Great in name, greatest together

Great Sankey High School

Knowledge Organiser

Summer Term

2022/23

Year 10

Name: _____

Form: _____

Contents

A Knowledge Rich Curriculum at Great Sankey High School

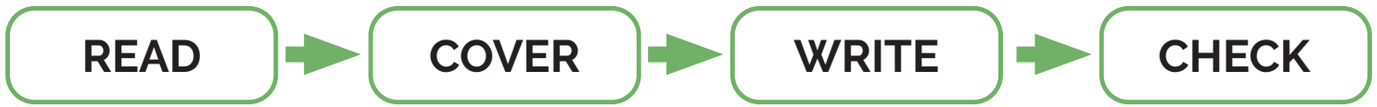
Research around memory suggests that if knowledge is studied once and not revisited or revised, it is not stored in the long-term memory. This means that after one lesson, or revising for one test, the knowledge will not be retained unless it is studied again. To ensure that knowledge is embedded in 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!

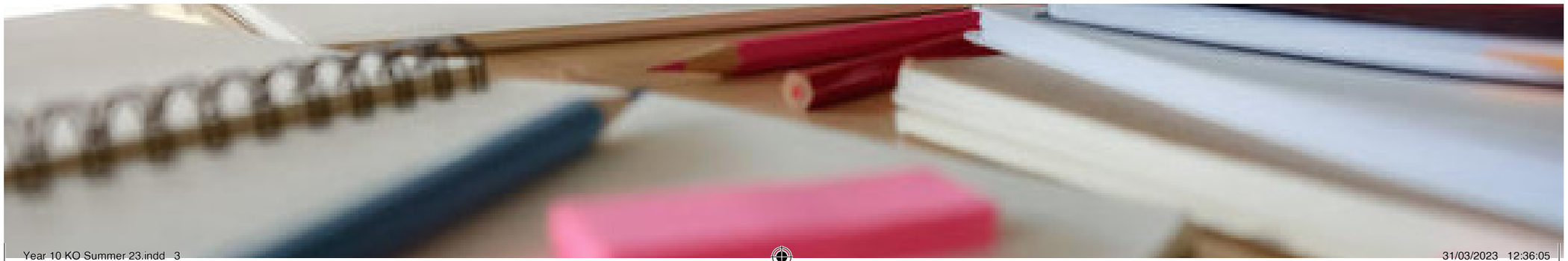


To encourage students to build good study habits, students will be assigned homework quizzes on a week A through Class Charts and Teams. Students will be expected to use revision strategies such as read, cover, write, check to learn key knowledge and will then complete the quizzes to demonstrate their 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."



My Timetable

Week A

	Monday	Tuesday	Wednesday	Thursday	Friday
PDR					
Lesson 1					
Lesson 2					
Lesson 3					
PDR					
Lesson 4					
Lesson 5					

Week B

	Monday	Tuesday	Wednesday	Thursday	Friday
PDR					
Lesson 1					
Lesson 2					
Lesson 3					
PDR					
Lesson 4					
Lesson 5					

Organisation and Planning Sheet

Date Set	Subject	Task	Due Date	Tick When Complete

Date Set	Subject	Task	Due Date	Tick When Complete

Communication Log

Date message sent	Message	Date Message Read	Signature

Date message sent	Message	Date Message Read	Signature

On TRACK student Target Setting and Review

We empower our students to Dare for Greatness and have two simple questions for students to reflect on:
1. Tomorrow's Aspiration: What do you want to achieve?
2. Today's Question: Are you On TRACK?

1. Tomorrow's Aspiration: What do you want to achieve?
What is your career aspiration? What do you want to achieve when you leave GSHS? What do you want to achieve by the end of this academic year? What do you want to achieve this term?

2. Today's Question: Are you On TRACK?
Each week you are to read the aspects detailed carefully for that specific GSHS Learning Habit. If you consistently display the aspects detailed for that Learning Habit, tick the aspect. Based upon this review, set yourself a target and actions you will take to achieve your target. You will then evaluate of you successfully achieved your target and determine if you are On TRACK.

HT1 Week 1 Time management	HT1 Week 2 Ready to Learn
• Students who wish to be successful have outstanding attendance and are on time each morning and to lessons throughout the day to maximise learning time. • Students who wish to be successful always meet deadlines, with all homework, tasks or assignments completed to a standard reflecting their ability.	• Students who wish to be successful always demonstrate a positive attitude to learning, are always on-task in every lesson and behave in a purposeful and respectful manner outside of lessons. • Students who wish to be successful always contribute positively to lessons, try their best and always produce work to a standard reflecting their ability level.
My target for the week is to…	My target for the week is to…
To achieve my target for the week I will…	To achieve my target for the week I will…
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…

