Great in name, greatest together

GreatSankey High School

Knowledge Organiser

Spring Term

Year 9

A Knowledge Rich Curriculum at Great Sankey High School

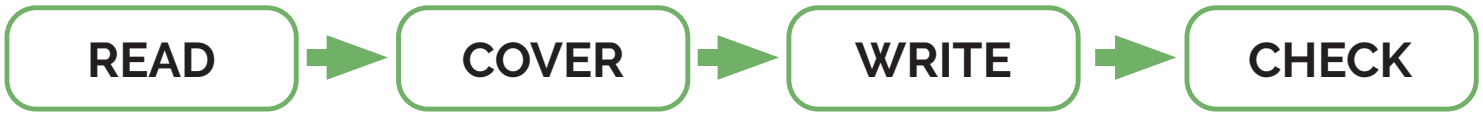
Research around memory suggests that if knowledge is studied once and not revisited or revised, it is not stored in the long-term memory. This means that after one lesson, or revising for one test, the knowledge will not be retained unless it is studied again. To ensure that knowledge is embedded in the long term memory it must be revisited frequently. Ensuring knowledge is embedded aids understanding, and in turn makes future learning more successful. To quote Daniel Willingham's learning theory,

"Thinking well requires factual knowledge that is stored in our long-term memory"

As part of home learning, students should be revising what they have been taught recently but also content they were taught previously. Therefore, as part of our strategy to embed learning over time we have developed knowledge organisers across years 7, 8 and 9. These will provide key content and knowledge allowing students to pre-learn and re-learn, a vital part of processing all the information required to be successful. This knowledge will form the back-bone of assessments in school.

How to use your knowledge organiser

Knowledge organisers will be used in subject lessons, homework activities and form time and therefore you need to bring your knowledge organiser to school every day.
Ensuring that knowledge is retained into your long-term memory and you are ready for tests takes work!



To encourage students to build good study habits, students will be assigned homework quizzes on a week A through Class Charts and Teams. Students will be expected to use revision strategies such as read, cover, write, check to learn key knowledge and will then complete the quizzes to demonstrate their learning. Completion of these quizzes is an essential homework activity and will be closely monitored by the pastoral team.

Other methods that you may wish to try at home are listed below:

- Create mind maps.
- Create flashcards.
- Get sticky with your learning: write out key points from the KO as you read over it on post-it notes.
- Write your own basic recall quizzing questions around the keywords, definitions and key facts that you need to know. Test yourself with these questions and then leave it overnight to answer them the next day.
- Write your own challenging questions using the following command words – explain, compare, evaluate. Then create a model answer for these questions.
- Put the key words from your KO into new sentences.
- Make mnemonics to remember the order of particular concepts.
- Draw a comic strip, storyboard or a timeline describing any series of events that have a chronological order.
- Write yourself or a partner some quiz questions. Quiz each other or swop your questions to see if you can answer each other's questions.
- Think about the big picture – why is knowing specific information important to you/other people/society/companies/science/technology? The more links that you can make, the more meaningful you make your learning and the more likely it is that you will remember it. Think about the big picture – are there any links in the content on your KO to anything that you have watched on TV, read about or heard in the news?
- Give yourself spelling tests.
- Definition tests.
- Draw diagrams of key processes or theories.
- Draw images and annotate/label them with extra information.
- Create fact files.
- Create flowcharts for descriptions or explanations that have a chronological order.
- Summarise in your own words each section.
- Get your parents/carers to test you.
- Pick out key words and write definitions.
- Pre-learning (read a section of your knowledge organiser prior to the lesson).
- Learn key quotes (if applicable). Consider what you may say about these quotes e.g. what the author is trying to make you think/feel, their choice of language, what can be inferred from it.
- Write a letter/blog/article to someone explaining a key idea or concept.
- Prepare to overcome any hurdles: write down any questions or any areas of the KO that you feel you need to speak to your teacher about.
- Use the guidance that may have been given with a specific KO to help you learn the information and use it.

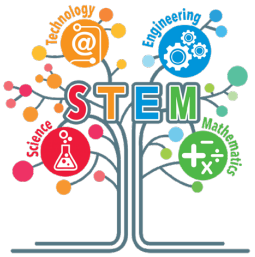
"Don't practise until you get it right. Practise until you can't get it wrong."

Portable Knowledge in STEM

STEM stands for Science, Technology, Engineering and Maths, and it is important that you can see connections between each of these subjects. In the real world there are very few challenges that only require one set of skills. For example, you wouldn't be able to design a new app, video game or computer program without an understanding of all of the STEM concepts. This section of the knowledge organiser will show you how different STEM subjects have things in common, including examples of how you might use them, and how some things may actually appear slightly different from one subject to the next. As Geography is a Natural Science we can include that too.

EXAMPLE	SCIENCE	TECHNOLOGY & ENGINEERING	MATHS	GEOGRAPHY
Tally chart	Can be used to record the number of pupils in different height ranges in biology.	Can be used when choosing a final design choice from a selection of draft designs.	Can be used to record the number of pupils with different eye colours or what their favourite colour, favourite animal or favourite subject is.	Can be used to used record the number of pedestrian or cars that pass a certain place.
Pie chart	Can be used to display the number of pupils with different eye colours in biology.	Can be used to display results of a tally chart.	Can be used to display the number of pupils who travel to school in different way.	Can be used to display the use of renewable and non-renewable energy resources.
Bar chart	Can be used to display the number of people with different blood groups in biology.	Can be used to display results of a tally chart.	Can be used to display the number of pupils with a different favourite sweet.	In geography the term histogram and bar chart are interchangeable and are used to display the percentage of forest lost in a range of countries for example.
Histogram	This is similar to a bar chart but the bars touch each other and they represent continuous data that is grouped, for example number of pupils in different height ranges in biology.	x	Can be used to display number of pupils in different height ranges.	
Line graph	Can be used to display the time taken for salt to dissolve at different temperatures in chemistry.	x	In maths, these are sometimes called scatter graphs or timeseries graphs. They can be used to display house prices or life expectancy.	Can be used to display temperatures of each month in different countries or rainfall in mm.
Line of best fit	In biology a line of best fit can be point to point, but in chemistry they are most often a straight line. In all 3 sciences they could be a curve depending on distribution of the points. For example the extension of a spring in physics.	x	In maths, you might be asked to add a line of best fit to a scatter graph. It is always a straight line drawn with a ruler and can be used on graphs to show correlation between hours of revision and score in test or temperature and number of ice creams sold.	x

Portable Knowledge in STEM



Hopefully this section of the knowledge organiser will help you spot where things crossover from one STEM subject to another as you move from lesson to lesson. REMEMBER some things are exactly the same, some are very similar but might be called different things, and some things are different altogether!

…….and don't forget STEM stands for **Science, Technology, Engineering and Maths**

EXAMPLE	SCIENCE	TECHNOLOGY & ENGINEERING	MATHS	GEOGRAPHY
Range	Range around a mean can be used with data for heart rate after exercise in Biology, amount of hydrogen gas produced in a chemical reaction in Chemistry and number of times a ball bounces in Physics.	x	Range around a mean can be used with data for heights, goals scored in a football match . In maths this includes looking at a table for ungrouped and grouped data.	Range when looking at rainfall and temperature data for different locations. Used when using development indicators such as literacy rate, life expectancy etc.
Mean, Median and Mode	Mean, median and mode can be used to analyse any sets of data with a range of results.	x	Mean, median and mode can be used to analyse any sets of data with a range of results.	Mean, median and mode can be used to analyse any sets of data with a range of results.
Continuous data	This is where you have any value in your data. In science an example would be length.	x	This is where you have any value in your data. In maths an example would be length.	This is where you have any value in your data. An example would be mm of rainfall.
Discrete data	This is where you have whole number values in your data. In science this is sometimes called discontinuous data. An example would be blood group or eye colour in Biology.	x	Sometimes called primary or secondary data. Examples include age, shoe size, result from rolling a dice or the number of pets people have.	x
Using co-ordinates	x	x	4 and 6 figure grid references are used when plotting in 4 quadrants and used in transformations.	Both 4 and 6 figure references are used across all topics in geography to locate places from a map.
Taking measurements that are accurate and precise	Accurate data is close to the true value and precise data gives similar results if you repeat the measurement. In science there are far too many examples to mention!	x	4 and 6 figure references used across all topics to locate places from a map.	Measurements and accuracy are really important when studying map skills, especially when looking at scale and distance.

Tier 2 Vocabulary

	Year 9 Term 2	Definition	Contextual Sentence
1	**ratio**	The relationship in quantity, amount, or size between two or more things.	We mixed the oil and water in a ratio of one to five.
2	**rejected**	Not given approval or acceptance.	The school rejected the idea of changing the uniform.
3	**revenue**	Money earned.	A cake sale boosted the revenue of the charity.
4	**stability**	The strength to stand, balance or endure.	Widen your stance for greater stability when hitting the ball.
5	**style**	A particular manner/ technique.	The letter is written in a formal style.
6	**substitution**	Replacement of one thing/person by another.	The manager decided to make a tactical substitution in the second half.
7	**sustainable**	Able to be maintained at a certain rate or level; to continue.	Cycling is a totally sustainable form of transport.
8	**symbolic**	Acting as a symbol.	The clock in the painting is a symbolic representation of the passing of time.
9	**target**	Something to be aimed for.	He missed the target by two inches.
10	**transition**	The process or a period of changing from one state or condition to another.	The transition from GCSE to A Levels can be challenging for some.
11	**trend**	A general direction in which something is developing or changing.	There has been a trend in the rise of global temperatures, due to global warming.
12	**version**	A form of something differing in some details from an earlier form.	The band performed a different version of the classic song.
13	**welfare**	The health, happiness and fortunes of a person or group.	Many people are becoming concerned about the welfare of farm animals.
14	**whereas**	In contrast or comparison with	The colour black absorbs heat, whereas white reflects it.
15	**abstract**	To extract or remove something.	Water is abstracted from the lake.
16	**accurate**	Exact, correct in all details.	You must be accurate when using quotes.
17	**acknowledged**	Recognised as being good or important. Accepted the validity or legitimacy of.	Henry acknowledged Richard as his successor.
18	**aggregate**	A whole (or a material) formed by combining several separate elements.	The specimen is an aggregate of rock and mineral fragments.
19	**allocation**	The action or process of sharing out something.	The team had an allocation of 500 tickets for the match.
20	**assigned (2 definitions)**	To give out a job/duty. To set something aside for a specific purpose.	She was assigned the task of collecting the books. The king assigned large amounts of money for defence.

21	**attached**	Joined or connected to something.	Each side of the box was attached with two screws.
22	**author**	A writer of a book, article or document.	Charles Dickens was a Victorian author who wrote 'A Christmas Carol'.
23	**bond**	To join or be joined securely to something else.	Heat the material to bond the layers together.
24	**brief (2 definitions)**	Of short duration; not lasting for long. A set of instructions given to a person about a job or task.	Write a brief description of the scene. His brief was to write an uplifting piece of music for the end of the film.
25	**capable**	Being able to do or achieve something.	He is capable of performing well on the stage.
26	**cited (2 definitions)**	To praise someone publicly for something the person has done. To draw attention to and use as evidence to prove a point.	He was cited for bravery. They cited the weather as a reason for cancelling the match.
27	**co-operative (2 definitions)**	Involving mutual assistance in working towards a common goal / willing to help. A business or other organization, owned and run jointly by its members, who share the profits or benefits.	They have been extremely considerate, polite, and co-operative. The farm was a successful co-operative.
28	**discrimination**	The unfair treatment of different people, especially on the grounds of race, age, or sex.	He fought against racial discrimination.
29	**display**	To put out on view / to show.	The display of cakes was amazing.
30	**diversity**	Being composed of differing elements.	Our oceans are home to a rich diversity of species.
31	**domain (2 definitions)**	Land owned by law. An area distinctively marked by some physical feature.	The forest is part of the king's domain. It is a domain of rushing streams, tall trees and lakes.
32	**edition**	A particular form or version of a published text or particular object.	You can buy the book in paperback or hardback edition.
33	**enhanced**	To improve the quality, value or extent of.	The image has been digitally enhanced to show more detail.
34	**estate (2 definitions)**	A large area of land in the country, owned by one person, family, or organization. An area developed for residential, industrial, or commercial purposes.	He inherited the estate from his parents. A large housing estate is being built in the north of the town.
35	**exceed**	To be greater in number or size.	The population will exceed 50,000.
36	**expert**	Having or involving a great deal of knowledge or skill in a particular area.	She is an expert at playing the guitar.
37	**explicit**	Stated clearly and in detail, leaving no room for confusion or doubt.	The instructions were explicit.
38	**federal**	A form of government in which power is shared between a central authority and a number of connected areas.	The federal governments of Canada and the U.S. have agreed on a plan to reduce air pollution.
39	**fees**	A fixed charge/ a sum of money paid	The admission fees are high.
40	**flexibility (2 definitions)**	The quality of bending easily without breaking. The ability to be easily modified.	Regular stretching improves your flexibility and reduces injuries. One of the best things about the restaurant is the flexibility of the menu.

Great Expectations

Great Expectations by Charles Dickens was first published serially in *All the Year Round* in 1860–61 and issued in book form in 1861. The classic novel was one of its author's greatest critical and popular successes. Considered a critique of Victorian society it also chronicles the coming of age of the orphan Pip while also addressing such issues as social class and human worth.

Plot		
Volume 1	Chapter 1-6	Christmas Eve, afternoon: Pip meets the convict (Abel Magwitch); Pip asked to steal file and "wittles" for them. Joe and Mrs. Joe introduced; guns signal escaped convicts; Pip steals food and suffers from "wild fancies" in his guilt. The soldiers; Magwitch and Compeyson; Magwitch "confesses" to Pip's crime. Pip's guilt; Pumblechook describes Magwitch's "theft".
	Chapter 7-13	The reader is introduced to Pip's limited education (from Biddy). This is compared with Joe's lack of learning. Miss Havisham wants Pip to visit; Pip sees Estella, Miss Havisham at Satis House: the gothic conventions are prevalent throughout Chapter 8. Estella seen as "a star" is Pip's eyes and she derides him as he "calls knaves, Jacks" demonstrating his poor breeding. Pip lies about Satis House and what he sees. Pumblechook pretends to know; Pip tells Joe the truth. Joe Gargey goes to Satis House and is given twenty-fie guineas for Pip's time, he is now bound into an apprenticeship with Joe which he feels sullen about. Mrs. Joe feels slighted not to see Miss Havisham
	Chapters 14-19	Retrospective narrative reflection on Pip's shame and ingratitude – juxtaposed with this, Joe's virtues are described. The half-holiday: Joe fights Dolge Orlick and Mrs. Joe is assaulted. Biddy moves in to look after Mrs Joe. Jaggers tells Pip of his "great expectations" and secrecy of benefactor. Pip undergoes transition point in Chapter 19 as he visits Mr Trabb's shop and apparently without "boasting" flaunts his new wealth.
Volume 2	Chapters 20-26	Pip lodges with Herbert. Wemmick takes Pip to Barnard's Inn; Pip recognizes Herbert as "pale young gentleman". Herbert tells Miss Havisham's story. Pip takes up rowing and living the life of a 'gentleman' as he spends his fortune. Mr Jaggers flaunts his housekeeper, Molly's wrists in a scene of social power and male dominance. Pip is yet to realise Molly is Estella's mother.
	Chapters 27-33	Biddy writes to Pip asking if Joe can visit Barnard's Inn; he calls Pip "Sir" highlighting Joe's "simple dignity" that does not fit with the figure of the 'gentleman'. Pip reads in local paper that Pumblechook is his "patron". Pip visits Miss Havisham; Orlick is gatekeeper. Pip declares his love for Estella. Pip waits for Estella who is visiting London. Wemmick shows him Newgate (convict motif).
	Chapters 34-39	Pip and Herbert accumulate rather large debts and Mrs. Joe dies. Pip comes of age (November) and becomes responsible for his finances; asks Wemmick's advice for Herbert. Pip is to escort Estella and take her to Satis House; quarrels with Miss Havisham and discovers Bentley Drummle as Estella's suitor. He leaves heartbroken. Pip is 23 now and Magwitch returns - revealing he is Pip's benefactor.
Volume 3	Chapters 40-44	The man on the stairs, "Provis" comes to stay; Jaggers confirms his story as Pip's benefactor. Herbert then meets Magwitch/"Provis". Herbert advises Pip to take Magwitch out of the country; they ask him about his life. Pip tells Estella he loves her but Estella is set to marry Bentley Drummle.
	Chapters 45-50	Pip feels he is being watched…He fears Estella is married but will not make sure. Pip dines with Jaggers; Estella is married. Pip recognizes Molly as her mother and Wemmick tells of Molly's trial. Chapter 49 sees Miss Havisham's confession and repentance; Estella's adoption and the fire. Pip says "I forgive her". Herbert tells of Magwitch's child and Pip knows Estella is his. Magwitch said that Pip reminded him of her.
	Chapters 51-59	Jaggers explains Estella's adoption and advises that Pip keep it secret. Orlick's confession and attempted revenge; Pip rescued by Trabb's boy and Herbert. Magwitch's escape is thwarted; Compeyson drowned and Pip reconciled to his benefactor, Magwitch. Pip's wealth is forfeited to the crown. Magwitch convicted and sentenced; Pip tells him, before his death, of Estella. Pip becomes ill and is arrested for debts but rescued by Joe. Orlick ends up in jail. Miss Havisham's will is read and Pip plans to propose to Biddy. Satis House goes up for auction and Joe marries Biddy. Eleven years later, Pip returns; sees young Pip and meets (widowed) Estella at Satis; "no shadow of…parting".

