creation in Sikhism

✔ The universe was made by Waheguru (god)
✔ Waheguru created the earth and all forms of life on it.
✔ Before the creation there was no earth, no sky, no sun and no life.
✔ Waheguru created everything by a single word.

Key Terms

Abrahamic Religions: Judaism, Christianity and Islam
Agnostic: a person who is not sure if God exists
Atheist: a person who does not believe in God
Dominion: control over something, e.g. the natural world
Indian Religions: Hinduism, Buddhism and Sikhism
Omnibenevolent: all-loving
Omnipotent: all-powerful
Shabbat: the 7th day of the week observed as a day of rest by Jews
Stewardship: the responsibility of humanity to manage the world and animals for the next generation
Theist: a person who believes in a God
Genesis: 1st book of the Bible that contains the Christian and Jewish creation story
Sin: an act of doing something against God's will.

KS3 Ethics and Belief Practice Questions, Model Answers and Structures

Question Structures	Model Answers	Practice Questions
Section 1 Complete the 10 different sentences using your knowledge of the **Key Terms** **Section 2** **(a) Outline 3 ways_____ [3 marks]** *Firstly…* *Secondly…* *Finally...* **(b) Describe 2 ways_ is different to_ [4 marks]** *Firstly..., whereas...* *Secondly..., whereas...* **(c) Explain 2 ways_____ [5 marks]** **You must support your reasons with evidence from the Bible.** *Firstly…, because…* *Therefore/For example…* *Secondly…, because…* *Therefore/For example…* *This is supported by…,* *because/therefore/this means…*	**Section 2** **(a) Outline 3 ways that participate in the Genesis creation story [3 marks]** *Firstly, God gives humanity dominion over all creatures and the earth.* *Secondly, humanity has a duty to be stewards over the earth by taking care of it for the next generations.* *Finally, woman is created using the rib of the man Adam.* **(b) Describe 2 ways that the Genesis creation story is different to scientific theories [4 marks]** *Firstly, the Genesis creation story describes the world being created in 6 days, whereas the theory of evolution shows us that the universe was formed over 13.8 billion years.* *Secondly, the genesis creation story describes God making all living creatures, whereas the theory of evolution suggests that all living creatures evolved from more simple life forms.* **(c) Explain 2 reasons why Christians believe Jesus saves them from their sins [5 marks]** **You must support your reasons with evidence from the Bible.** *Firstly, Christians believe Jesus saves them from their sins, because in life people can separate themselves from God. Therefore, they need God's forgiveness which is given to them through Jesus' death on the cross.* *Secondly, Christians believe Jesus saves them from their sins, because they believe all people are born with original sin. This means that they share in the first sin of Adam and Eve. This is supported by the book of Genesis which states that "God banished them from the Garden of Eden"* *Because of their original sin. Therefore all their descendants are born outside of Eden.*	**Section 2** (a) Outline 3 ways God created the world in the book of Genesis [3 marks] (a) Outline 3 ways the Genesis creation story shows God's omnipotence. [3 marks] (a) Outline 3 ways the Sikh creation story is similar to the Genesis creation story [3 marks] (b) Describe 2 ways the Sikh creation story is different to the Hindu creation story [4 marks] (b) Describe 2 ways the Genesis creation story is different to the Hindu ideas of creation. [4 marks] (b) Describe 2 ways the Genesis creation story is different to the theory of evolution [4 marks] (c) Explain 2 ways a Christian's beliefs and actions are influenced by the Genesis creation story. [5 marks] You must support your reasons with evidence from the Bible.