HT1 Week 3 Act on Instruction	HT1 Week 4 Correct Uniform and Equipment
• Students who wish to be successful always respond positively and act on instructions from staff. • Students who wish to be successful do not answer back, ignore or challenge the member of staff's instruction as they trust that this instruction is to help them to be successful and to meet our expectations • Students who wish to be successful always act on the feedback provided to classwork or homework by staff and use their DIRT time effectively to improve.	• Students who wish to be successful always wear the correct uniform and with a sense of pride. In line with our school values, it is important that our students take pride in themselves and in our school community. • Students who wish to be successful are always equipped for the day ahead.
My target for the week is to…	My target for the week is to…
To achieve my target for the week I will…	To achieve my target for the week I will…
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…

HT 1 Week 5
Kind and Respectful

- Students who wish to be successful always demonstrate kind and respectful behaviour to other students, staff and their learning environment.
- In line with our school value of mutual respect, we expect all members of our school community to be polite, tolerant of others and celebrate diversity.

My target for the week is to...

To achieve my target for the week I will...

Did I achieve my target?
If yes, how easy / challenging was it?
If not, why not? What do I need to improve?
Next steps...

HT1 Week 6
Mid-term Review - Tomorrow's Aspiration supported by Today's Question; are you On TRACK?

My key achievements this term have been...

To improve further and ensure I am On TRACK I need to...

To achieve this I will...

HT2 Week 1 Time management	HT2 Week 2 Ready to Learn
• Students who wish to be successful have outstanding attendance and are on time each morning and to lessons throughout the day to maximise learning time. • Students who wish to be successful always meet deadlines, with all homework, tasks or assignments completed to a standard reflecting their ability.	• Students who wish to be successful always demonstrate a positive attitude to learning, are always on-task in every lesson and behave in a purposeful and respectful manner outside of lessons. • Students who wish to be successful always contribute positively to lessons, try their best and always produce work to a standard reflecting their ability level.
My target for the week is to…	My target for the week is to…
To achieve my target for the week I will…	To achieve my target for the week I will…
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…

HT2 Week 3 Act on Instruction	HT2 Week 4 Correct Uniform and Equipment
• Students who wish to be successful always respond positively and act on instructions from staff. • Students who wish to be successful do not answer back, ignore or challenge the member of staff's instruction as they trust that this instruction is to help them to be successful and to meet our expectations • Students who wish to be successful always act on the feedback provided to classwork or homework by staff and use their DIRT time effectively to improve.	• Students who wish to be successful always wear the correct uniform and with a sense of pride. In line with our school values, it is important that our students take pride in themselves and in our school community. • Students who wish to be successful are always equipped for the day ahead.
My target for the week is to…	My target for the week is to…
To achieve my target for the week I will…	To achieve my target for the week I will…
Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…	Did I achieve my target? If yes, how easy / challenging was it? If not, why not? What do I need to improve? Next steps…

HT 2 Week 5
Kind and Respectful

- Students who wish to be successful always demonstrate kind and respectful behaviour to other students, staff and their learning environment.
- In line with our school value of mutual respect, we expect all members of our school community to be polite, tolerant of others and celebrate diversity.

My target for the week is to...

To achieve my target for the week I will...

Did I achieve my target?
If yes, how easy / challenging was it?
If not, why not? What do I need to improve?
Next steps...

HT2 Week 6
Mid-term Review - Tomorrow's Aspiration supported by Today's Question; are you On TRACK?

My key achievements this term have been...

To improve further and ensure I am On TRACK I need to...

To achieve this I will...

Portable Knowledge in STEM at KS4

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 (usually labelled frequency) with different eye colours or what their favourite subject is.	Can be used to record the number of people visiting honeypot sites when studying tourism such as visitor numbers in Jamaica over a 5 year period.
Pie chart	Can be used to display the % of different hydrocarbons in crude oil or % of different gases in the atmosphere in chemistry.	Can be used to display results of a tally chart.	Can be used to display the proportion or % of pupils who travel to school in different way.	Can be used to record the amount of people working in different job sectors over time in the UK in comparison to other countries.
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 data such as the percentage of forest lost in a range of countries. A range of different bar charts and histograms are used when writing up fieldwork.
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.	Can be used to display research data. Can also be used to represent time on a "Gant" chart.	In maths,this can be used to show the distribution of a data set such as the ages within a population. In most cases, a histogram has different class widths meaning the area of each bar is the frequency for it.	
Line graph	Can be used to display the time taken for salt to dissolve at different temperatures in chemistry.	Can be used to represent trend data during research pieces.	In maths, these are sometimes called scatter graphs or timeseries graphs. They can be used to display house prices and/or the trend in a data set over time.	Can be used when studying climate graphs. Line graphs are also used when analysing climate data over a period of time.
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. In GCSE Statistics, we use correlation coefficients and linear regression equations to analyse this in detail.	In geography lines of best fit are used to look for negative and positive correlations when comparing data usually in physical geography modules. It is always a straight line drawn with a ruler through as many points as possible.