Characters	
Pip Pirrip *Felicitous, Timid, Susceptible, Bourgeois, Improvident, The Fortunatus Prototype* The **Bildungsroman's protagonist**, Pip is an orphan serves as the apprentice of the gentle blacksmith Joe. When he unexpectedly comes into a fortune, Pip grows haughty and extravagant in pursuit of a lifestyle genteel enough to meet the refined standards of Estella. Confusing personal integrity with public reputation, Pip is cruelly disloyal to Joe and Biddy, avoiding them because of their lower class. Still, Pip learns to judge people by internal rather than superficial standards and redeems himself by repenting sincerely and reforming his personal values.	**Miss Havisham** *Decrepit, Megalomaniac, Spectral, Affluent, Desolate, Disconsolate, Wretched, Evasive, Tacit* The wealthy daughter of a brewer, Miss Havisham was abandoned on her wedding day by her fiancée (Compeyson) and, traumatized. She preserves herself and her house in wedding regalia, shutting out the world for over twenty years. To exact her revenge on men, Miss Havisham adopts and raises Estella to be beautiful and desirable but completely heartless. Miss Havisham is capricious, manipulative, bitter, and, until novel's end, unable to recognize anyone's pain but her own.
Estella *Morally Bankrupt, Haughty, Vainglorious, Contemptuous, Disparaging, Insolent* The adopted daughter of Miss Havisham, Estella is proud, refined, beautiful, and cold, raised by Miss Havisham to "wreak revenge on the male sex". Miss Havisham has raised her to lack a true human heart and she is unable to love.	**Biddy** An orphan Pip meets at the village school, Biddy moves into the forge to help out after Mrs. Joe's attack and later becomes a schoolteacher. She is humble, kind, moral, and fiercely intelligent, absorbing knowledge without any formal education. She is also sharply perceptive and sees through everyone's pretensions, calling Pip out on his delusions and snobbery long before Pip can recognize them.
Joe Gargery *Virtuous, Recitude, Magnanimous, Doleful, Obsequious, Uncouth* Joe is a father figure for Pip throughout Pip's childhood and his tender kindness protects Pip from Mrs. Joe's harsh parenting. Joe has no formal education but possesses a deep sense of integrity and an unfailing moral compass. Joe is loyal, generous, and kind, and acts lovingly towards Pip even when Pip's is ungrateful.	**Mrs Joe** *"Capricious", Tyrannical, Condensing, Choleric* Mrs. Joe is fiery, tyrannical, and false, harping on her own victimhood even as she abuses Pip and Joe. She is obsessed with social status and reputation. Yet, after the attack by Orlick that gives her brain damage, Mrs. Joe's personality changes completely and she becomes patient, compassionate, and docile.
. Provis (a.k.a. Abel Magwitch) (a.k.a. the convict) The same escaped convict Pip helps in the novel's opening scenes. Provis' gratitude towards Pip inspires him to devote his life-savings to Pip, becoming Pip's anonymous patron. Cruelly swindled by Compeyson, Provis has lived a life in and out of prison. Still, his criminal record is largely the result of unfortunate circumstances, not character, for Provis is kind, good-hearted, and immensely generous.	**Mr Jaggers** *Supercilious, Judicious, Erudite, Retributive, Sagacious, Obdurate* A famous lawyer in London, Mr. Jaggers is Pip's guardian and the middleman between him and his patron. Mr. Jaggers also works for Miss Havisham. He is rational, sharp-minded, and intimidating. He prides himself on neither expressing nor responding to human emotion.
Bentley Drummle *Machiavellian Prince, Guarded* Bentley Drummle studies with Pip. He is a wealthy heir to a baronetcy, upper class according to the old system of inherited rank. Described as "idle, proud…and suspicious," Drummle is Pip's nemesis. He pursues Estella.	**Herbert Pocket** *Loyal, Aspirational, Invariable, Enduring* Pip's best friend, Herbert is compassionate, honest, and unpretentious. He and Pip live together in London where he works in a counting house as a merchant. He cheerfully helps Pip through all of Pip's struggles.

Themes: Ambition and self-improvement, social class, crime and guilt, innocence and justice, familial connections, revenge, redemption, avarice, setting

The Art of Rhetoric

Definition: the art of effective or persuasive speaking or writing, especially the exploitation of figures of speech and other compositional techniques.

What is Rhetoric?

- Rhetoric means the art of persuasion. The art of getting people to think and do what you want.
- Athens, in Greece, is seen as the birthplace of rhetoric.
- People started studying rhetoric because a man's success in Athens depended on his ability to persuade people to vote him into power.
- It was believed that if one mastered rhetoric, they would be able to win any argument without any prior knowledge of the topic.
- Every time we write, we engage in debate or argument. We try to persuade our readers both directly and indirectly. We want them to change their mind, complete an action or think in a new way.

What is a rhetorical situation?

- The purpose of writing – what is the writer trying to achieve or what argument is the writer trying to make?
- The intended audience – who are you appealing to?
- The writer/ speaker.
- The form of communication.
- The allotted time for the message.
- The political, social or cultural implications.

Aristotle and The Aristotelian Triad

- Aristotle was an Ancient Greek philosopher who established many of the traditions and devices that define what rhetoric is.
- He saw these features as underpinning all good persuasive language.
- The Aristotelian Triad: strategies people use to appeal to their audiences

What is Logos?

- Logos is the appeal to an audience's logic and rationality. It can be found in argumentative writing, persuasive writing, literature and poetry.
- In Greek, logos means "reason", "discourse" and plea".
- Aristotle believed that logos was more important than pathos and ethos as the effectiveness of an argument depended on a strong, logical appeal.

Referring to facts and figures
Citing relevant, current statistics
Providing examples
Including and addressing an opposing view

What is pathos?

- Pathos is an appeal to an audience's emotions in order to evoke feeling.
- In Greek, pathos means "suffering" and "experience"
- Aristotle believed that pathos is a means of awakening people's emotions in order to sway their opinion towards that of the speaker.
- It is important to use pathos through creating a balance between the triad.

Using emotionally compelling stories or anecdotes
Stark, startling statistics that evoke a specific response
Showing empathy/ understanding for an opposing view

What is ethos?

- Ethos is an appeal to the audience through establishing credibility, knowledge and a strong moral character.
- Ethos is used to establish authority on a subject and to build trust with the reader.
- In Greek, ethos means 'moral character'

Providing evidence from relevant and credible sources
Referring to relevant work or life experiences

Key Vocabulary	Definition	Contextual Sentence
Anaphora	Repetition of the same word or phrase at the beginning of a line.	In every cry of every Man, In every infant's cry of fear, In every voice, in every ban, (London, William Blake)
Direct Address	A speaker is talking directly to an individual or group. It can be a pronoun, a proper noun or a collective noun.	You have the power to change the world. We must work together to save our planet.
Hyperbole	Deliberate exaggeration for effect.	I'm so hungry, I could eat a horse. I'm dying of thirst.
Imperatives	Expressing a command, request or strong encouragement.	Sit down and eat your lunch. Tell your friends about the dangers of fossil fuel.
Metaphor	A comparison between two unlike things, this describes one thing as if it were identical.	Time is money. He's buried in a sea of paperwork.
Facts	Information used as evidence or as part of a report/ news article. It is known or can be proved to be true.	The best place in the world to see rainbows is in Hawaii Recent droughts in Europe were the worst in over 2000 years.
Opinions	A view or judgement formed about something.	All schools should teach survival skills in the event of a nuclear war. To solve traffic, we should invest in trains and subways.
Emotive Language	Certain word choices create an emotional response in the reader.	The innocent victims The government will slash interest rates
Rhetorical Questions	A question asked in order to make a point rather than get an answer.	Who wouldn't want to be a millionaire? Do we really want our planet to survive?
Triplet	A collection or group of three. It can be words, phrases or sentences.	The key to survival is: preparation, planning and positivity.

Year 9 Mathematics Knowledge Organiser

Topic

Algebra

What is the etymology of the word **algebra**?

The word algebra comes from the Arabic: الجبر, romanized: al-jabr, lit. 'reunion of broken parts, bonesetting' from the title of the early 9th century book Ilm al-jabr wa l-muqābala (The Science of Restoring and Balancing) by the Persian mathematician and astronomer al-Khwarizmi.

Algebra Review

Expressions

One or a group of mathematical symbols representing a number or quantity

An expression can include numbers, variables, constants, operators and grouping symbols (see BIDMAS)

Expressions do not contain equality or inequality signs

Examples

$4x + 6y$, $8x^2$, $2(x + 4y)$, $b^2 + c^2$

Identity

Where the two expressions are exactly the same, this is denoted by the symbol ≡

Examples

$4(x + 7) \equiv 4x + 28$

$6x + 4y + 2x - 3y \equiv 8x + y$

$x^2 + 10x + 11 \equiv (x + 5)^2 - 14$

Simplifying expressions: +/-

When we collect like terms the sign before the term tells you what to do with it

$a + a + a$ = **3a**

$4a + 2b - 3a + 5b$ = **a + 7b**

$5k^2 + 3k - 2k - 4k^2$ = **k^2 + k**

$4rt + 6rt + 5r + 3t$ = **10rt + 5r + 3t**

Remember!

Only like terms can be collected!

Equations

A mathematical statement containing an equal sign, showing that the two signs are equal.

An algebraic equation has specific values that can allow it to work

Examples

$4 + 7 = 11$, $x + 5 = 12$, $4x + 3y = 27$

$x^2 - 5x + 14 = 0$, $\frac{3x}{2} + 5 = 17$

Inequality

Where two expressions are not equal in size or value. These are denoted by the following symbols

$<$, $\leq$, $>$, $\geq$, $\neq$

Examples

$3x + 5 < 16$, $x + 10 \geq 24$, $5 + 8 \neq 12$

$5 < 2x \leq 20$

Simplifying Expressions: ×/÷

Multiply or divide the numbers, multiply or divide the letters, and then put them together

$5b \times 8n$ = **40bn**

$6a \times 8a^3$ = **$48a^4$**

$\frac{50mn}{10n}$ = **5m**

Remember if you have powers!

When multiplying, you add the powers

When dividing, you take the powers

Formula

A mathematical rule using symbols, usually as an equation describing a certain relationship between quantities

Examples

$v = u + at$, $P = 2w + 2l$, $A = \pi r^2$,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Writing Expressions

5 more than x	x + 5
7 less than k	k - 7
Double y	2y
y split by 7	y ÷ 7
m lots of n	mn
b squared	b^2

I think of a number, add 4 and cube the result

$x \xrightarrow{+4} x + 4 \xrightarrow{\text{cube}} (x + 4)^3$

Expanding Brackets

Expand everything on the outside by everything on the inside…and simplify if needed

Expanding by a single bracket

$5(x + 3) + 6(x - 4)$

$5x + 15 + 6x - 24$ = $11x - 9$

Expanding two brackets

$(x + 7)(x - 4)$

$x^2 - 4x + 7x - 28$ = $x^2 + 3x - 28$

How you expand it out is your call - Crab's Claw, FOIL, … the choice is yours

Factorising

- finding the factors of an expression.
- **factorising** is the reverse of expanding brackets.

Factorising – aka "whack it into brackets"

Factorising – 1 bracket

Look for a number (the HCF!), or a letter that is common to each term in the expression…it could even be both letters and a number!

$5x + 15$ = **$5(x + 3)$**

$10x - 12$ = **$2(5x - 6)$**

$ab + ac$ = **$a(b + c)$**

$x2 + 6x$ = **$x(x + 6)$**

$wig + wam$ = **$w(ig + am)$**

$10xy + 15y$ = **$5y(2x + 3)$**

$8x^2y + 4xy^2$ = **$4xy(2x + y)$**

Rearranging (aka Changing the Subject)

A very powerful thing that Algebra can do is to **rearrange** a formula so that another variable is the subject.

The **subject** of a formula is the single variable (usually on the left of the "=") that everything else is equal to.

Example

Rearrange $y = 3x + 7$ to make x the subject

Answer $x = \frac{y-7}{3}$

Substitution

Substitution means putting numbers where the letters are

Example

If **a = 3, b = 7 and c = -1** find the value of **2a + 4c**

Answer

$= 2 \times 3 + 4 \times -1$

$= 6 + (-4)$

$= 2$

Year 9 Mathematics Knowledge Organiser	Topic	Where does the word 'proportion' come from?
	Ratio and Proportion	The word came from late Middle English: from Old French, from Latin proportio(n-), from pro portione in respect of its or a person's share.

Ratio

A ratio **compares values**.
A **ratio** says how much of one thing there is compared to another thing.

Examples

part-part or part-whole

4:6 part-part

$\frac{4}{10}$ part-whole

These relative values in a ratio are often called part-part or part-whole.

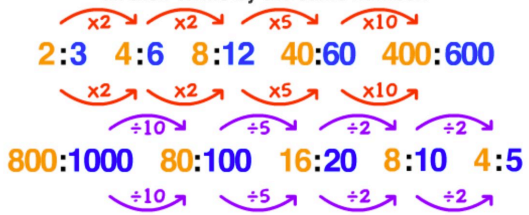
Equivalent Ratio

Equivalent ratios (which are, in effect, equivalent fractions) are two ratios that **express the same relationship between numbers**.

We can create equivalent ratios by multiplying or dividing both the numerator and denominator of a given ratio by the same number.

Example

Equivalent ratios are formed by multiplying or dividing all their terms by the same number.



Ratio in the form 1:n or n:1

In order that a ratio is written in the form **1:n** we must make the **left hand side** equal to one.

In order that a ratio is written in the form **n:1** we must make the **right hand side** equal to one.

Example

To write a ratio in the form 1 : n, divide both sides by the **left-hand** number.

$$6 : 9 = 1 : 1.5$$

To write a ratio in the form n : 1, divide both sides by the **right-hand** number.

$$6 : 9 = \frac{6}{9} : 1 = \frac{2}{3} : 1$$

Proportion

Proportion is **a mathematical comparison between two numbers**.

Being in **proportion** means that two ratios or fractions are of equal value.

Examples

1:3 = 2:6 so they are in proportion

$\frac{1}{2} = \frac{2}{4}$ so they are in proportion.

Direct Proportion

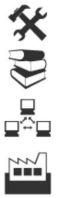
Two quantities are said to be in **direct proportion** if they increase or decrease in the same ratio.

If two amounts are **directly proportional** we can scale the quantities up by multiplying.

Example

The wages for a job are paid at an hourly rate.
Salary = Hourly Rate x Hours Worked
Hourly Rate = $20.00 per hour

Hours Worked	Salary
1	$20
2	$40
3	$60
4	$80



Inverse Proportion

Inverse proportion is when one value **decreases** at the same rate that the other **increases**.

Examples

Year 9 Mathematics Knowledge Organiser

Topic

Statistics

What is the Office for National Statistics? (www.ons.gov.uk)

The ONS is the UK's largest independent producer of official statistics and its recognised national statistical institute. They are responsible for collecting and publishing statistics related to the economy, population and society at national, regional and local levels. They also conduct the census in England and Wales every 10 years.

Averages and Spread

Hey diddle diddle, the **median's** the **middle**
You **add then divide** for the **mean**
The **mode** is the one you see the **most**
And the **range** is the **difference** between
Yeah!

Median

Find the median of
6, 4, 3, 6, 7, 11, 9, 15

Put the numbers in order, smallest first

3 4 6 6 7 9 11 15

There are two numbers in the middle, 6 and 7 – find halfway between them

(6 + 7) ÷ 2 = **6.5**

So 6.5 is the **median**

Mean

Find the mean of
8, 6, 2, 3, 11, 12, 0

Find the sum of the numbers.

Total = 42

There are 7 items in the data set (the numbers) so we will divide by 7.

42 ÷ 7 = **6**

So 6 is the **mean**

Mode

Find the mode of
1, 3, 6, 4, 3, 2, 7, 8, 10

Find the number that appears the most (Putting them in order can help).

3 appears the most (twice) so **3 is the mode**

Range

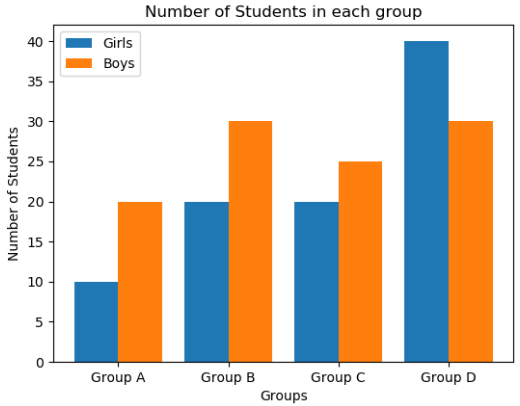
Find the range of
2.6, 3.7, 2.1, 8.4, 2.9, 3.6

Find the Highest and Lowest numbers and calculate **Highest - Lowest**

Highest = 8.4 **Lowest** = 2.1
Range = 8.4 – 2.1 = 6.3

Bar Chart

A **Bar Graph** (also called Bar Chart) is a graphical display of data using bars of different heights.



The Bar Chart Checklist

- ☐ **A title** explaining what the bar chart means.
- ☐ **Labels** that tell you what each bar means. This could be a key or just a label underneath the line that runs along the bottom of the bar graph (the **horizontal axis**).
- ☐ The line going up the left-hand side of the bar graph (the **vertical axis**) must have **numbers at equal intervals** (a scale). This tells you how big the bars are so that your reader can read the data.

Two-Way Tables aka Carroll Diagrams

Two-way tables are used to study the relationship between categorical variables.