Portable Knowledge in STEM at KS4

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	The range is a measure of the spread of a data set. It can be used to compare data, with a smaller range meaning it is more consistent such as comparing times athletes run 100m over 10 races.	Range is used in the geographical skills section of course. Range can be used when looking at rainfall and temperature data for different locations or 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 in conjunction with the range.	Mean, median and mode are used in the geographical skills section of the course and can be used to analyse any sets of data with a range of results.
Continuous data	These are data values that can take any value and are grouped/rounded. In biology an example would be bubbles of oxygen produced during photosynthesis.	x	These are data values that can take any value and are grouped/rounded. Data could be length, time, capacity or mass.	This is where you have any value in your data. An example would be mm of rainfall.
Discrete data	In science this is sometimes called discontinuous data. An example would be blood group or eye colour in biology.	x	These are specific data values and can be quantitative (numerical) and qualitative (word or category). Examples include type of colour, the result from rolling a dice or the number of pets people have.	Discrete data in geography includes both primary and secondary data. Fieldwork data could include rock sample sizes and how they change from the source to the mouth of a river.
Using co-ordinates	x	Used by a CNC machine to position the cutter when machining a piece of material. Marking out a series of holes from dimensions on a drawing.	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!	Used when marking out materials prior to cutting and quality during checking when manufacturing a component.	Being able to read a variety of scales is a key skill for plotting and drawing graphs or measuring angles and lines. It is important in constructions and scale drawings to be within 0.1 cm or 1°	Measurements and accuracy are really important when studying map skills, especially when looking at scale and distance.

Year 10 Term 3 Vocabulary List

Year 10 Term 3		Definition	Contextual Sentence
1	**highlighted**	To draw special attention to.	The spelling mistakes had been highlighted in green.
2	**implicit**	Suggested but not directly said.	The team had implicit faith in his skill.
3	**induced**	Persuaded or leading someone to do something.	The advert induced people to eat more fruit.
4	**inevitably**	Is certain to happen; unavoidably.	Inevitably, without a map, he got lost.
5	**infrastructure**	The foundation or basic framework of a system / organization / country etc.	The war badly damaged the country's infrastructure.
6	**inspection**	Careful examination.	The kitchen passed the hygiene inspection.
7	**intensity**	An extreme degree of strength, force, energy or feeling.	The intensity of the hurricane was frightening.
8	**manipulation (2 definitions)**	To manage or use skilfully. To control someone/ something unfairly, especially to your own advantage.	His manipulation of the paint in the portrait was amazing. The manipulation of the data was misleading.
9	**minimised**	Reduced to the smallest possible amount.	Safety goggles minimised the risk of eye injuries.
10	**nuclear**	Relating to the nucleus of an atom.	Nuclear weapons pose a threat to everyone.
11	**offset (2 definitions)**	Something that counterbalances or to compensates for something else. The amount or distance by which something is out of line.	In basketball, he offsets his small size by his cleverness and speed. The wheel was offset by 5cm.
12	**paragraph**	A distinct section of a piece of writing, usually dealing with a single theme and indicated by a new line/indentation.	Start each paragraph on a new line.
13	**plus**	In addition to / more that what is expected; an advantage.	Her knowledge of French is a plus in her job.
14	**practitioners**	People actively engaged in a discipline, or profession, especially medicine.	Acupuncture is widely used by practitioners of alternative medicine.
15	**predominantly**	Mostly / mainly.	She is predominantly a dancer, but she also sings.
16	**prospect (2 definitions)**	The possibility of something happening / looking forward to. To search for (especially for mineral deposits).	He was excited at the prospect of going to the concert. They used to prospect for gold in this area.
17	**radical**	Very different from the usual or traditional; extreme.	The internet has brought about a radical change in many businesses.
18	**random**	Lacking a plan/purpose; without definite aim, direction, rule or method	They acted out random scenes from the play.
19	**reinforced**	Strengthened by additional help or material.	We reinforced the corners of the box.

20	**restore**	To bring back or re-establish.	The army was called in to restore order.
21	**revision**	Look over again to correct, improve or learn.	The plans needed some revision before they were issued.
22	**schedule**	A plan for carrying out a process or procedure; a timetable.	He has been forced to adjust his schedule because of the bad weather.
23	**tension (2 definitions)**	The state of being stretched tight. Mental or emotional strain.	There must be tension in the wire before it is fixed in place. The dramatic tension at the end of the book was very good.
24	**termination**	The action of ending / stopping something.	He was upset at the termination of his contract.
25	**theme**	A subject or topic.	The theme of the poem was love.
26	**thereby**	By that means; as a result of that.	She was injured the day before and thereby lost her chance to compete.
27	**uniform (2 definitions)**	Having always the same form; not varying or variable. Distinctive or characteristic clothing.	The trees were of uniform height. The new uniform looked very smart.
28	**vehicle**	Something used for transporting people or goods.	It was an energy efficient vehicle.
29	**via**	Travelling through a place on the way to somewhere; by way of/ through.	Internet connection via broadband offers many advantages.
30	**virtually**	Nearly; almost.	Virtually all the children come to school by bus
31	**widespread**	Found over a large area/ number of people.	The earthquake caused widespread damage to property.
32	**visual**	Relating to seeing or sight; producing mental images.	Her designs have a strong visual appeal.
33	**accommodation**	Where someone may live or stay.	He moved into student accommodation in September.
34	**analogous**	Similar to something else in general or in some specific detail.	The report's findings are analogous with our own.
35	**anticipated**	Expected or looked-forward to.	A large crowd gathered for his eagerly anticipated arrival.
36	**assurance**	Being certain.	He spoke with assurance about his future plans.
37	**attained**	Succeed in achieving.	He has attained the highest grade in his music exams.
38	**behalf**	In the interest of; as a representative of.	I wrote the letter on behalf of my client.
39	**bulk**	A large amount; the main or greater part.	He spent the bulk of his time on the computer.
40	**ceases**	Stops; comes to an end.	With so much training, it ceases to be fun.
41	**coherence**	Being logical and consistent.	There was no coherence between the first and the second half of the film.

ENGLISH

An Inspector Calls Knowledge Organiser (GCSE English Literature)

Characters

Inspector Goole: presents himself as a police inspector investigating the reasons for Eva Smith's suicide.

Eva Smith: a working-class girl in her early twenties who commits suicide. It becomes clear that her death has been caused by the Birlings' thoughtless actions.

Mr Arthur Birling is the father of a middle-class family. An arrogant businessman, he aspires to become upper-class and only thinks about money and reputation.

Mrs Sybil Birling was an upper-class lady but married beneath herself. She is cold and haughty, with little time for others.

Sheila Birling is initially a childish young lady who is blind to reality. Yet she grows in integrity and empathy as the play progresses.

Eric Birling is impulsive and reckless, but is also inclined to be empathetic towards others. Like his sister, he transforms by the end of the play.

Gerald Croft is an aristocrat engaged to Sheila Birling. He appears to be gentlemanly, but is actually hiding hedonistic behaviour. He and Sheila break up during the play.

Edna is frequently on stage, but speaks little. She is the Birlings' servant and is a constant reminder of how they ignore the working-classes.

Act 1

Opening Stage Directions

Plot and character development

AIC was written in 1945, but set in 1912. The play opens in the Birling family's dining room. They are clearly a wealthy family, but there are hints that not everything is as it seems. The setting is rather oppressive, and gives the impression of entrapment within an upper-class milieu. Priestley also introduces the characters.

Symbols

The ***solid furniture*** symbolises the apparent stability of the family and their place in the social hierarchy.
The ***closed doors*** and ***curtained windows*** suggest blindness to the realities of the world outside this upper-class context.
The ***dining-room*** is "fairly large", suggesting the family are not as wealthy as they wish to be.

Quotations

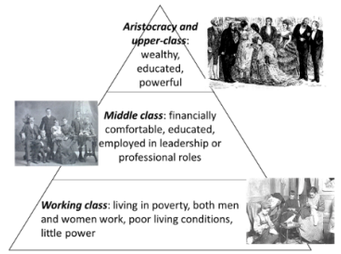
1. ***Arthur Birling*** is a "heavy-looking, rather portentous man…with fairly easy manners but rather provincial in his speech."
2. ***Sybil Birling*** is "a rather cold woman and her husband's social superior."
3. ***Sheila Birling*** is a "pretty girl in her early twenties, very pleased with life and rather excited."
4. ***Gerald Croft*** is a "well-bred young man-about-town."
5. ***Eric Birling*** is "half shy, half assertive."

Vocabulary

A. ***Political diatribe***: a political attack
B. ***Microcosm***: a small group of people who represent sections of society
C. ***Façade:*** an appearance
D. ***Capitalism***: a system of organising society by which businessmen control money and keep it for themselves
E. ***Socialism***: a system of organising society by which money is shared equally
F. ***Collectivist:*** the group is more important than the individual
G. ***Individualist:*** the individual is more important than the group

Historical context

Edwardian social class system:



Celebrating the engagement

The family celebrate Sheila and Gerald's engagement, but Eric's tipsiness and Sheila's questioning of Gerald hint at cracks in the family's façade. Gerald's parents are absent, suggesting they disagree with his engagement. Mr B. makes several speeches articulating his capitalist viewpoint. Eric tries to question this, but is silenced by his father. The servant – Edna – circulates throughout as a visual reminder that the upper-classes ignore the working-classes. Then the ladies leave the room.