They are also known as **Carroll Diagrams** and are named after **Lewis Carroll** (who wrote Alice's Adventures in Wonderland)

Dominant Hand
Sample: 20 toddlers, 20 18 year olds.

	Left	Right	Totals
2 years	9	11	20
18 years	15	5	20
Totals	20	20	40

Pie Chart

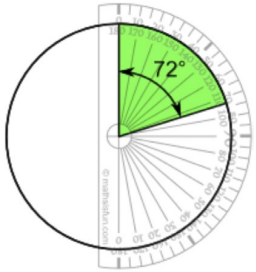
A **Pie Chart** is a graph using a divided circle where each section represents a percentage of the total.

Each section represents a percentage (or a proportion) of the total

The Pie Chart Checklist

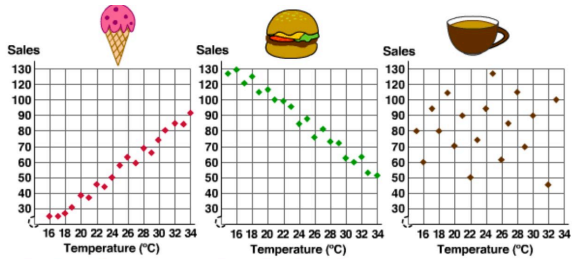
Remember that there are 360° in a circle so each group in the pie chart will be a proportion of 360°.

- ☐ Draw a circle and mark the centre of the circle
- ☐ Draw a radius from the centre of the circle vertically upwards
- ☐ Then use your protractor to measure the degrees of each sector.
- ☐ Finish up by colouring each sector and giving it a label like "Comedy: 4 (20%)" etc.
- ☐ And don't forget a title!



Scatter Diagrams

A **scatter diagram** is a diagram where points are plotted to show the relationship (correlation) between two variables.



Positive Correlation
A positive trend - as one set of values increases, the other set increases.
For example, as the temperature went up ice cream sales went up.

Negative Correlation
A negative trend - as one set of values increases, the other set decreases.
For example, as the temperature went up hamburger sales went down.

No Correlation
No trend - the points are scattered randomly with no visible pattern.
For example, as the temperature went up there was no apparent effect on coffee sales.

From here we could draw a **line of best fit**

Mathematics Command Words – Tier 2 Vocabulary

Assess

Make a judgement or decision based on the information you have.

Example Application

Assess the statements below and decide whether they are true or false

Calculate

Work out, showing your method where necessary.

Example Application

Calculate the missing angles in this diagram…

Compare…and/to/with

Work out or identify the values required and say which is smaller/larger, etc.

Example Application

Compare the following calculations and say which is larger.

23% of 50 or 60% of 20

Convert

Change a value from one numerical form to another or a measure from one unit to another.

Example Application

Convert 0.74 into a fraction in its simplest form.

Draw

Give an accurate depiction of a graph, map, diagram, etc.

Example Application

Draw the graph of $y = x^2$ or values of x from –2 to 2

Estimate

After rounding given values, give an approximate answer to a calculation or measurement.

Example Application

Estimate the answer to

$$\frac{8.62 + 22.1}{5.23}$$

giving your answer to 1 significant figure.

Explain

Give reasons or examples of why or how.

Example Application

Use the table to **explain** how you can tell the conversions cannot all be exact..

Find

Figure out or work out the answer or missing piece of information

Example Application

Find a fraction that is greater than 0.3 but less than 0.4.

Give a reason why...

Show a calculation and/or written evidence to support the given statement.

Example Application

Assess the statements below and decide whether they are true or false

Is this correct?

Give an argument, with reasons, whether the statement is correct or not.

Example Application

Jamal writes the following calculation

$$\frac{3}{7} - \frac{2}{5} = \frac{15}{35} - \frac{14}{35} = \frac{1}{35}$$

Is he correct?

Measure

Use a ruler to measure a length or a protractor to measure an angle.

Example Application

Measure the angle ABC correct to the nearest degree

One has been done for you

The given example shows the format in which the rest of the answers are required.

Example Application

The properties of the quadrilaterals are placed into a table.
Complete the table. The first **one has been done for you**

Show working to support your answer

If you have made a decision, give a calculation (and wording where it helps) that shows why you made it.

Example Application

Anya says the answer is _
Deion says the answer is __ .

Who is correct?

Show working to support your answer

Work out

One or more calculations will usually be necessary.

Example Application

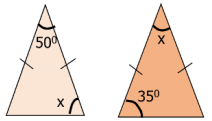
Work out three-quarters of one-fifth of 100

You may use… to help you

A diagram or table has been given that may be helpful in organising your working, but you do not have to use it.

Example Application

Find the angle x,



you may use the diagram to help you, including writing on the diagram if needed.

Year 9 Biology: Digestive System

1) Tissues and Organs

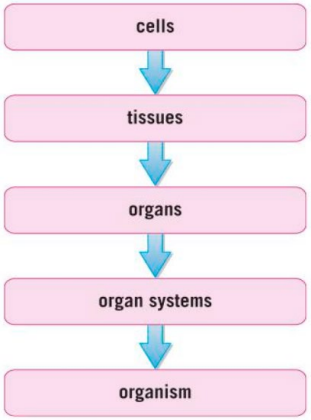


Figure 4 *Larger multicellular organisms have many levels of organisation*

3)The chemistry of food

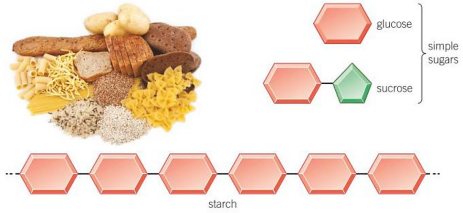


Figure 1 *Carbohydrates are all based on simple sugar units*

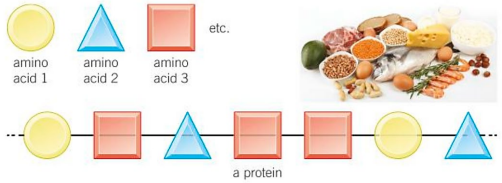


Figure 3 *Amino acids are the building blocks of proteins. They can join in an almost endless variety of ways to produce different proteins*

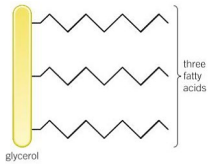


Figure 2 *Lipids are made of three molecules of fatty acids joined to a molecule of glycerol*

5) Factors affecting enzyme action

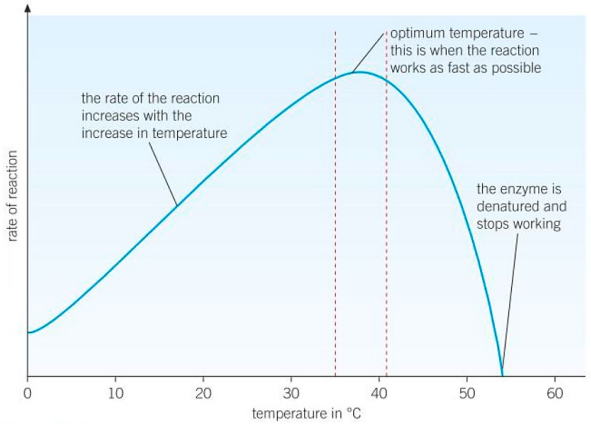


Figure 1 *The rate of an enzyme-controlled reaction increases as the temperature rises – but only until the protein structure of the enzyme breaks down*

2) Human digestive system

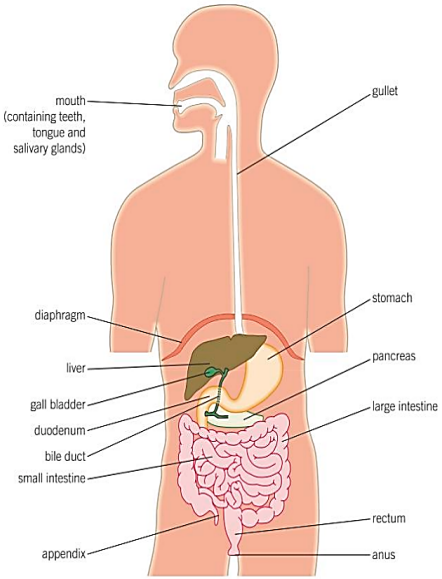


Figure 1 *The main organs of the human digestive system*

4) Catalysts and enzymes

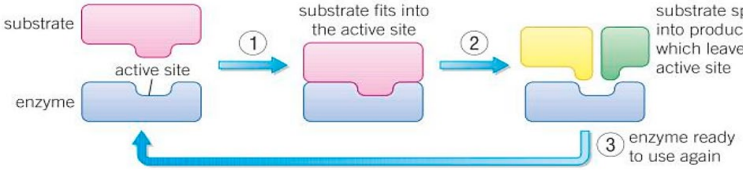


Figure 2 *Enzymes act as catalysts using the 'lock and key' mechanism shown here*

Key points

- Catalysts increase the rate of chemical reactions without changing chemically themselves.
- Enzymes are biological catalysts and catalyse specific reactions in living organisms due to the shape of their active site. This is the lock and key theory of enzyme action.
- Enzymes are proteins. The amino acid chains are folded to form the active site, which matches the shape of a specific substrate molecule.
- The substrate binds to the active site and the reaction is catalysed by the enzyme.
- Metabolism is the sum of all the reactions in a cell or the body.

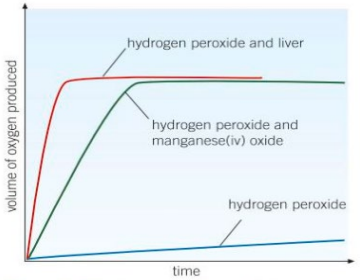
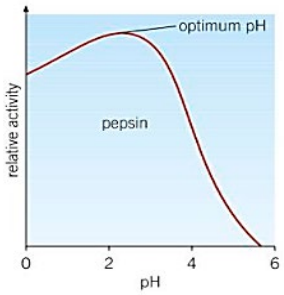
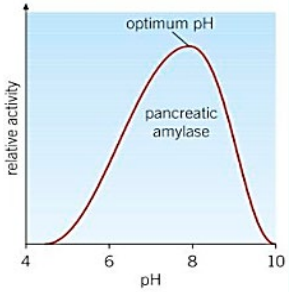


Figure 3 *The decomposition of hydrogen peroxide to oxygen and water happens much faster using a catalyst. The reaction takes place faster when catalysed by enzymes (found in liver) than when catalysed by manganese(IV) oxide*

6) Making digestion efficient





Key points

- Enzyme activity is affected by temperature and pH.
- High temperatures denature the enzyme, changing the shape of the active site.
- pH can affect the shape of the active site of an enzyme and make it work very efficiently or stop it working.
- The protease enzymes of the stomach work best in acid conditions. The stomach produces hydrochloric acid, which maintains a low pH.
- The enzymes made in the pancreas and the small intestine work best in alkaline conditions.
- Bile produced by the liver, stored in the gall bladder, and released through the bile duct neutralises acid and emulsifies fats.

Year 9 Biology: Cells and Transport Key Vocabulary

Key Word	Definition	Contextualised Sentence
Active site	The site on an enzyme where the reactants bind.	The substrate and the enzyme joined together at the **active site** during the chemical reaction.
Amino acids	Molecules made up of carbon, hydrogen, oxygen, and nitrogen that are the building blocks of proteins.	During digestion, proteins are broken down into **amino acids**.
Amylase	Enzyme that speeds up the digestion of starch into sugars.	The salivary glands produce **amylase** when food is broken down by the mouth.
Bile	Neutralises stomach acid to give a high pH for the enzymes from the pancreas and small intestine to work well.	The liver produces **bile** to prevent the stomach acid from damaging the small intestine.
Carbohydrases	Enzymes that speed up the breakdown of carbohydrates into simple sugars.	The breaking down of carbohydrates during digestion is catalysed by **carbohydrases.**
Carbohydrates	Molecules that contain only carbon, hydrogen, and oxygen. They provide the energy for the metabolism and are found in foods such as rice, potatoes, and bread.	Professional athletes often have a diet that is rich in **carbohydrates.**
Catalyst	A substance that speeds up the rate of another reaction but is not used up or changed itself.	Protease acts as a **catalyst** when proteins are broken down during digestion.
Denatured	The breakdown of the molecular structure of a protein so it no longer functions.	The enzyme had stopped working as the temperature had became too great, causing the enzyme to become **denatured**.
Differentiate	The process where cells become specialised for a particular function.	Body cells often **differentiate,** allowing different types of tissues to be formed so organs can be made.
Digestive system	Organ system where food is digested and absorbed.	In order for the nutrients to be absorbed, food must pass through the **digestive system**.
Enzymes	Biological catalysts, usually proteins.	Lots of chemical reactions that occur during digestion are made quicker by the use of **enzymes**.
Fatty acids	Part of the structure of a lipid molecule.	Cheese is an example of a food that is lipid rich, and so it will contain lots of **fatty acids**.
Glycerol	Part of the structure of a lipid molecule.	For every one **glycerol** molecule, there are 3 fatty acids within a lipid.
Lipase	Enzymes that speed up the breakdown of lipids into fatty acids and glycerol.	The breaking down of lipids during digestion is made quicker by the presence of **lipase** enzymes.
Lipids	Include fats and oils and are found in foods such as butter, olive oil, and crisps. They are made of carbon, hydrogen and oxygen.	**Lipids** are an important part of your diet as they keep you warm by providing a layer of insulation under your skin.
Proteases	Enzymes that speed up the breakdown of proteins into amino acids.	The breaking down of proteins during digestion is made quicker by the presence of **protease** enzymes.
Proteins	Molecules that contain carbon, hydrogen, oxygen, and nitrogen and are made of long chains of amino acids. They are used for building the cells and tissues of the body and to form enzymes.	Meat, eggs, and nuts are examples of food that are rich in **proteins**.
Simple sugars	Small carbohydrate units, for example glucose.	Energy drinks often contain **simple sugars**.

Testing for Gases

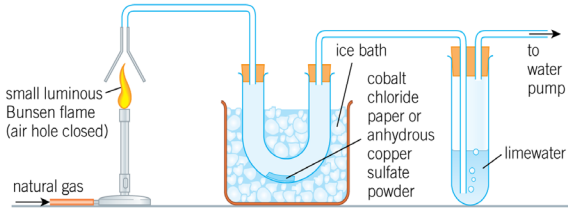
Test for **hydrogen** (H_2)is the **squeaky pop test**, where you put a lit splint into the test tube. The **hydrogen** gas will react with the heat to produce a pop sound.

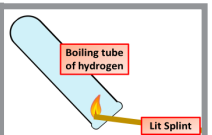
The test for **oxygen** (O_2) is using a **glowing splint** and when it comes into contact with **oxygen**, the splint will relight.

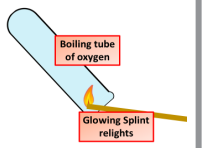
carbon dioxide
limewater **CO_2** **limewater**

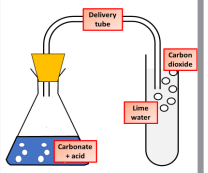
The test for chlorine (Cl_2) is done by using **Litmus** paper, where the coloured paper with turn with as the chlorine "bleaches" the **Litmus** paper.

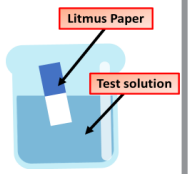
The test for **H_2O** and **CO_2** (the products of combustion) is using the equipment below. It uses **cobalt blue paper** to test for water and **limewater** to test for CO_2











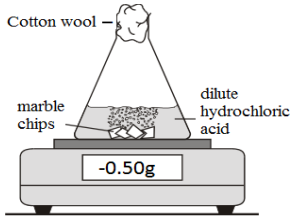
Measuring Rates of Reaction

There are two ways you can work out the rate of a chemical reaction. You can find out how quickly:

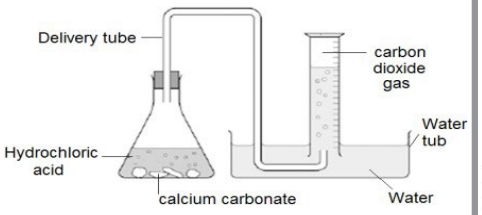
- The reactants are used up
- The products are made

There are **three techniques** that can be used:

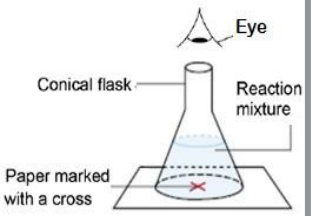
Measuring the volume of gas given off.



Measuring the decreasing mass of a reactant mixture



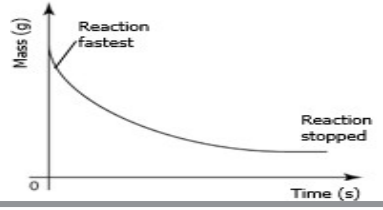
Identifying a colour change



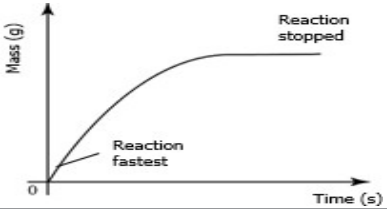
Calculating the Rate of a Reaction

$$\text{Mean} = \frac{quantity\ of\ reactant\ used}{time} \quad or \quad \frac{quantity\ of\ product\ used}{time}$$

Typical graph when measuring **reactants used**



Typical graph when measuring products **formed**



Collision Theory

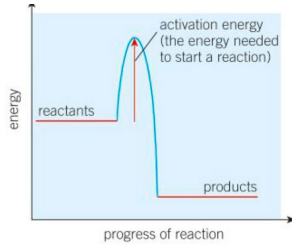
Factor	Effect on Rate	Explanation
Surface area of solid reactants	Increasing the surface area **increases** the rate of reaction.	**Exposes more of the solid** so that there is a **greater frequency of collisions** occurring.
Concentration of reactants	Increasing the concentration **increases** the rate of reaction.	**Increases the frequency of a collision** as particles are **closer together**.
Pressure of gases	Increasing the pressure **increases** the rate of reaction.	**Increases the frequency of a collision** as particles are **closer together**.
Temperature	Increasing the temperature **increases** the rate of reaction.	Particles **collide more frequently** and with **more energy**.
Catalyst	Catalysts **increase** the rate of reaction.	**Lowers** the **activation energy** by providing an **alternate pathway**.

Energy Changes

Reactions can be grouped into two types;

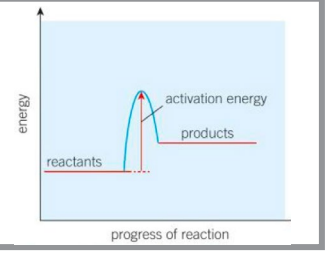
Exothermic

These are reactions that **release thermal energy** to the surroundings.
e.g. Burning, Neutralisation
you observe a **temperature rise.** A use of these is hand warmers.



Endothermic

These reactions **takes in thermal energy** from the surroundings.
e.g. some salts dissolving, thermal decomposition of calcium carbonate
you observe a **temperature drop.** Use of these is sports injury packs.



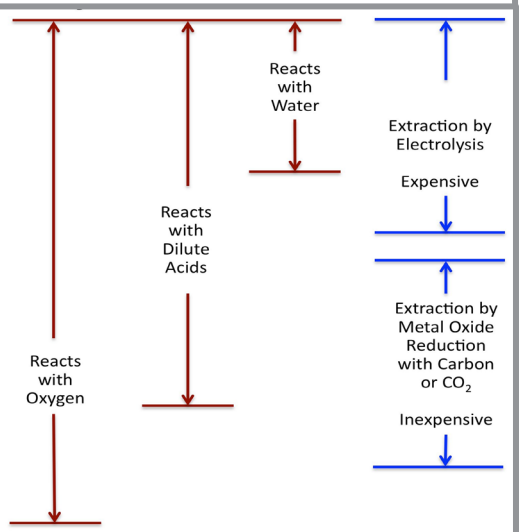
The Reactivity Series

The reactivity series is a list of metals with the most reactive at the top and decreasing reactivity as you go down the list. We can use reactions with water, oxygen or acid to help place them in order. For example: **zinc + acid = small fizz, but potassium + acid = explodes.**

Very Reactive

Very Unreactive

Li	*Lithium*
K	*Potassium*
Ba	*Barium*
Ca	*Calcium*
Na	*Sodium*
Mg	*Magnesium*
Al	*Aluminum*
C	*Carbon*
Zn	*Zinc*
Fe	*Iron*
Ni	*Nickel*
Sn	*Tin*
Pb	*Lead*
H	*Hydrogen*
Cu	*Copper*
Hg	*Mercury*
Ag	*Silver*
Au	*Gold*
Pt	*Platinum*



Carbon and Hydrogen are not metals but are included for reference.

Naming salts

The first part of a salt's name comes from the metal. The second part is determined by the acids e.g.

Sulphuric Acid makes Metal **Sulphates**
Hydrochloric Acid makes Metal **Chlorides**
Nitric Acid makes Metal **Nitrates**

General Equations

For this topic, you need to know some general equations.

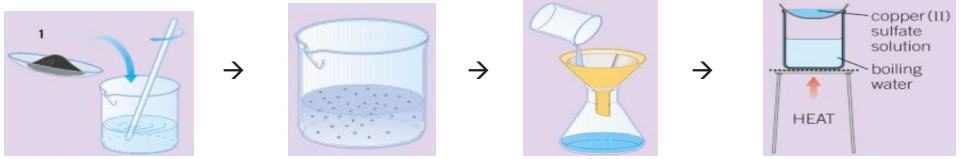
Acid + Metal → Salt + Hydrogen

Acid + Base → Salt + Water

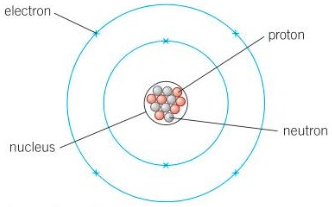
Acid + Carbonate → Salt + Water + Carbon Dioxide

Acid + Alkali → Salt + Water

Making Salts



Add to warm H_2SO_4 → Add CuO in excess → Filter → Evaporate & dry



Atomic structure

Atoms contain sub-atomic particles. **protons**, **neutrons** and **Electrons**. **Protons** and **neutrons** are found in the centre of the atom, called its **nucleus** and **electrons** are found in **energy shells** around the **nucleus**. This **nucleus** is not the same as what is found in plant cells.

Sub-atomic Particle	Mass	Charge
Proton	1	+
Neutron	1	No charge
Electron	1/2000	-

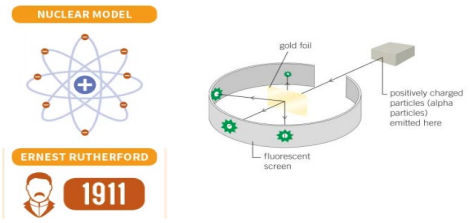
Atomic number

All the atoms of a particular element have the same number of **protons**. For example, Na has eleven **protons** in its nucleus.
The number of **protons** in each atom is called its **atomic number**.

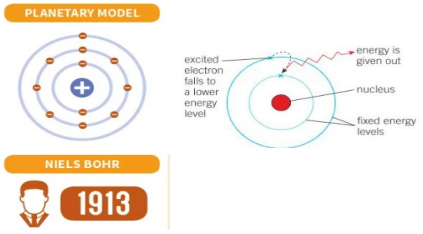
History of the Atom

Dalton: Solid Sphere Model
A solid sphere that is positively charged

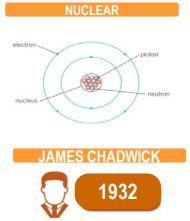
J J Thomson: Plum Pudding Model
A positively charged solid sphere, that has negative electrons scattered through it



Ernest Rutherford: Gold Foil Experiment
Discovered through the gold foil experiment that the atom was mostly made up of empty space, with a positive centre and negative charge around the outside of the atom.



Niels Bohr: Planetary Model
Bohr discovered that electrons have more than one shell, and that electrons can move between the shells based on energy



James Chadwick: Nuclear Model
Chadwick discovered that there was another sub-atomic particle inside the nucleus of. It didn't have a charge, but it was the same size as a proton.

Year 9 Physics: Introduction to Forces Knowledge

Scalars and Vectors

Scalar Quantity: Has a **magnitude** but no direction.

- Speed, time, mass, distance. Will only ever have a value.
- 100kg, 15m, 120s

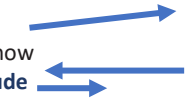
Vector Quantity: Has a **magnitude AND** a **directions.**

- Velocity, acceleration, force, displacement

Can have a **+ve or –ve value**.

- 20m North, +15m/s, 100N left

Representing Vectors:
Arrows are used. They show **direction**.....and **magnitude**



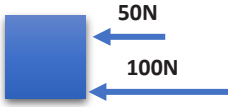
Contact and non-contact Forces

Contact: When two objects interact with each other by touching.
Friction, air resistance, tension, normal contact, reaction.
Non-Contact: When two objects do not touch when they interact.
Magnetism, electrostatic, gravity.

Resultant Force

The **overall force** acting on an object

Add together when in **same direction**



= 150N Left

Subtract when in **opposite direction**

= 50N Left

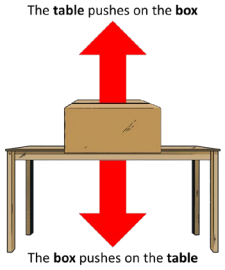
Remember: Force is a **vector**. It needs **magnitude** AND **direction**

Balanced and Unbalanced

Newton's First Law: An object at **rest stays at rest** and an object in **motion stays in motion** with the same speed and in the same direction unless acted **upon by an unbalanced force.**

Forces between objects

Newton's Third Law: Every action has a reaction that is **equal** in size, but **opposite** in direction.

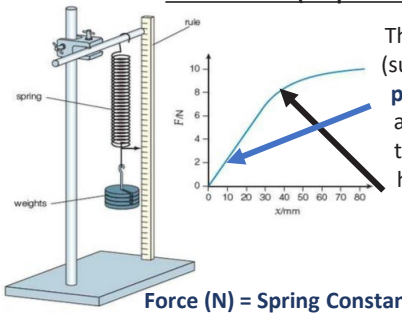


Only apples when looking at two objects interacting

Terminal Velocity

1) At the start, the object **accelerates** downwards due to the **force** of gravity.
2) As the object's **speed increases**, frictional forces such as **air resistance** or drag **increase.**
3) At **terminal velocity**, the **weight** of the object due to gravity is **balanced** by the **frictional forces**, and the resultant force is **zero.**

Hooke's Law (Require Practical)



The **extension** of an object (such as a spring) is **directly proportional** to the **force** applied to it, also long as the **limit of proportional** has not been exceeded.

Force (N) = Spring Constant (N/m) x Extension (m)
(k = spring constant)

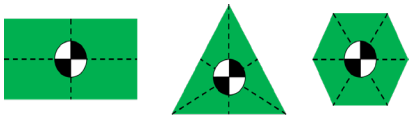
Weight

the force acting on the object mass due to gravity

Weight (N) = mass (Kg) x gravity (N/Kg)

Centre of mass

"The **centre of mass** of an object is the point at which its **mass** can be thought of as being **concentrated**"

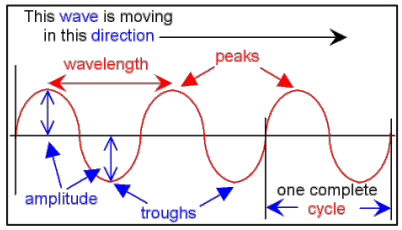


Key Vocabulary	Definition	Contextual Sentence
Displacement	distance in a given direction	The boat had a **displacement** of 120m North
Driving Force	force of a vehicle that makes it move (sometimes referred to as motive force)	The engine provided the **driving force** for the car
Forces	a force (in newtons, N) can change the motion of an object	Weight, friction and air resistance are all examples of **forces**.
Free-body diagram	a diagram that shows the forces acting on an object without any other objects or forces shown	The Physics used a **free body diagram** to show the force acting on a moving car.
Friction	the force opposing the relative motion of two solid surfaces in contact	Ice is slippery as there is very little **friction**.
Magnitude	the size or amount of a physical quantity	The **magnitude** of gravity of Earth 9.8 N/Kg
Newton's First Law	if the resultant force on an object is zero, the object stays at rest if it is stationary, or it keeps moving with the same speed in the same direction	The forces on the accelerating car were unbalanced, which proves **Newton's First Law**.
Newton's Third Law	when two objects interact with each other, they exert equal and opposite forces on each other	**Newton's Third Law** explains why a canon recoils when it is fired.
Resultant Force	a single force that has the same effect as all the forces acting on the object	If 100N acts right on a box, and 20N acts left, the **resultant force** is 80N right.
Scalar	a physical quantity, such as mass or energy, that has magnitude only (unlike a vector which has magnitude and direction)	Speed, mass and distance are all **scalar** quantities.
Vector	a vector is a physical quantity, such as displacement or velocity, that has a magnitude and a direction (unlike a scalar which has magnitude only)	Velocity, weight and displacement are all **vector** quantities.

Year 9 Physics: Waves Knowledge

Transverse Wave

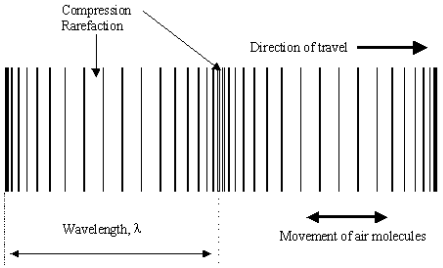
Vibrations of particles are at **right angles** to transfer of energy



Water waves, Light, Radio, Microwaves,, Infrared, Ultra-Violet, X-ray , Gamma, S Waves

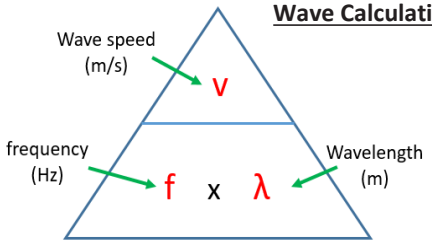
Longitudinal Wave

Vibrations of particles are **parallel** to transfer of energy



Sound, Ultra-sound, P waves (Seismic wave)

Wave Calculations



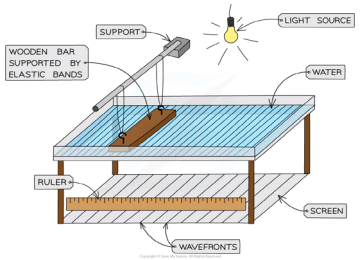
Wave speed (m/s) = Frequency (Hz) x Wavelength (m)

$$f = \frac{1}{T}$$

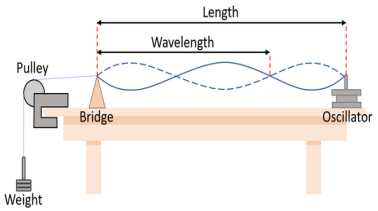
f = frequency
T = Period

Wave Speed (Required Practical)

In a liquid



In a solid



Adjust signal generator to vary **frequency** and **wavelength**. Measure frequency (number of waves per second) and wavelength (Length of wave from two similar points) . Calculate **wave speed** using equation

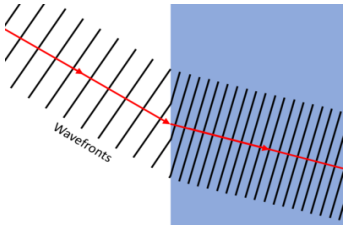
Reflection

When a wave hits a material it will reflect from it.

Angle of incidence = Angle of reflection

Refraction

When a wave moves from one medium to another its direction changes due to a change in speed.
Less dense to **more dense**, **wave slows**, wavelength **decreases**, frequency **remains constant.**



Key Vocabulary	Definition	Contextual Sentence
Amplitude	the height of a wave crest or trough of a transverse wave from the rest position.	The musical note was louder because it had a very large **amplitude**
Compression	squeezing together	The sound wave move trough air as a series of **compressions and rarefactions.**
Echo	reflection of sound that can be heard	The sound wave reflected of the tunnel in the form of an **echo**
Frequency	the number of wave crests passing a fixed point every second	The musical note was high pitched as it had high **frequency**.
Longitudinal waves	waves in which the vibrations are parallel to the direction of energy transfer	Sound and ultra-sound are all examples of **longitudinal** waves.
Mechanical wave	vibration that travels through a substance	Water waves are examples of **mechanical waves**.
Oscillate	move to and fro about a certain position along a line	The particle was made to **oscillate** as the sound wave passed through the air.
Rarefaction	stretched apart	The sound wave move trough air as a series of **compressions and rarefactions.**
Speed	the speed of an object (metres per second) = distance moved by the object (metres) ÷ time taken to move the distance travelled (seconds	The **speed** of sound in air is 330 m/s
Transverse wave	a wave where the vibration is perpendicular to the direction of energy transfer	Microwaves, gamma rays and X-rays are all examples of **transverse waves.**
Vibrate	oscillate (move to and fro) rapidly about a certain position	The ground was made to **vibrate** as the s wave passed through the earth

Year 9 Physics: Introduction to Forces Knowledge

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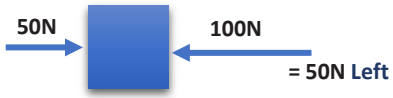

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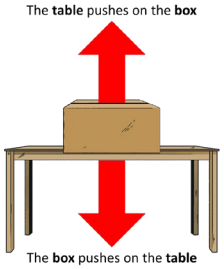

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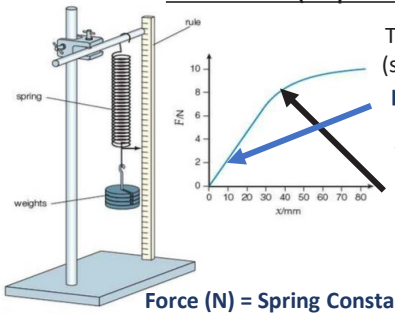

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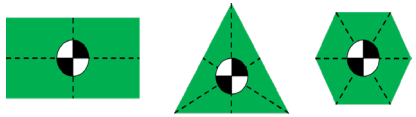