Engagement ring: not only does this symbolise Sheila and Gerald's engagement, but is also represents Sheila's social success at securing a wealthier husband. It represents stability, affluence, and acceptance into the upper-classes.
Mr B's possible knighthood represents progression from middle to upper-class.

6. ***Sheila***: "Oh – it's wonderful! Look – Mummy – isn't it a beauty?"
7. ***Mr B:*** "we're in for a time of steadily increasing prosperity."
8. ***Eric***: "What about war?"
9. ***Mr B:*** "nobody wants war."
10. ***Mr B:*** "as if we were all mixed up together like bees in a hive – community and all that nonsense."

H. ***Dramatic irony:*** the audience know more than the characters
I. ***Arrogant:*** self-important, believing that one is superior to others
J. ***Morality:*** the code of right and wrong
K. ***Reputation:*** how an individual's character is seen by other members of society
L. ***Discredited:*** disgraced, having a damaged reputation

Life in 1912 meant class divisions and government by the capitalist Conservative Party. Industrial progress meant that Britain was more affluent. However, despite this optimism there were whispers of a possible war. Then the sinking of the Titanic in April 1912 revealed the short-sightedness of the upper-classes, who depended on technology and money. The deaths of many in the third class, and few in the first class, highlighted the unfairness of the class system. The world wars (1914-18, 1939-45) drastically changed society, so by the time ***AIC was written in 1945,*** the class system was less rigid and women had more opportunities to work. In 1945 a Labour (socialist) government was voted in and the welfare state established.

Goole questions Mr Birling

Inspector Goole rings the doorbell, interrupting Mr Birling's capitalist speech and therefore showing how socialism can replace capitalism. The Inspector tells Mr Birling, Gerald and Eric that there has been a suicide: a young woman (Eva Smith) has died. The audience discover that Eva used to work for Mr Birling, but was fired when she was part of a group asking for higher pay.

Eva Smith's name: "Eva" alludes to the Biblical character of Eve, who was the first woman made by God. Therefore Eva represents all women. "Smith" is one of the most common surnames, again indicating that Eva is the embodiment of all working-class women.

11. ***Insp***: "burnt her inside out."
12. ***Mr B:*** "If we were all responsible for everything that happened to everybody we'd had anything to do with, it would be awkward."
13. ***Mr B:*** "If you don't come down sharply on some of these people, they'd soon be asking for the earth."
14. ***Insp***: "It's better to ask for the earth than to take it."
15. ***Eric***: "Why shouldn't they try for higher wages?"

M. ***Hypocrisy***: pretending to believe in something you don't agree with
N. ***Obstinate***: stubborn, unwilling to change
O. ***Overbearing***: domineering, asserting power over other people
P. ***Materialistic***: interested only in money and things

During the Victorian and Edwardian eras, ***conditions for the working-classes*** were poor. Health and safety regulations were limited, with many workers being injured, becoming ill or dying as a result of their employment. Pay was low, with employers taking most of the profits.
Workers' strikes were not uncommon. Across England many workers went on strike during "The Great Unrest" (1910 and 1914). In 1926, the country was brought to a standstill again during the General Strike.

Goole questions Sheila

Sheila enters and is shocked to hear about the suicide. We learn that when Eva left the factory, she gained employment in a clothes shop called Millwards. Sheila was shopping there one day, and became angry at Eva; she insisted that Eva were fired. Unlike her father, Sheila shows remorse for what she has done.

The ***dress*** Sheila tries on symbolises her desire to conform to a stereotype of femininity which values beauty, fashion, and sophistication above intelligence.

16. ***Sheila***: "But these girls aren't cheap labour – they're people!"
17. ***Mr B:*** "We were having a nice little family celebration tonight. And a nasty mess you've made of it now."
18. ***Inspector***: someone's made a "nasty mess" of Eva's life.
19. ***Sheila***: "I felt rotten about it at the time and now I feel a lot worse."

Q. ***Infantilised***: treated like a child
R. ***Moral epiphany***: a sudden realisation that one has made a mistake
S. ***Receptive***: willing to listen to others
T. ***Remorseful***: guilty, regretful.

Expectations of women in a patriarchal society:
Middle and upper-class women occupied the ***domestic sphere*** – they were expected to marry (preferably a man or equal or higher class), raise children, and run a household. Women were considered to be the 'weaker' sex – not just physically but emotionally and mentally also. It was believed that they should be 'protected' from any aspects of life that were 'distasteful'. Things were, however, starting to change… the Suffragettes were campaigning for votes for women (granted in 1918), and lower-class women were increasingly working.

		Plot and character development	Symbols	Quotations	Vocabulary
Act 2	Goole questions Gerald	Start of Act 2. Inspector Goole turns his attention to Gerald, who reveals that he met Eva at the Palace Bar the previous summer. Eva was homeless and penniless, so Gerald gave her a place to live. They had an affair. In the autumn, Gerald ended the relationship and gave Eva some money. She went to stay at the seaside. Sheila returns the engagement ring to him.	The hedonistic behaviour at the ***Palace Bar*** reveals the darker side to upper-class behaviour. It shows how hypocritical Gerald is; he expects Sheila to remain innocent, but he seeks out working-class women for entertainment. ***Eva's changing names*** reveals her desire to reinvent herself after each disaster. As "Daisy" she is innocent, but "Renton" hints at employment as a prostitute. As "Mrs Birling" she attempts to gain respectability and security.	20. ***Sheila to Mrs B:*** "You mustn't try to build up a kind of wall between us and that girl." 21. ***Gerald***: "I hate those hard-eyed, dough-faced women." 22. ***Gerald***: "I've suddenly realised – taken it in properly – that she's dead-" 23. ***Gerald***: "She was young and pretty and warm-hearted – and intensely grateful." 24. ***Insp***: "Your daughter isn't living on the moon. She's here in Brumley too." 25. ***Sheila***: "You were the wonderful Fairy Prince."	U. ***Aristocratic:*** member of the ruling class V. ***Evasive:*** avoiding questioning W. ***Unscrupulous:*** lacking morality and integrity X. ***Exploitative:*** prepared to use other people Y. ***Vulnerable***: weak and easily hurt
	Goole questions	Both Gerald and Eric have left the room. Mrs Birling asks to see the photograph of Eva, and Inspector Goole questions her. Reluctantly and haughtily, Mrs Birling admits that she met Eva at her charity (the Brumley Women's Organisation). Eva came to the charity asking for help because she was pregnant; Mrs Birling refused to help on the basis that Eva was unmarried. Sheila becomes increasingly angry with her parents. It soon becomes clear that it the father of Eva's child was Eric.		26. ***Inspector***: "Public men…have responsibilities as well as privileges." 27. ***Mrs B***: "Damned impudence!" 28. ***Mrs B***: Eva "only had herself to blame." 29. ***Mrs B***: "I did nothing I'm ashamed of… You have no power to make me change my mind." 30. ***Mrs B***: "I blame the young man… He ought to be dealt with very severely."	Z. ***Unempathetic***: lacking understanding of others AA. ***Intolerant***: unwilling to accept the opinions of others BB. ***Haughty***: proud CC. ***Callous:*** uncaring ***DD. Wilfully blind:*** deliberately ignoring the truth
Act 3	Goole questions	Eric returns at the start of Act 3. He reveals that he met Eva at the Palace Bar after her relationship with Gerald had ended. Eric returned to Eva's flat, and may have pressured her into having sex. Their affair continued, and Eva became pregnant. Eric tried to support her financially, but when Eva found out that he had stolen the money from his father's business, she refused this help.	The ***fifty pounds*** Eric steals from his father's business cause his parents to be more angry than the revelation about the sexual assault of Eva. This reveals their skewed morality and focus on money rather than people.	31. ***Eric***: "I was in that state when a chap easily turns nasty." 32. ***Eric***: Eva "was pretty and a good sport." 33. ***Mrs B***: "You stole money?" 34. ***Eric to Mrs B***: "You killed them both - damn you, damn you." 35. ***Insp***: "used her for the end of a stupid drunken evening, as if she was an animal, a thing, not a person."	EE. ***Euphemism:*** using a better word to cover up the harsh reality FF. ***Impulsive:*** acting without thinking GG. ***Hedonistic:*** indulging in pleasurable activities HH. ***Resentful:*** holding a grudge II. ***Disgraced:*** lost one's good reputation
	The denouement	Now that the truth has been revealed, Inspector Goole takes centre stage and explains what we have learnt: that we are all part of one community and should take responsibility for other people. He leaves abruptly. Gerald returns, and suggests that the Inspector was a fraud. After some investigation, it turns out that there was no Inspector Goole on the Brumley police force. Most of the family are relieved, but Eric and Sheila think that this revelation changes nothing. The phone rings. Birling answers and hears that a policeman is on his way; a girl has committed suicide. The play ends, but there is a sense that the Birling family will be doomed to repeat the evening's events until they are able to learn their lesson.	The ***fixed setting*** throughout the play reveals the older generation's inability to change their opinions and become more empathetic. This setting becomes a symbol of Eric and Sheila's entrapment, and Sheila looks towards the door at the end as she considers escaping her oppressive upbringing.	36. ***Insp***: "There are millions and millions and millions of Eva Smiths and John Smiths still left with us." 37. ***Insp***: "We are members of one body." 38. ***Insp***: "If men will not learn that lesson, they will be taught it in fire and blood and anguish." 39. ***Sheila***: "The point is, you don't seem to have learnt anything." 40. ***Mr B***: "Look at the pair of them – the famous younger generation who know it all."	JJ. ***Moralistic***: excessively concerned with right and wrong KK. ***Intimidating:*** imposing, frightening LL. ***Didactic:*** teaching MM. ***Omniscient:*** knowing everything ***NN. Strong-minded:*** determined OO. ***Malleable:*** changeable PP. ***Ambiguous:*** unclear