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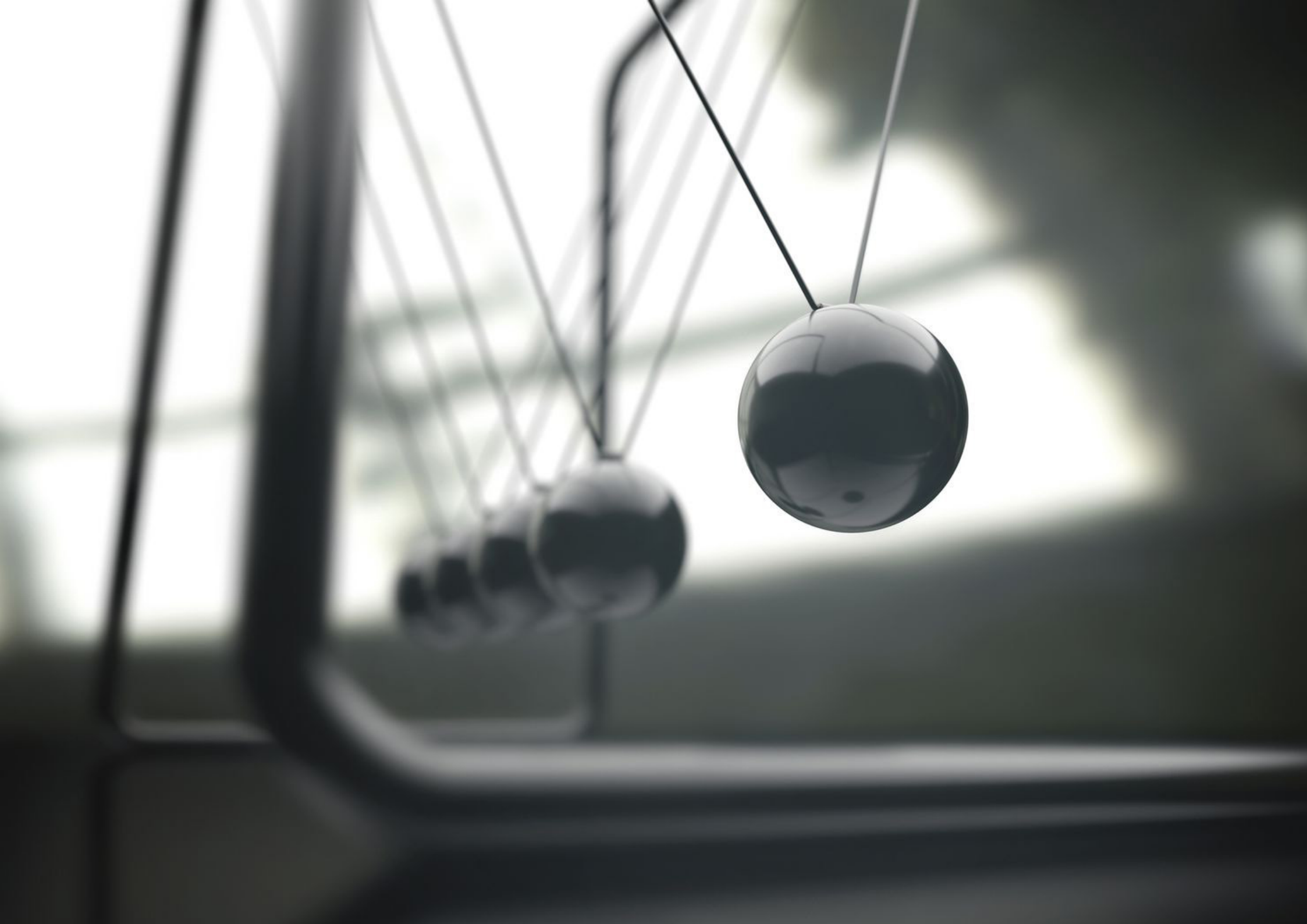


RELIGIOUS STUDIES

Half Term One What is the Holocaust?
1. Why did the Holocaust happen?
2. How did the Holocaust happen?
3. What are the dilemmas, choices, and responses to the Holocaust?
4. Who are the inspirational figures in the holocaust?
5. Can you still believe in God after the holocaust?

1. Why did the Holocaust happen?

The Holocaust was a period in history at the time of World War Two (1939-1945), when millions of Jews were murdered because of who they were. The killings were organised by Germany's Nazi party, led by Adolf Hitler. Jews were the main target of the Nazis, and the greatest number of victims were Jewish. The Nazis believed that Jews were a problem that needed to be removed. Nearly seven out of every 10 Jews in Europe were murdered. Nazis also persecuted people from other minority groups.
Prior to the Holocaust, there were thriving Jewish communities across the world.
The largest population of Jews before the Holocaust was in Eastern Europe, with a community of three million in Poland and two and a half million in Russia. The size of these populations meant Jewish people had a huge contribution to the culture. In Western countries such as Germany many Jews were assimilated into the culture of the country in which they lived, many had sizeable communities with at least 565,000 Jewish people living in Germany.

2. How did the Holocaust happen?

1) As soon as Hitler came into power, he introduced The Nuremberg Laws (1935) that deprived Jewish people of many of their civil rights, for example marriage between Jewish and non-Jewish people was forbidden.

2) On 9 November 1938, Kristallnacht or the 'Night of Broken Glass' took place. Jewish businesses, synagogues and homes were attacked and destroyed. This was a response to the assassination of a German diplomat by a Polish Jewish man in Paris.

3) After the outbreak of World War Two in 1939, the Nazis stepped up the persecution of the Jewish people. Jewish people were taken to over-crowded 'ghettos'. In larger centres, ghettos were shut in by walls, fences or barbed wire. No one could leave or enter without a specific permit. Each community was ordered to set a Judenrat (Jewish Council) which would be responsible for enforcing German orders.

4) After 1941, Nazi death-squads murdered more than a million Jewish people in eastern Europe. In 1942, the Nazi's decided on the 'Final Solution' – the Jewish people were to be taken to camps such as Auschwitz and gassed. Nobody knows how many Jewish people died during the Holocaust, but the usual figure given is 6 million.

3. What are the dilemmas, choices, and responses to the Holocaust?

Certain terms are often used to categorise the behaviour of different people during the Holocaust.
Perpetrator: The person doing an injustice to someone else. Victim The person who is the target of an injustice.
Bystander: The person watching an injustice being done and doing nothing to stop it.
Resister: The person who sees an injustice being done and tries to stop it.
It is however not always possible to place people in one of these categories. It is much more complex. It is also important to consider whether their role was active or passive.

4. Who are the inspirational figures in the holocaust?

As Allied and Soviet troops moved across Europe against Nazi Germany in 1944 and 1945, they encountered concentration camps, mass graves, and other sites of Nazi crimes. The unspeakable conditions the liberators confronted shed full scope of Nazi horrors. 2020 marked the 75th anniversary of the liberation of prisoners from Nazi concentration camps and the end of Nazi tyranny in Europe. After the liberation of the camps many inspiring stories of Jewish people being persecuted demonstrating great courage and bravery emerged. There were similarly many inspiring accounts of those who tried to help Jewish people, even risking their own lives that the world began to learn of.
1) **Maximilliam Kobe**- A Polish Priest who lives during the Second World War. Kolbe used his Church to hide 2000 Jewish people from the Nazis and ran his own radio station speaking against the Nazis in an attempt to stop people supporting them. He was arrested by the German Secret Police and sent to a concentration camp. In July 1941 a man from Kolbe's barracks disappeared, the Nazi commander picked 10 men from the same barracks to be sentenced to death in order to send a warning to other about trying to escape. One of the selected men, Franciszek Gajowniczek said, 'My poor wife! My poor children! What will they do?' Kolbe told them to take him instead.
2) **Ann Frank** who was a young Jewish girl. To escape the Nazis her family went into hiding in an attic. Two other Jewish families joined them meaning there were eight people hiding in one place. She kept a diary which is used to help inspire people through terrible times of injustice and is still used today.

5. Can you still believe in God after the holocaust?

Terrible events call into question if God is real or not.

1) Some people say that if God was real and all-loving, then ***God would not allow such terrible things to happen*** to people.

2) Some would say "it is possible to believe in God after the Holocaust because despite all the sufferings that people endured there were still great testimonies of faith, showing that even when horrible events occur ***people's faith stayed strong***.

3) Others may say that the ***Holocaust is proof that God cannot exist in the form that many believe*** because if God could stop these events, they would argue he would have, thus believing that God does not exist.

Key Terms	Definition	Contextual sentence
Anti-Semitism	Hostility to or prejudice against Jewish people.	Anti-Semitism was shown throughout Nazi Germany.
Prejudice	Preconceived opinion that is not based on reason or actual experience.	Jewish people lived a life full of Prejudice.
Discrimination	The unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, sex, or disability:	Jewish people faced discrimination from the Nazis.
Persecution	Hostility and ill-treatment, especially because of race or political or religious beliefs; oppression:	Persecution is a form of discrimination.
The Ghettos	A part of a city, especially a slum area, occupied by a minority group or groups.	Jewish people were forced to live in The Ghettos.
Nuremburg Laws	Laws that were depriving Jews of rights, designed by Adolf Hitler and approved by the Nazi Party	The Nuremburg Laws made Jewish people second class citizens.
Concentration Camps	A place in which large numbers of people, especially political prisoners, or members of persecuted minorities, are deliberately imprisoned in a relatively small area	Auschwitz was a concentration camp.
Genocide	The deliberate killing of a large group of people, especially those of a particular nation or ethnic group.	The systematic killing of the Jewish people is a Genocide.
Omnipotent	Meaning all powerful, usually used to describe the Abrahamic God.	God is considered Omnipotent and can do anything.
Omnibenevolent	Meaning all loving, usually used to describe the Abrahamic God.	God is considered Omnibenevolent and loves everyone.

Half Term One Are Religion and Science compatible?
1. What is the difference between science and religion?
2. How did the universe begin?
3. How did human life begin?
4. Are we alone in the universe?
5. Do miracles happen?
6. Can religion and science work together?
7. Review and assessment

1. What is the difference between religion and science?

Many people assume that religion and science are opposites. Both science and religion seek to answer questions about the universe and its origins but may reach different conclusions because of their methods of establishing truth.
Science propose a hypothesis and then seek to prove it by observation and experiments. Science search for empirical evidence to support their theories about the origins of the universe. Many religions use revealed knowledge in holy books as evidence for their beliefs about the origins of the universe.
Galileo is an example of somebody who felt the conflict between religion and science. He was sent to prison for scientific belief that the sun was at the centre of the solar system.
In the 1700s a period began known as the Enlightenment or Age of Reason occurred. During this period, thinkers prioritised reason and science as the method for gaining knowledge.

2. How did the universe begin?

In Christianity, the first book of the Bible, Genesis, it explains how God made the world in six days. Some Christians believe this is the literal truth and are called creationists.
In Islam, Muslims believe the universe was made by God out of nothing in six periods of time. There is no indication of what is made on each day like in the Bible.
In Hinduism, a lotus flower grew from Lord Vishnu's novel with Brahma sitting on it. Brahma separated the flower into three parts; the Heavens, the Earth, and the Sky.
Science believe the universe began through the Big Bang. The theory states that about 13.7 billion years ago all the matter in the Universe was concentrated into a single incredibly tiny point. This began to enlarge rapidly in a hot explosion, and it is still expanding today.
Many would argue the Big Bang is not compatible with religious stories of how the universe began. In Christianity and Islam, they believe the universe happened as a result of the deliberate intention of God. However according to the Big Bang, the existence of the universe is an accident. However, many Christians who do not interpret the creation story literally may say God chose the Big Bang as the method to create the universe. Many Hindus believe the Big Bang theory offers no challenge to their belief in creation. It does not deny the position of Brahman, nor the belief in the continual cycle of creation, preservation, and destruction.

3. How did human life begin?

In Christianity Adam was made in God's image from 'the dust of the ground' when God breathed life into him. Eve was created out of one of Adam's ribs to provide company and help for Adam.
In Islam God created Adam as the first man by moulding him from clay and breathing life into him. God created Eve (Hawwa) from the same soul as Adam and she became his wife.
In the Chinese creation myth humans are created from the parasites on Pan Ku's body.
Science believe life on earth began through evolution. Charles Darwin put forward the theory that all living creatures that exist today, including human beings, have evolved over a period of perhaps millions of years, from more primitive life forms to how they are today by a process of natural selection.
Some Christians and Muslims believe evolution is not compatible with their belief that God made the Earth and created all living things, as they knew them. However, some Christians put forward the theory of intelligent design, that everything is planned and designed by God, and that each change that takes place is the direct working of God in creation. Some Muslims argue the theory of evolution is correct for all living things except humans.

4. Are we alone in the universe?

One 2016 study estimated that the observable universe contains two trillion- or two million million galaxies. The sheer size of the universe makes many believe that we cannot be alone. The Search for Extra-Terrestrial Intelligence (SETI) uses a vast array of radio-telescopes to scan for signals from outer-space. Scientists, with the help of NASA's Kepler Telescope (a planet-hunting instrument specifically designed to search for planets orbiting distant stars), have estimated there are 500,000 planets that could support life.
The term to refer to a life form not from earth is extra-terrestrial.
Many religions such as Christianity and Judaism may question the possibility of extra-terrestrial life as they believe human beings are purposefully created by God and occupy a privileged position in relation to other creatures. However, both Jews and Christians, claim that God has given names to all the stars. According to the Talmud, God spends his night flying throughout 18,000 worlds.

5. Do miracles happen?

A miracle is an event that breaks the laws of science and is the result of the direct intervention of God. There are many recorded miracles recorded in the Bible such as Jesus walking on water, raising people from the dead or turning water into wine. Some Christians believe there is evidence of modern miracles in Lourdes, Fatima and in the work of preachers such as Benny Hinn. Christians believe miracles are a sign of God's omnipotence and omnibenevolence on earth. However, many people may question whether miracles are coincidence and why they are more likely to happen to religious people. Early thinkers in the Enlightenment such as David Hume would also question the testimony of those who claim to have witnessed a miracle. He would say no person's testimony is reliable enough to convince him a miracle has taken place.

6. Can religion and science work together?

Many would say that science and religion go hand in hand rather than oppose each other. Science shows the 'amazing world God has created and the beauty and glory of God himself.' Science and religion working together can help humanity to understand more about the world. There are plenty of religious scientists who have made ground-breaking discoveries, for example Francis Collins who has helped to complete research into human DNA and gene sequences and Isaac Newton who saw God as essential to the existence of space.

Key term	Definition	Contextual Sentence
Belief	Believing that something exists or is true.	A belief in God is a key part of many religions in the world today.
Truth	Accepting that something is real or true.	Christians and scientists both believe they know the truth of how the universe began.
Revelation	When something is hidden and becomes known about God.	The Revelation of God is in the Bible.
Empirical	Using evidence such as observation or experience.	Empirical evidence is important in science.
Theory	An explanation of how things happen or work.	The Big Bang is a scientific theory.
Enlightenment	The Age of Reason when science and reason is placed above religion.	David Hume is a key scholar from the Enlightenment.
Universe	The whole of all matter, energy, planets, galaxies, and space.	Science explains the origins of the universe.
Creationism	The belief that God made the world in six days.	Creationism is a literal interpretation of the Bible story.
Literal	Accepting the ordinary or exact meaning of words.	Creationists have a literal interpretation of the Bible.
Symbolic	Not literally true but representing something deeper.	Some Christians believe the creation story is symbolic.
Myth	A story that has no evidence that is passed on to future generations.	There are many myths to explain how the world began.
Big Bang	The scientific theory that the universe began as a result of a cosmic explosion.	Many people believe in the big bang today.
Evolution	The theory that describes how life forms developed from simpler forms by changes that took millions of years.	Charles Darwin found evidence for the theory of evolution.
Extra-terrestrial	Existing or coming from a place other than planet Earth.	Some people believe there is extra-terrestrial life.
Miracle	An event that breaks the laws of science that people believe is caused by God.	A miracle can happen at Lourdes.

Year 9 History - Spring Term- USA as a Superpower

HISTORY

At the end of the nineteenth century, the USA had an Open Door policy which encouraged immigration.
By 1920, more than 40 million people had arrived. As a result, there was a mixture of people from different races, cultures and religions living in America.

The races living in America during this period included:
- Native Americans;
- Black Americans;
- Europeans;
- Hispanics;
- Asians.

Reasons for people coming to the USA

A combination of push and pull factors made people emigrate to the USA. The push factors made people want to leave their own countries, and the pull factors attracted them to the USA. The main reasons were:
- escaping from poverty in their own country;
- escaping from political persecution;
- the religious tolerance
- a plentiful supply of land and property;
- The possibility of jobs with higher wages
- the adventure of going to a new country;.

US Congress passed three laws to restrict immigration and each law in turn was more severe than the previous one.
Literacy Test, 1917: immigrants had to pass a series of reading and writing tests. Many of the poorer immigrants, especially those from eastern Europe, had received no education and therefore failed the tests and were refused entry.
The Emergency Quota Act, 1921: this law restricted the number of immigrants to 357,000 per year, and also set down a quota. Only 3 per cent of the total population of any overseas group already in the USA in 1910 could come into America after 1921. This quota system favoured immigration from Britain and western Europe because of the large numbers of these groups already in the USA.
The National Origins Act, 1924: This law reduced the maximum number of immigrants to 150,000 per year and cut the quota to 2 per cent, based on the population of the USA in 1890. This act, like the previous one, restricted the number of southern and eastern Europeans immigrants. It also prohibited immigration from Asia. However, it did not apply to immigrants from Mexico because they were labour for the Californian farmers. The President, Calvin Coolidge, said, "America must be kept for the Americans". America's 'open door' was now firmly closed to many.