Concepts and ideas

Characters

Mr Birling	Mr Birling is the epitome of capitalist businessmen; he is prepared to sacrifice morality in order to gain affluence and social power. Priestley uses dramatic irony to alienate the audience from Mr Birling and his capitalist views.
Eva Smith	Eva Smith is the embodiment of young, working-class women who were oppressed by the middle/upper classes. Priestley creates pathos and sympathy for her predicament, as well as paralleling her with Sheila to show that it social class is only an accident of birth.
Mrs Birling	Mrs Birling symbolises the pride and callousness of the upper-classes, and her coldness towards her family demonstrate the discontent which comes from such haughtiness.
Sheila and Eric	Sheila and Eric represent the possibility for a positive change in society, as they move from blindness to understanding and empathy. Does their sheltered upbringing mean that they are as much victims of society as Eva is? And does Sheila really understand the impact that she has had on another person, or is she upset that she has suddenly been plunged into knowledge of the real world?
Gerald	Gerald embodies the double-standards of the aristocracy, who present a respectable façade but in reality indulge in unscrupulous, hedonistic behaviour. Yet is Gerald the only character who truly feels distressed about Eva's death?
Inspector Goole	Inspector Goole is Priestley's mouthpiece, and is used to articulate Priestley's ideas about the morality and justice of socialism. Yet, ultimately, is Goole too didactic and domineering to gain the audience's trust?
Edna	An almost constant presence on stage, Edna reminds the audience that the upper-classes consistently ignore the working-classes. The audience is very much aware that Edna's place in the Birling household is dependent on her continued politeness and respect for her employers.

Themes

Capitalism vs socialism	Priestley criticises the selfishness of capitalism and desires a fairer, socialist future after the horrors of two world wars.
Generations	Priestley demonstrates that the older generation are set in their ways, while the younger generation are more malleable and open to change for the future
Responsibility	Priestley prompts the audience to examine their individual and collective responsibility to society in order to promote the idea of a socialist welfare state.
Hypocrisy	The hypocrisy of middle-class Edwardian society is uncovered; the façade of respectability matter more than morality.
Sinfulness	It has been argued that the characters represent the Seven Deadly Sins. Thus, Priestley uses them to reveal universal character flaws and mankind's tendency to immorality.
Gender	Through his presentation of Eva and Sheila, Priestley reveals how unfairly women were treated in the Edwardian period. Yet, as Sheila transforms into a determined, outspoken individual, Priestley also shows the potential women have for transforming the society around them.

Writers' Viewpoints and Perspectives (GCSE English Language Paper 2 Section A – AQA)

Q 5-10 mins to read the sources

1 ***Read lines… to … Choose 4 statements below which are TRUE.*** ***4 marks – 5 minutes***

1. Re-read the specified lines. 2. Circle the numbers of the statements you think are true. Double-check. 3. Shade the boxes of the statements you think are true.