Term	Definition
American Bill of Rights	The first ten rights that make up the American Constitution.
Communism	The ideas of Karl Marx who supported a system of rule where industries were run by the government for the good of the people.
Congress	The legislative body of the United States government, made up of the Senate and the House of Representatives.
Constitution	A document outlining the rules by which a country is run.
Immigration	The action of coming to live permanently in another country
Open Door policy	Policy of accepting immigrants from various countries.
Quota	A fixed or limited number of goods or people allowed.
Xenophobia	The dislike of, or prejudice against people from other countries

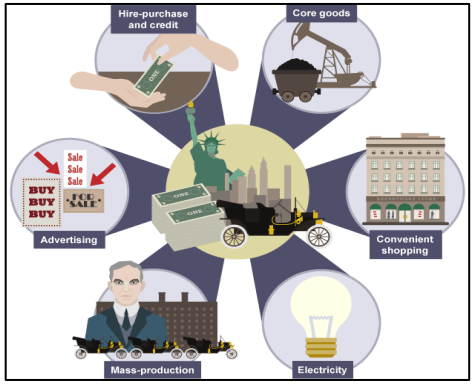
The 1920s overview

Although the USA did not enter World War One until April 1917, the conflict cast a shadow over American society. There was a brief economic recession at the start of the 1920s, but, as the decade moved on, the economy boomed and America began the age of consumerism - many Americans bought cars, radios, fridges etc. Major cities like New York and Chicago grew rapidly and the building of skyscrapers like the Empire State Building, seemed to show the self-confidence of American society.

The 1920s were prosperous for some. At the same time, many Americans wanted to enjoy themselves by perhaps listening to the new jazz music or doing the new dances such as the Charleston. Crowds flocked to watch film stars like Charlie Chaplin and baseball stars like Babe Ruth. The emphasis on having fun and spending money has led to the 1920s being called the Roaring Twenties.

However, for many Americans, the 1920s was a decade of poverty. Groups such as African-Americans, women and farmers did not enjoy the prosperity of the Roaring Twenties. More than 40% of Americans lived just below the poverty line. Life was particularly hard for African-Americans in the Deep South states where many black people endured a combination of poverty and racism. Although some women were able to enjoy more independence and wear the latest fashions, the reality was that most women were poorly paid and were employed in roles such as cleaners or waitresses.

Causes of the boom



Henry Ford

Henry Ford (1863-1947) built his first gasoline-powered horseless carriage, the Quadricycle, in the shed behind his home. In 1903, he established the Ford Motor Company, and five years later the company rolled out the first Model T. In order to meet overwhelming demand for the revolutionary vehicle, Ford introduced revolutionary new mass-production methods, including large production plants, the use of standardized, interchangeable parts and, in 1913, the world's first moving assembly line for cars. Enormously influential in the industrial world, Ford was also outspoken in the politics. Ford drew controversy for his pacifist stance during the early years of World War I and earned widespread criticism for his anti-Semitic views and writings.

Key word	Definition
adverts	Use of posters etc to inform people about the new goods.
assembly line	A series of workers and machines in a factory by which identical items are progressively assembled.
boom	A period of prosperity in the economy. The economy was doing well and many people benefited.
hire-purchase and credit	A way of borrowing money. The ability to get the goods and pay back over a period of time.
laissez-faire	Government policy of interfering as little as possible in the economy.
mass production	A method of producing goods on a large scale and quickly.

Year 9 History - Spring Term- USA as a Superpower

The changing role of American women in the 1920s

1. The changing role of women was a result of the work they did during the war.
2. The number of working women increased by 25%.
3. In 1920, all women were given the right to vote.
4. 'Flappers' smoked in public, danced the new dances, and were sexually liberated.
5. Women wore clothing more convenient for activity and stopped wearing long skirts and corsets.
6. Divorce was made easier and the number of divorces doubled - women were not content just to stay at home and put up with bad husbands.
7. But most women were still housewives and were not as free as their men

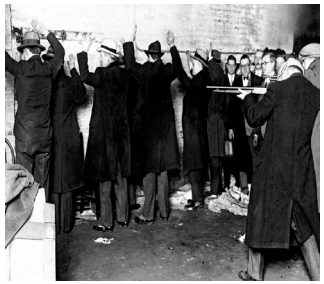
African Americans 1920s

Key word	Definition
American Civil War	A civil war that took place between 1861-1865 in the United States. Eleven Southern states (known collectively as the Confederacy) in which slavery was still legal wanted to leave the United States of America.
ghetto	A poor part of a city that is usually occupied by a minority group, sometimes purpose built.
Jim Crow laws	The names of the laws that introduced segregation in the south (the laws which kept black and white people apart).
Rope Law	Members of the Ku Klux Klan killed black people by hanging them without trial (lynching) and often took the law into their own hands.
segregation	To separate people from the main group because of their beliefs or the colour of their skin.
The Ku Klux Klan	A group of White Anglo-Saxon Protestants who used violence against black Americans and others.

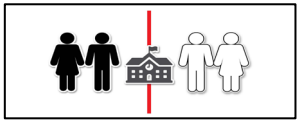
Prohibition

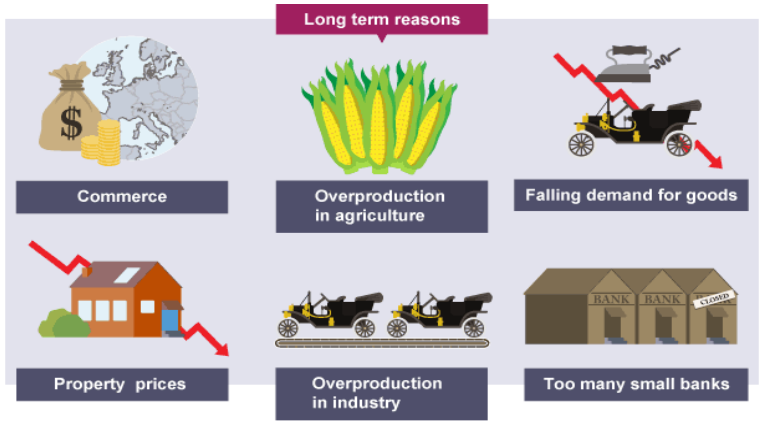
The 18th Amendment to the U.S. Constitution–which banned the manufacture, transportation and sale of intoxicating liquors–ushered in a period in American history known as Prohibition. Prohibition was ratified by the states on January 16, 1919 and officially went into effect on January 17, 1920, with the passage of the Volstead Act.

Despite the new legislation, Prohibition was difficult to enforce. The increase of the illegal production and sale of liquor (known as "bootlegging"), the proliferation of speakeasies (illegal drinking spots) and the accompanying rise in gang violence and other crimes led to waning support for Prohibition by the end of the 1920s. In early 1933, Congress adopted a resolution proposing a 21st Amendment to the Constitution that would repeal the 18th. The 21st Amendment was ratified on December 5, 1933, ending Prohibition



The Wall Street Crash - 29th October, 1929





Year 9 History Spring Term- Democracy and Dictatorship

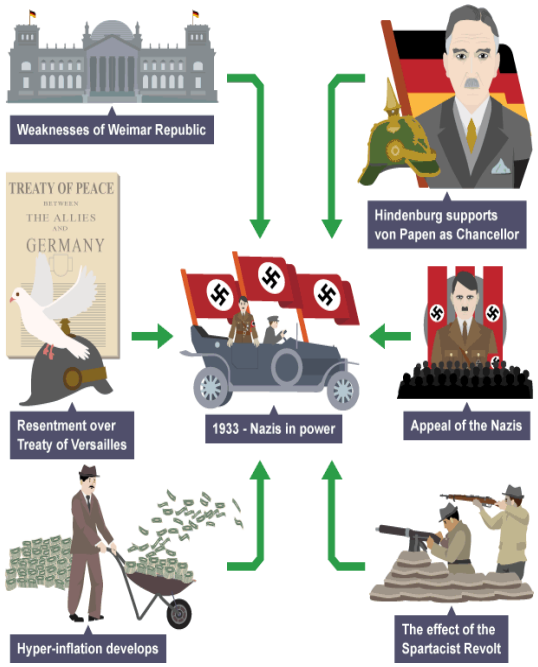
Key word	Definition
Democracy	A form of government where the people share in deciding how things are run.
Dictatorship	A form of government where the leader has total power.

The Rise of the Nazi Party

In the early 1930s, the mood in Germany was grim. The worldwide economic depression had hit the country especially hard, and millions of people were out of work. Still fresh in the minds of many was Germany's humiliating defeat fifteen years earlier during World War I, and Germans lacked confidence in their weak government, known as the Weimar Republic. These conditions provided the chance for the rise of a new leader, Adolf Hitler, and his party, the National Socialist German Workers' Party, or Nazi party for short.

Hitler was a powerful and spellbinding speaker who attracted a wide following of Germans desperate for change. He promised the disenchanted a better life and a new and glorious Germany. The Nazis appealed especially to the unemployed, young people, and members of the lower middle class (small store owners, office employees, craftsmen, and farmers).

The party's rise to power was rapid. Before the economic depression struck, the Nazis were practically unknown, winning only 3 percent of the vote to the Reichstag (German parliament) in elections in 1924. In the 1932 elections, the Nazis won 33 percent of the votes, more than any other party. In January 1933 Hitler was appointed chancellor, the head of the German government, and many Germans believed that they had found a saviour for their nation.



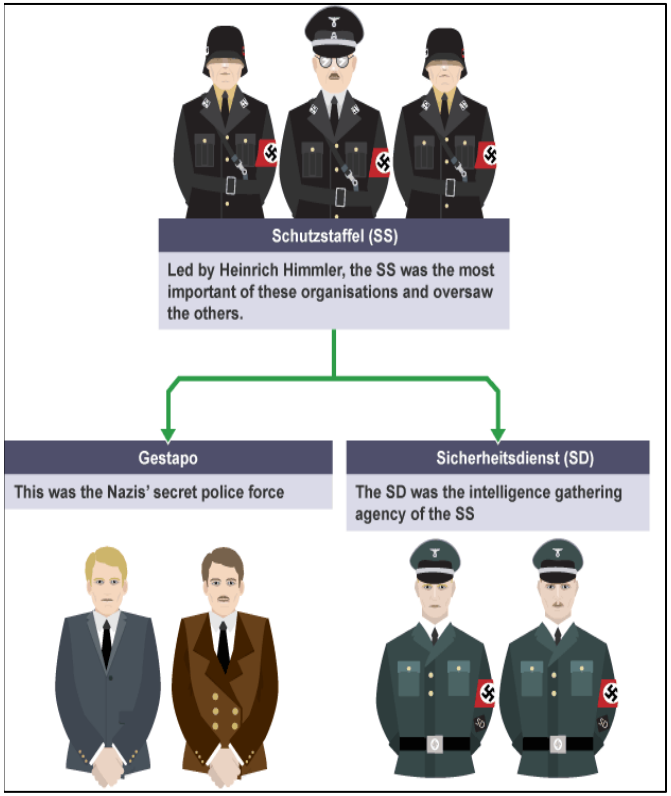
Key word	Definition
Aryan	A person of European descent - not Jewish - often with blond hair and blue eyes. The Nazis viewed Aryans as the superior human race.
autarky	A closed economy. Hitler's ideology that wanted Germany to cease trade with the outside world and rely entirely on its own resources.
autocracy	When one person holds all the power.
Communist	Supporters of the communist movement or party.
constitutional monarchy	A form of government where the monarch is head of state, but the law-making process is undertaken by an elected government.
Führer	Leader.
hyperinflation	Very rapid and high increase in the level of prices, combined with a fall in the value of money.
industrialisation	When a country's economy moves from being based on farming to being based on industry.
Kaiser	Germany's king; Kaiser Wilhelm II.
League of Nations	An international organisation where the leaders of countries could settle problems in the hope that they could thus avoid wars.
rearmament	Manufacturing arms and increasing the army.
Reich	German word meaning 'realm', used to describe Germany as a country.
Reichstag	The name of Germany's parliament.
reparation	Monetary compensation from an individual, group or state to compensate victims.
SA	Also known as Storm Troopers or Brown shirts. A military style organisation of the Nazi party formed in 1921 under Hitler.
Treaty of Versailles	The peace treaty signed by the Allies and Germany at the end of the First World War, on 28 June 1919.

July 1921 Adolf Hitler becomes chairman of the Nazi party.	**1923** Germany suffers from hyperinflation, causing huge social and economic problems	**November 1923** Failed Munich Putsch led by Adolf Hitler	**February 1924** Adolf Hitler sentenced to five years in prison for his role in the putsch.	**May 1924** The Nazi party begins to make political gains winning 32 seats in the Reichstag	**24th December 1924** Adolf Hitler released early from prison where he wrote Mein Kampf	**29th October 1929** The Wall Street Crash
14th September 1930 Nazis and Communists make major gains in elections	**February 1932** Unemployment peaks at 6,128,000	**10th April 1932** Hindenburg defeats Hitler for the Presidential elections	**31st July 1932** Nazis become largest party in the Reichstag	**13th August 1932** Hindenburg rejects Hitler's demand to be made Chancellor	**30th January 1933** Hitler appointed Chancellor by Hindenburg	**1934** Hitler becomes Fuhrer after the death of Hindenburg

Year 9 History - Spring Term- Nazi Control

The Police State

Key Word	Definition
Schutzstaffel (SS)	led by Heinrich Himmler, the SS was the most important of these organisations and oversaw the others. Initially set up as Hitler's personal bodyguard service, the SS was fanatically loyal to the Führer. It later set up concentration camps where 'enemies of the state' were sent.
Gestapo	this was the Nazis' secret police force. Its job was to monitor the German population for signs of opposition or resistance to Nazi rule. It was greatly helped by ordinary German people informing on their fellow citizens.
Sicherheitsdienst (SD)	this was the intelligence gathering agency of the SS. It was responsible for the security of Hitler and other top Nazis and was led by Himmler's right hand man, Reinhard Heydrich



Control of the Church

Nazi Protestants set up the **Reich Church** in 1933 under Nazi Bishop Ludwig Muller It aimed to unite all protestants in one church. Bible replaced by Mein Kampf and the swastika replaced the cross Only Nazi priests allowed	The Concordat is signed between the Nazis and the Pope in July 1933. It agreed that Hitler would not interfere with the Church, if the Catholics stayed out of politics.	In 1937, the Pope spoke out against the Nazis. 400 priests were sent concentration camps as a result.	From 1938, Catholic schools and teaching was attacked. Priest banned from teaching in schools 1938 Church Schools closed in 1939 RE banned in schools in 1939
<u>The German Faith Movement</u> In 1934, Nazis set up the German Faith Movement It was a non Christian church which promoted Nazi ideology.	Crucifixes banned in Catholic Churches 1934 Catholic Youth Groups banned in 1936	Hitler set up the '*Ministry of Church Affairs*' in 1935 to take control back from Catholics and Protestants.	In 1934 Protestant Martin Niemoller set up Pastors' Emergency League to oppose Nazism and Hitler. He was arrested in 1937 and sent to a concentration camp for 7 years.

Propaganda

Type	Influence of the Nazi party
Art	The Weimar period had seen a flourishing of German art, much of which was abstract. Hitler saw this modern art as 'degenerate' and over 6500 works of art were removed from display across Germany. Hitler encouraged 'Aryan art' instead, which showed the physical and military power of Germany and the Aryan race.
Literature	The Nazis infamously organised mass book burnings in 1933, which saw mostly Jewish authors' works ceremonially destroyed.
Theatre	Works by certain playwrights were banned. Nazi-produced political plays and musicals were not very popular so the regime allowed classic plays by the likes of Shakespeare to be performed.
Film	Films were popular forms of entertainment but Goebbels saw them as a form of escapism for Germans. Directors such as Leni Riefenstahl created patriotic films such as Triumph of the Will (1935
Music	In classical music, works by Jewish composers like Mendelssohn and Mahler were banned and the works of the German composer Wagner were promoted, gaining huge popularity.

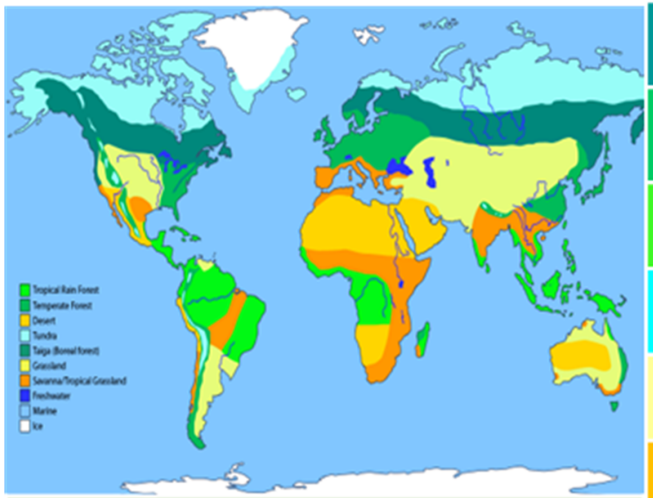
GEOGRAPHY

Regenerating places and Ecosystems Tier 3 Vocabulary

Key Vocabulary	Definition	Contextual Sentence
Ecosystem	An ecosystem is a community of living organisms (plants and animals) in a particular area.	An example of an **ecosystem** is a pond.
Food chain	A food chain shows the transfer of energy from one organism to another.	A simple way to show how energy is lost is by looking at **food chains**.
Food web	A food web consists of all the different food chains together in a single ecosystem.	A complex way to show how plants and animals interact within an ecosystem is by looking at **food webs**.
Producer	A producer is an organism that creates its own food or energy from the sun, through photosynthesis.	A **producer** such as grass would make its energy through the sun by photosynthesis.
Consumer	A consumer is an organism that feeds on plants or other animals for energy.	A fox is a **consumer** as they eat other organisms.
Biome	Large scale ecosystem.	An example of a **biome** is a desert or tropical rainforest.
Biotic	Living organisms (Plants, animals, bacteria).	Plants and animals within the rainforest are living **biotic** factors.
Abiotic	Non-living organisms (Soil, water, atmosphere).	Non-living components such as soil and water are **abiotic** factors.
Regeneration	The process of improving areas that are in decline, focusing on social, economic, and environmental aspects.	The **regeneration** of the Albert Docks in Liverpool transformed the area from abandoned warehouses into a thriving tourist destination.
Deindustrialisation	The decline of industry in a region, often leading to economic and social problems.	The closure of the steel factories led to **deindustrialisation** in the town, causing high unemployment and urban decline.
Sustainability	meeting the needs of the present without compromising the ability of future generations to meet their own needs.	The new shopping centre was designed with **sustainability** in mind, using solar panels and rainwater collection systems to reduce its environmental impact.
Urban	Built up areas: towns and cities.	**Urban** areas like London are characterized by tall buildings, busy streets, and a wide variety of jobs and services.
Infrastructure	The physical structures and facilities (e.g., roads, bridges, housing) needed for a functioning urban area.	The government invested in new **infrastructure**, such as roads, bridges, and public transport, to support the growing population.
Gentrification	The process of improving an area to attract wealthier residents, sometimes displacing existing communities.	The **gentrification** of the old neighbourhood brought new cafes and art galleries, but many original residents could no longer afford to live there.
Brownfield site	Land previously used for industrial purposes, often targeted for redevelopment during regeneration projects.	The old factory site, now a **brownfield site**, is being cleared to make way for a new housing development.
Greenfield sire	A greenfield site is a piece of undeveloped land, often in rural or suburban areas, that has not been previously built on.	The council approved the construction of a new school on a **greenfield site** just outside the village.

Biomes

A biome is a **large geographical area of distinctive plant and animal groups,** which are adapted to that particular environment. The climate and geography of a region determines what type of biome can exist in that region.



Coniferous forest
Deciduous forest
Tropical rainforests
Tundra
Temperate grasslands
Tropical grasslands
Hot deserts.

The **most productive biomes** – which have the greatest biomass- grow in climates that are **hot and wet.**

Biome's climate and plants

Biome	Location	Temperature	Rainfall	Plants	Animals
Tropical rainforest	Centred along the Equator.	Hot all year (25-30°C)	Very high (over 200mm/ year)	Tall trees forming a canopy; wide variety of species.	Greatest range of different animal species. Most live in canopy layer
Tropical grasslands	Between 5°- 30° north & south of Equator.	Warm all year (20-30°C)	Wet + dry season (500-1500mm/ year)	Grasslands with widely spaced trees.	Carnivores dominate such as gazelles and zebra's.
Hot desert	Along the tropics of Cancer and Capricorn.	Hot by day (over 30°C) Cold by night	Very low (below 300mm/ year)	Lack of plants and few species; adapted to drought.	Many animals are small and nocturnal: except for the camel.
Temperate forest	Between 40°-60° north of Equator.	Warm summers + mild winters (5-20°C)	Variable rainfall (500-1500m / year)	Mainly deciduous trees; a variety of species.	Animals adapt to colder and warmer climates. Some migrate.
Tundra	Far Latitudes, 65° north and south of Equator	Cold winter + cool summers (below 10°C)	Low rainfall (below 500mm/ year)	Small plants grow close to the ground and only in summer.	Low number of species. Animals such as moose and reindeer.
Coral Reefs	30° north – south of Equator in tropical waters.	Warm water all year round with temperatures of 18°C	Wet + dry seasons. Rainfall varies greatly .	Small range of plant life which includes algae and sea grasses.	Dominated by polyps and a diverse range of fish species.

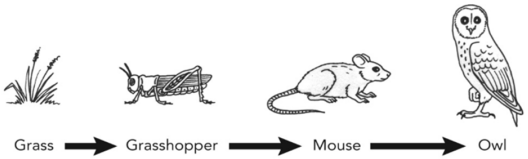
Tropical Rainforest Biome

Tropical rainforest cover about **2 per cent** of the Earth's surface yet they are home to **over half of the world's plant and animals.**

Distribution of Tropical Rainforests

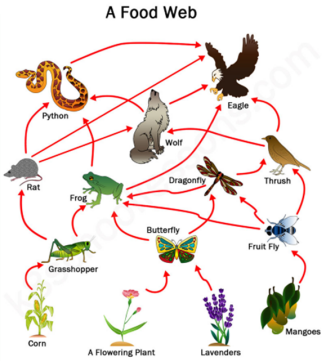
Tropical rainforests are **centred along the Equator** between the Tropic of Cancer and Capricorn. Rainforests can be found in South America, central Africa and South-East Asia. **The Amazon** is the world's largest rainforest and takes up the majority of northern South America, encompassing countries such as Brazil and Peru.

Food chains and food webs



Food chains show the transfer of energy from one organism to another. We start off with the **producer** which is a plant and they get their energy from the sun through photosynthesis. **Consumers** are organisms that eat the producers.

Food webs consists of all the different food chains together in a single ecosystem. It shows all the organisms in one ecosystem.



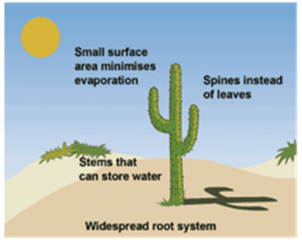
Desert biome

Distribution of the world's hot deserts

Most of the world's hot deserts are found in the **subtropics** between **20 degrees and 30 degrees north & south** of the Equator. The **Tropics of Cancer and Capricorn** run through most of the worlds major deserts.

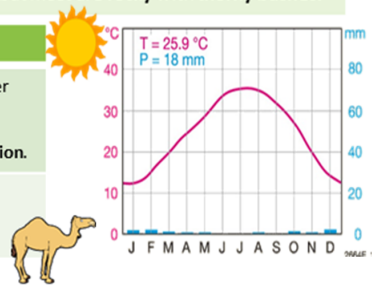
Major characteristics of hot deserts

- **Aridity** – hot deserts are extremely dry, with annual rainfall below **250 mm.**
- **Heat** – hot deserts rise over **40 degrees.**
- **Landscapes** – Some places have dunes, but most are **rocky** with **thorny bushes.**



Adaptations to the desert

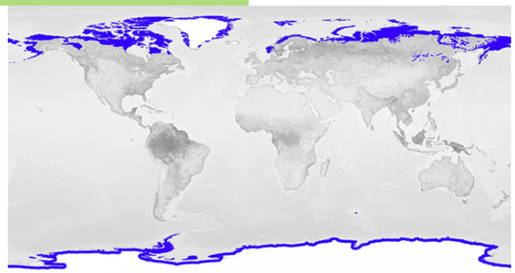
Cactus	• **Large roots** to absorb water soon after rainfall. • **Needles** instead of leaves to reduce surface area and therefore **transpiration.**
Camels	• Hump for storing **fat (NOT water).** • **Wide feet** for walking on sand. • **Long eyelashes** to protect from sand.



Sustainability refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. It involves balancing environmental protection, social equity, and economic growth.

Tundra biome

The tundra is the coldest of the biomes. It also receives low amounts of precipitation, making the tundra similar to a desert. Tundra is found **in the regions just below the ice caps of the Arctic, extending across North America, to Europe, and Siberia in Asia**.

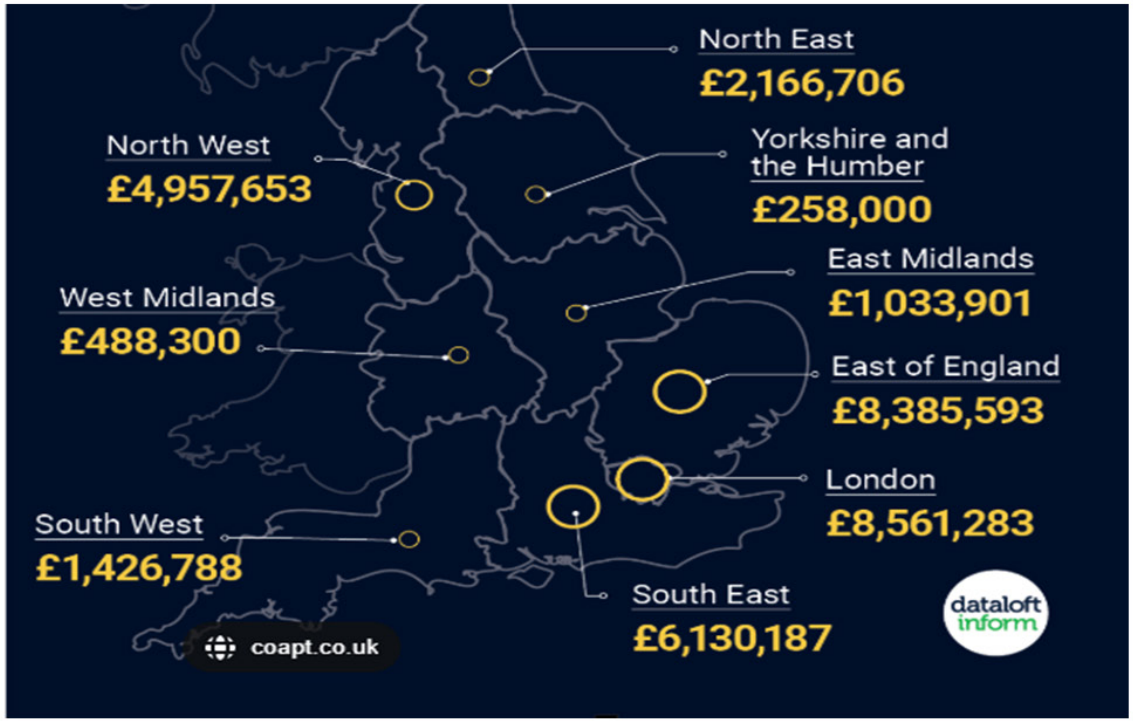


Gentrification

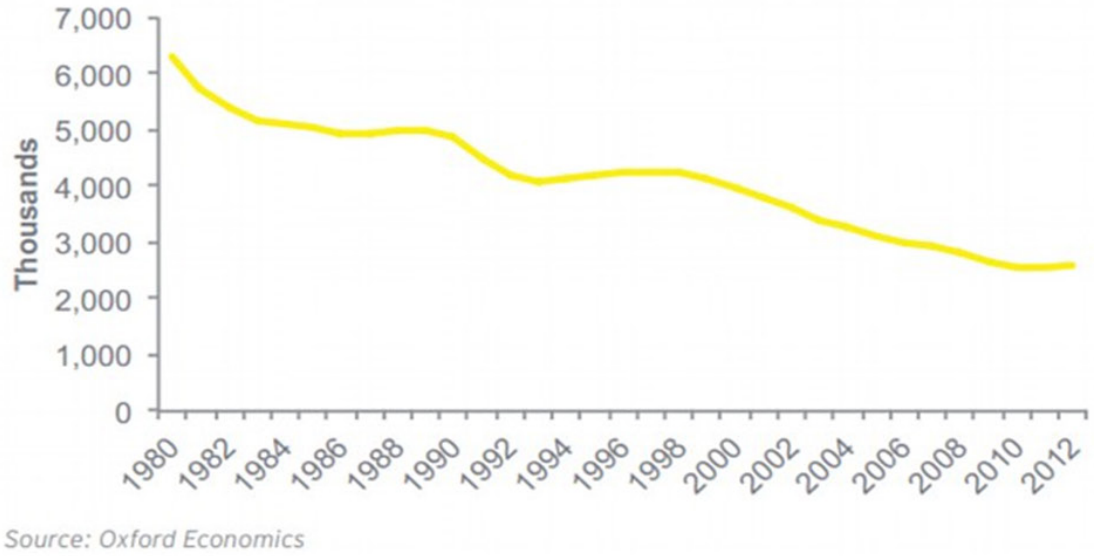
Gentrification is the process of changing an urban neighbourhood from mostly low-income, rented housing to a neighbourhood that is mostly middle-class, with homes owned by the people living in them.

It is usually led by individuals rather than the government, but it can sometimes happen alongside urban regeneration projects.

Regional Government Funding for Regeneration Projects 2022



Employment in UK manufacturing, 1980-2012



Source: Oxford Economics

The Albert Docks Before Regeneration

The Albert Docks Before Regeneration

Employment in UK manufacturing, 1980-2012

Between 1980 and 2012, many manufacturing jobs in the UK were lost due to factors like cheaper labour abroad, new technology, and a shift towards service industries like finance and retail. This led to deindustrialisation in some areas, particularly areas in the north.

Spanish: Knowledge Organiser Year 9 Term 2

Unit 2: Me, my family and friends					
1.1 La familia- *Family*		**1.2 Las descripciones** *Descriptions*		**1.3 El carácter** *Personality*	
el padre	the father/dad	alto/a	tall	simpático/a	kind/ nice/ pleasant
la madre	the mother/mum	bajo/a	short	divertido/a	fun
los padres	the parents	gordo/a	fat	gracioso/a	funny
el hermano	the brother	delgado/a	thin	serio/a	serious
la hermana	the sister	flaco	skinny	tímido/a	shy
los hermanos	the siblings	guapo/a	good-looking	maleducado/a	rude
el abuelo	the grandad	feo/a	ugly	extrovertido/a	extroverted/ outgoing
la abuela	the grandmother	es	he/she/it is		
el hijo	the son	son	they are	introvertido/a	introverted/ shy
la hija	the daughter	tiene	he/she /it has	antipático/a	unpleasant
los hijos	the children	tienen	they have	agresivo/a	aggressive
el tío	the uncle	el pelo	hair	aburrido/a	boring
la tía	the auntie	pelirrojo	ginger	perezoso/a	lazy
el primo	the cousin (m)	rubio	blond	molesto/a	annoying
la prima	the cousin (f)	castaño	brown/ chestnut	egoísta	selfish
los primos	the cousins	largo	long	triste	sad
el sobrino	the nephew	corto	short	inteligente	intelligent/clever
la sobrina	the niece	liso	straight	orgulloso/a	proud
hay	there is/are	ondulado	wavy	hablador/a	chatty
tener	to have	rizado	curly	fuerte	strong
ser	to be	calvo	bald	alegre	happy/ cheerful
llamarse	to be called	los ojos	eyes	agradable	pleasant
		azules	blue	ambicioso	ambitious
		marrones	brown	**1.4 las Relaciones**	**Relationships**
		verdes	green	Llevarse	To get on
		muy	very	Me llevo….. con	I get on ……. with
		bastante	quite	bien	well
		un poco	a little (bit0	fenomenal	great/fantastic
				mal	badly

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1.5 La amistad	*Friendship*	**1.6 ¡Te he dicho que no!**	I said no!	**Gramática:** key verbs in the present tense
Podemos me hace reír sería tendría debo admitir que amistoso grosero	we can he/she makes me laugh he/she/ it would be he/she /it would have I have to admit that friendly rude	Discuto (con) me peleo no aguanto a somos incompatibles grito a me enfado con es justo es injusto es razonable es estricto (no) estoy de acuerdo	*I argue with* *I fight* *I can't stand (+ person)* *We are incompatible* *I shout at* *I get angry with* *It's fair* *It's not fair* *It's reasonable* *It's strict* *I agree/ don't agree*	**To be** ***Ser*** **To have** ***Tener*** I am *soy* I have *tengo* You are (singular)*eres* You have (singular)*tienes* He/she/it is *es* He/she/it has *tiene* We are *somos* We have *temenos* You are (plural) *sois* You have (plural) *tenéis* They are *son* They have *tienen*

Gramática: key **reflexive verbs** in the present tense

To be called	***llamarse***	**To get on**	***llevarse***
I am called	***me*** *llamo*	I get on	***me*** *llevo*
You are called(sing)	***te*** *llamas*	You get on (sing)	***te*** *llevas*
He/she/it is called	***se*** *llama*	He/she/it gets on	***se*** *lleva*
We are called	**nos** llamamos	We get on	***nos*** *llevamos*
You are called (pl)	**os** llamáis	You get on (plural)	**os** *lleváis*
They are called	***se*** *llaman*	They get on	***se*** *llevan*

Gramática: possessive adjectives

Singular	**Plural**	
My	*mi*	*mis*
Your	*tu*	*tus*
His/Her	*su*	*sus*

My brother mi hermano
My brothers mis hermanos

Spanish: Knowledge Organiser Year 9 Term 2

	UNIT OF WORK 3: LANGUAGE IN CONTEXT	
Talking about family members:	En mi familia hay 5 personas.	In my family there are 5 people.
	En mi familia hay mi madre y mis dos hermanos.	In my family there is my mum and my two brothers.
	Tengo dos hermanos y una hermana.	I have two brothers and a sister.
	Mi padre se llama Juan.	My dad is called Juan.
	Mis hermanas se llaman María y Carmen.	My sisters are called María and Carmen.
Giving physical descriptions of family members:	Mi madre es alta y delgada.	My mum is tall and thin.
	Mi padre es guapo.	My dad is good looking.
	Mi hermano tiene los ojos marrones.	My brother has brown eyes.
	Mi hermana tiene el pelo negro y corto.	My sister has short, black hair.
Describing personality:	Mi abuelo es muy gracioso.	My grandad is very funny.
	Mi abuela es un poco tímida.	My grandmother is a bit shy.
	Mis primos son molestos.	My cousins are annoying.
Talking about relationships:	Me llevo bien con mi hermano porque es simpático.	I get on well with my brother because he is nice.
	Me llevo mal con mi hermana porque es perezosa.	I get on badly with my sister because she is lazy.
Describing friendships	Mi mejor amigo siempre me hace reír.	My best friend always makes me laugh.
	Mi amigo idea sería gracioso.	Mi idea friend would be funny.
Discussing problems in relationships:	Discuto con mis padres.	I argue with my parents.
	Me peleo con mi hermano mayor.	I fight with my older brother.
	No aguanto a mi hermana menor.	I can't stand my little sister.

Spanish: Knowledge Organiser Year 9 Term 2

Unit 3: House, home and town

3.1 Mi casa *My house/ home*

vivir	to live
vivo	I live
en	in
una casa	a house
un piso	a flat
un edificio	a building
una granja	a farm house
hay	there is/ there are
no hay	there isn't/ aren't
un aseo	a toilet
un salón	a lounge/ living room
una cocina	a kitchen
un comedor	a dining room
un cuarto de baño	a bathroom
un dormitorio	a bedroom
un garaje	a garage
un balcón	a balcony
una terraza	a terrace
un pasillo	a hall(way)
un ático	an attic/ loft
un sótano	a basement
arriba	upstairs
abajo	downstairs
afuera	outside
la planta baja	the ground floor
la primera planta	the first floor
la segunda planta	the second floor

3.2 Los muebles *Furniture*

Hay	there is/ there are
No hay	there isn't aren't
Es	(it) is (description)
Son	(they) are (description)
Está	(it) is (location)
Están	(they) are (location)
un sofá	a sofa
un sillón	an armchair
una butaca	an armchair
una mesa	a table
una lavadora	a washing machine
una nevera	a fridge
un fregadero	a kitchen sink
un lavaplatos	a dishwasher
un microondas	a microwave
una bañera	a bath(tub)
una ducha	a shower
un espejo	a mirror
un lavabo	a washbasin
encima de	on top of
debajo de	under
al lado de	next to
delante de	infront of
detrás de	behind
entre	between

3.3 Mi barrio *My neighbourhood*

la ciudad	the city (large town)
el pueblo	the village/ town
el campo	the countryside
el centro	the centre
la montaña	the mountains
las afueras	the outskirts
la costa	the coast
moderno/a	modern
antiguo/a	old
cómodo/a	comfortable
bonito/a	pretty
feo/a	ugly
pequeño/a	small
grande	big

Gramática: Key verbs

To live	**Vivir**
I live	*Viv**o***
You live	*Viv**es***
He/she lives	*Viv**e***
We live	*Vivi**mos***
You live (plural)	*Viv**ís***
They live	*Viv**en***
To be (location)	**Estar**
I am	*estoy*
You are	*estás*
He/she/it is	*están*
We are	*estamos*
You are (plural)	*estás*
They are	*están*

Spanish: Knowledge Organiser Year 9 Term 2

3.4 ¿Qué se puede hacer? *What can you do?*

Se puede	you can
No se puede	you can't
Puedo	I can
Ir	go
Ir de compras	go shopping
Visitar	visit
Comprar	buy
Pisar el césped	walk on the grass
cambiar dinero	change money
encontrar	find/ meet
las tiendas	the shops
los grandes almacenas	the department stores
la tienda de comestibles	the grocery store
la zapatería	the shoe shop
la papelería	the stationery shop
la pastelería	the cake shop
la pescadería	the fish monger's
la panadería	the bakery
la carnicería	the butcher's
la joyería	the jeweller's
la librería	the book shop
la juguetería	the toy shop
el estanco	the tobacconist's

ir en bicicleta	*go by bike*
no comprar envases de plástico	*not buy plastic containers*
comprar productos locales	*buy local products*
ducharse	*take a shower*
no malgastar agua	*not waste water*
ser miembro de un grupo de presión	*be a member of a pressure group*
a diario	*daily*

3.5 ¿Cómo es tu ciudad? *What is your city like?*

limpio/a	clean
sucio/a	dirty
bonito/a	pretty
feo/a	ugly
turístico/a	tourist area
animado/a	lively
tranquilo/a	calm/ quiet
industrial	industrial
desconocido/a	unknown
famoso/a	famous
aburrido/a	boring
divertido/a	fun
moderno/a	modern
antiguo/a	old
tráfico	traffic
marcha	nightlife
lo bueno	the good thing
lo malo	the bad thing
más..que	more…than
menos… que	less… than

3.7 Un mundo mejor *a better world*

cuidar (de)	*to care (for)*
proteger	*to protect*
se puede/se debe…	*you can/you must…*
reciclar…	*recycle…*
…cartón	*…cardboard*
…latas	*…cans*
…papel	*…paper*
usar el transporte público	*use public transport*
ir a pie	*go on foot*

3.6 Tengo inquietudes *I have concerns*

la basura	*rubbish*
la contaminación	*contamination, pollution*
contaminante	*contaminating, polluting*
el crecimiento	*growth*
el desperdicio de plástico	*plastic waste*
la destrucción	*destruction*
la extinción	*extinction*
los hábitats naturales	*natural habitats*
las inundaciones	*floods*
las lluvias torrenciales	*torrential rain*
los mares	*seas*
medioambiental	*environmental*
el medio ambiente	*environment*
la sequía	*drought*
la tala de árboles	*tree felling*
alarmante	*alarming*
en peligro	*in danger*
preocupante	*worrying*
por todas partes	*everywhere*
trágico/a	*tragic*
me enfurece	*I'm furious about*
me da miedo	*I'm scared of*
me da pena	*I'm saddened by*
me da rabia	*I'm angry about*
me preocupa	*I'm worried about*

Spanish: Knowledge Organiser Year 9 Term 2

Unit of work 4: Key language in context

How to describe your home and say what rooms it has/ hasn't:	Vivo en una casa/ en un piso.	I live in a house/ in a flat.
	En mi casa hay un salón y una cocina.	In my house there is a lounge and a kitchen.
	No hay garaje	There isn't a garage.
	En la primer planta hay **el dormitorio de mi hermano** y mi dormitorio	On the first floor there is **my brother's bedroom** and my bedroom.
	Arriba hay un cuarto de baño	Upstairs there is a bathroom.
	Afuera hay un jardín	Outside there is a garden.
Describing what furniture there is and where it is:	En la cocina hay una lavadora y un microondas	In the kitchen there is a washing machine and a microwave.
	No hay lavaplatos	There isn't a dishwasher.
	La mesa está **al lado del** sofá	The table is **next to the** sofa.
	Las sillas están **detrás de la** mesa	The chairs are **behind the** table.
	Hay un espejo encima de la mesa	There is a mirror above the table.
Describing your neighbourhood saying where it is and what it is like:	Vivo en una ciudad.	I live in a city.
	Mi ciudad está en la costa.	My city is on the coast.
	Vivo en las afueras/ en el centro de la ciudad	I live in the outskirts/ in the centre of the city.
	La ciudad es grande **y moderna**	**The city** is big and **modern.**
	El pueblo es **antiguo** y **bonito**	**The town** is **old** and **pretty.**
Saying what there is in your town and what you can do there:	En mi ciudad **se puede ir** a los grandes almacenes.	In my city **you can go** to the department stores.
	En mi pueblo hay una panadería.	In my town there is a baker's.
	No hay zapatería	There isn't a show shop.
	Se puede comprar pan en la panadería.	You/ we can buy bread in the bakery.
Saying what the good/bad thing is about your town and making comparisons:	**Lo bueno** de mi ciudad **es que es** animada	**The good thing** about my city **is that it is** lively.
	Lo malo de mi pueblo **es que es** aburrido	**The bad thing** about my town **is that it is** boring.
	La ciudad es **más grande que** el pueblo	The city **is bigger than** the town.
	La ciudad es **menos aburrida que** el pueblo	The city is **less boring than** the town.
Talking about environmental problems and solutions:	El desperdicio de plástico **me da rabia**.	Plastic waste makes me angry.
	La destrucción de los hábitats naturales **me preocupa**.	The destruction of natural hábitats worries me.
	Las lluvias torrenciales **me dan miedo**.	Torrential rain scares me.
	Se debe reciclar papel y cartón.	We must recycle paper and cardboard.
	Se puede ir a pie o en bicicleta.	We can walk or cycle.

French: Knowledge Organiser Year 9 Term 2

Unit 3: Current and future study

3.1 Mon école	*My school*
une classe	a class
un collège	a school
un copain / une copine	a friend
un(e) élève	a pupil
un kilomètre	a kilometer
une matière	a subject
un(e) prof(esseur)	a teacher
une salle (de classe)	a classroom
la cantine	the dining hall
le CDI (centre de documentation et d'information)	the library
la cour (de récréation)	the playground
le dictionnaire (bilingue)	(bilingual) dictionary
le gymnase	the gym
le laboratoire	the laboratory
le livre	the book
l'ordinateur (m)	the computer
le parc à vélos	the bicycle park
la photocopieuse	the photocopier
la salle d'informatique	the ICT room
la salle des profs	the staff room
le tableau blanc interactif	the interactive whiteboard

3.2 Les matières	*School Subjects*
L'allemand	German
l'anglais	English
les arts plastiques	Art
la biologie	Biology
la chimie	Chemistry
le dessin	Art
l'EPS	PE
l'espagnol	Spanish
le français	French
la géographie	Geography
l'histoire	History
l'informatique	ICT
l'instruction réligieuse	RE
les maths	Maths
la musique	Music
la physique	Physics
les sciences	Science
la technologie	DT
le théâtre	Drama

3.3 Les adjectifs *Adjectives*	
actif	active
adorable	adorable
barbant	boring
bavard	chatty
créatif	creative
difficile	difficult
ennuyeux	boring
facile	easy
génial	great
gentil	kind
heureux	happy
intelligent	intelligent
inutile	useless
méchant	mean
nul	rubbish
passionnant	exciting
relaxant	relaxing
sociable	sociable
timide	shy
travailleur	hard-working
utile	useful

3.4 Opinions and Connectives

Ma matière préférée, c'est…	My favourite subject is…
J'adore (ça)	I love (it / that)
J'aime (ça)	I like (it / that)
Ça va	It's okay
Je n'aime pas (ça)	I don't like (it / that)
Je déteste (ça)	I hate (it / that)
À mon avis…	In my opinion
Je pense que…	I think that
On dit que…	People say that…
parce que/car	because
et	and
mais/par contre	but / on the other hand
Je trouve ça…	I find that…
Je trouve que c'est	I find that it is
C'est plus / moins intéressant que…	It's more / less interesting than…

3.7 Items of clothing

On doit porter…	We have to wear…
Un pantalon	trousers
Une jupe	a skirt
Une chemise	a shirt
Un pull	a jumper / pullover
Une veste	a blazer
Une cravatte	a tie
Des chausettes	(some) socks
Des chaussures	(some) shoes
Des baskets	(some) sneakers
C'est moche / practique	ugly / practical
Demodé / confortable	old-fashioned / comforatable

3.8 Jobs

Je voudrais être…	I'd like to be a…
l'agriculteur / agricultrice	farmer
le/la boucher / bouchère	butcher
le/la boulanger / boulangère	baker
le/la cassier / cassière	cashier
le/la chanteur / chanteuse	singer
le/la comptable	accountant
le/la cuisinier / cuisinière	cook
le/la danseur / danseuse	dancer
l'électricien(ne)	electrician
l'hôtesse de l'air	air hostess
l'ingénieur	engineer
le/la mécanicien(ne)	mechanic
le/la musicien(ne)	musician
le/la plombier / plombière	plumber
le/la professeur	teacher
le/la programmeur(se)	programmer
le/la secrétaire	secretary
le/la serveur (se)	waiter/waitress
le/la technicien(ne)	technician
le/la vendeur/vendeuse	sales assistant
le/la vétérinaire	vet

Describing subjects you like/dislike:	J'aime le français parce que c'est intéressant	I like French because it's interesting.
	J'adore l'anglais car c'est relaxant	I like English because it's relaxing.
	Je déteste les maths car c'est difficile	I hate Maths because it's difficult.
	J'aime les maths, mais je n'aime pas les SVT.	I like maths but I don't like science.
	Le français, j'aime ça.	I like French.
	C'est plus intéressant que l'anglais.	It's more interesting than English.
	L'anglais, je n'aime pas ça.	I don't like English.
	C'est moins intéressant que le français.	It's less interesting than French.
	Ma matière préférée, c'est les maths.	My favourite subject is maths.
	L'anglais, ce n'est pas pour moi.	English isn't for me.
Giving more detail about your school:	J'habite à deux kilomètres de mon collège	I live two kilometres away from school.
	Je vais au collège et je suis en...	I go to college and I am in… (year).
	Il y a vingt-huit élèves dans ma classe.	There are 28 pupils in my class.
	Dans mon collège les élèves restent dans la classe et ce sont les profs qui changent de salle.	In my school the pupils stay in the classroom and it's the teachers who move rooms.
	Les profs sont sympas et les matières sont intéressantes.	The teachers are nice and the subjects are interesting.
	Ma matière préférée, c'est les arts plastiques.	My favourite subject is art.
	Je suis élève ici depuis trois ans.	I have been a pupil here for three years.
	Il y a… heures de cours par jour / semaine.	There are… hours of lessons per day.
	Il y a un uniforme scolaire / Il n'y a pas d'uniforme scolaire.	There is a school uniform / there isn't a school uniform.
	Il y a des activités après les cours / pendant la pause-déjeuner.	There are activities after lessons / during lunch time.
	La journée scolaire commence / finit à…	The school days starts / finishes at…
	Il y a un règlement, par exemple on doit… il est interdit de…	There is a rule, for example we should… it is forbidden to…
	On doit porter uniforme et il est interdit de fumer	We have to wear a uniform and it is forbidden to smoke

Unit 4: Free time activities

4.1 Qu'est-ce que tu aimes faire?

Les actualités	the news
les comédies	the comedies
les dessins animés	the cartoons
les documentaires	the documentaries
une émission	a programme
les émissions musicales	the music programmes
les émissions de sport	the sports programmes
les émissions de télé-réalité	the reality TV programmes
un feuilleton	a soap opera
le film d'amour	the romantic film
le film d'animation	the animated film
le film d'horreur	the horror film
le film policier	the detective film
un film de guerre	a war film
les jeux télévisés	the game shows
les séries	the series
le sondage	the survey
le téléfilm	the TV drama
les téléfilms policiers	the police dramas
la télé-réalité	the reality television
la variété française	the French easy listening music
pas du tout	not at all
télécharger	to download
un film d'arts martiaux	a martial arts film
un histoire d'amour	a love story
un western	a western
Oui, je regarde…	Yes, I watch…
Oui, j'écoute…	Yes, I listen to…

4.2 Tu fais du sport?

le centre de loisirs	the leisure centre
courir	to run
l'entraînement (m)	the training
s'entraîner	to train
l'équipe	the team
l'équitation	the horse-riding
gagner	to win
le gymnase	the sports hall
le lac	the lake
le médaille	the medal
la musculation	the weight training
la natation	the swimming
la piscine	the swimming pool
la plongée sous-marine	the scuba diving
le saut en longueur	the long jump
le stade	the stadium
le terrain de sport	the sports ground
le tournoi	the tournament
le voile	the sailing
aquatique	water (adjective)
la balade	the walk, ride
depuis	since
l'escalade (f)	the rock climbing
être passionné(e) de	to be passionate about
le jouer	the player (m)
la joueuse	the player (f)
le mur	the wall
nettoyer	to clean
rêver	to dream
le sport de combat	the combat sport
le sport de défense	the defensive sport
le stage	the course

4.3 Qu'est-ce que tu as fais ce weekend?

le baladeur MP3	the MP3 player
bien sûr	of course
chez	at the house of
choisir	to choose
communiquer	to communicate
une façon de	a way to
faire une piquenique	to have a picnic
la fête	the party/festival/celebration
genial (e)	great
le hockey sur glace	the ice hockey
incroyable	incredible
s'informer	to get information
le journal	the newspaper / the news
les loisirs	free time (activities)
marrant (e)	funny
par contre	on the other hand
la patinoire	the ice rink
se relaxer	to relax
retrouver	to meet
utiliser	to use

Perfect tense with *être* – some verbs, for example *aller* and *sortir,* use the auxiliary verb être instead of avoir in the perfect tense.

Je suis
Tu es
Il / elle / on est
Nous sommes
Vous êtes
Ils / ells sont

Saying what you like to do:	Moi, j'aime regarder les émissions de sport	I like to watch sport shows.
	Je suis fan des jeux télévisés	I'm a fan of game shows.
	J'écoute de la musique rap tous les jours.	I listen to rap music every day.
	Mes frères adorent les comédies romantiques	My brothers love romantic comedies (rom-coms).
	Est-ce que tu regardes la télé ?	Do you watch TV?
	Quelle sorte de programmes / films préfères-tu ?	What sort of programmes / films do you prefer?
	Combien d'heures écoutes-tu de la musique chaque jour ?	How many hours a day do you listen to music?
Discussing sports:	Je fais du handball et de la gymnastique	I do handball and gymnastics.
	Mon entraînement, c'est le jeudi de 18h à 19h	My training is on Thursday from 6pm to 7pm.
	J'aime les sports d'équipe parce que j'aime rester en forme	I like team sports because I like to stay in shape.
	Je joue au rugby deux fois par semaine avec mes parents	I play rugby twice a week with my parents.
	La semaine dernière, j'ai fait du trampoline avec ma sœur	Last week, I went trampolining with my sister.
Saying what you did at the weekend:	Ce weekend, j'ai fait un peu de sport et j'ai regardé un film sur mon ordi	This weekend I did a bit of sport and I watched a film on my computer.
	Je suis allé(e) au cinéma mais je n'ai pas fait de sport	I went to the cinema but I did not do (any) sport.
	Le weekend dernier, on a organisé(e) une méga fête chez moi avec des copains	Last weekend we organised a mega party at my house with some friends.
	On a vu un film d'action et après, on a pris un coca dans un café	We saw an action movie and afterwards, we had a Coke in a café.
	Je n'ai rien regardé(e) la télé	I have never watched TV.