	What is the Q asking?	*Subject terminology*	*Excellence criteria*	*Sentence starters*
2: summarise similarities/differences	***Use details from both sources to write a summary of the similarities / differences in….*** 1. Planning table – ideas for Source A / Source B. 2. Draw lines linking similar ideas. 3. Use this to write 2 paragraphs ***8 marks – 10 minutes***	***Connectives showing similarity:*** ○ Similarly ○ In comparison ○ Likewise ○ Just as ○ Both texts ***Connectives showing difference*** ○ On the other hand ○ In contrast ○ Contrasting with this ○ However ○ Meanwhile ○ Whilst For this question, you need to ***infer and explain*** rather than ***analyse***. In order to infer and explain, ask yourself ○ What is this quotation telling me about the topic? ○ What can I infer (learn) about the writer's attitude, beliefs, feelings and thoughts about this topic? ○ Why might the writer feel this way? ○ Why is the writer giving this information; what do they want to persuade you of? ***Do not analyse (zoom in on) words for Question 2.***	○ Start with a comparative connective (e.g. Both…) ○ Respond directly to the Q using precise vocabulary ○ Use "in order to" to address key concepts ○ Select precise evidence ○ Embed fluently in a sentence ○ What can you infer? ***Link to source B.*** Then ***EE*** for source B.	Both writers portray … as …. The writer of Source A presents it in this way in order to suggest that… This is clear when we read "…" Evidence of this is "…" This means that… We learn that… The writer communicates that… This indicates that… This reinforces the idea that… Similarly / In contrast, in Source B … is shown to be… + EVIDENCE + EXPLAIN
3: analyse language in 1 source	***Refer only to Source … How does the writer use language to describe…?*** 1. Re-read the relevant section, highlighting 3-4 appropriate quotations. 2. Quickly annotate these quotations. 3. Write 3-4 paragraphs ***12 marks – 15 minutes***	1. ***Address reader***: talking to the reader (you) 2. ***Alliteration***: sound repeated at the start of words 3. **Allusion**: reference to another text or event 4. ***Amplification***: repeating an idea whilst adding more detail 5. ***Anaphora***: repetition of the same words at the start of phrases (e.g. we will fight them on the beaches, we will fight them on the landing places…) 6. ***Anecdote***: short, personal story used to illustrate a point 7. ***Chiasmus***: reversing the order of repeated words 8. ***Emotive language***: vocabulary which appeals to the emotions 9. ***Hyperbole***: over-exaggeration 10. ***Imperative verbs***: command verbs 11. ***Irony***: words conveying the opposite of the apparent meaning (e.g. More homework – how exciting!) 12. ***Juxtaposition***: placing contrasting ideas side by side 13. ***Metaphor***: comparing two things 14. ***Personification***: giving an object human characteristics 15. ***Plural pronouns***: we, our, us 16. ***Rhetorical question***: a Q intended to prompt thought, not asking for an answer 17. ***Simile***: comparing using "like" or "as" 18. ***Statistics***: using numbers as facts 19. ***Symbolism***: using an image or object to represent an idea 20. ***Triple***: a list of three	***What*** ○ Respond directly to the Q using precise vocabulary ○ Use "in order to" to address key concepts ***How*** ○ Select precise evidence ○ Embed fluently in a sentence ***Why*** ○ What do the words suggest, imply or symbolise? ○ Explore more than one interpretation / word. ○ Use subject terminology	The writer portrays … as … in order to suggest that… This is clear when we read "…" Evidence of this is "…" This means that… We learn that… The writer communicates that… The word / language device suggests / conveys… This indicates that… In addition, the word / language device is used because… This reinforces the idea that…
4: comparing the language in both sources	***Refer to Source A and Source B. Compare how writers convey similar perspectives on….*** 1. Planning table – ideas for Source A / ideas for Source B. 2. Draw lines to link ideas. 3. 2-3 paragraphs. ***16 marks – 20 minutes***	***See Question 3*** ***Use analytical verbs to prompt you to consider key concepts ("big ideas"):*** ○ ***presents***: portrays, conveys ○ ***shows***: demonstrates, illustrates ○ ***suggests***: hints, implies, indicates ○ ***reveals*** that…: exposes, clarifies ○ ***emphasises***: confirms, highlights ○ ***creates*** debate about…: initiates, generates, provokes ○ ***explores*** the idea that…: considers, prompts, questions ○ ***challenges*** the idea that…: confirms ○ ***confirms*** the idea that…: supports, justifies, develops ○ ***believes***…: perceives, trusts, learns, observes ○ ***considers***…: appreciates, clarifies, examines ○ ***sympathises***…: emphasises, senses, pities, understands ○ ***discovers***…: realises, understands, decides, concludes ○ ***develops*** the idea that…: builds, changes	***What*** ○ Start with a comparative connective (both…) ○ Respond directly to the Q using precise vocabulary ○ Use "in order to" ***How*** ○ Select precise evidence ○ Embed fluently in a sentence ***WHY*** ○ What do the words suggest, imply or symbolise? ○ Explore more than one interpretation / word. ○ Use subject terminology ***Comparative sentence*** then ***What, how why*** for Source B.	In both texts, the writers present… as… In Source A, the writer does this in order to suggest that… This is clear when we read "…" Evidence of this is "…" This means that… The writer communicates that… The word / language device suggests / conveys… This indicates that… In addition, the word / language device is used because… This reinforces the idea that… Similarly / In contrast in Source B the writer shows… to be…

Writer's Viewpoints and Perspectives (GCSE English Language Paper 2 Section B – AQA)

Example question:

Statement of opinion, linked to the Sources in Section A. start by drawing an agree/disagree table to generate ideas.

Instructions for which Genre, Audience and Purpose to use

24 marks for content and organisation; 16 marks for technical accuracy (40 marks)

Structuring your writing

Beginnings	Imagine this:…. Now imagine this:….	-Use descriptive language techniques -Juxtapose two views on the same topic *-e.g. Imagine this: a world in which social media has ruined young people's mental health due to emphasis on body image…. Now imagine this: a world in which social media boosts mental health because it helps people connect…*
	One word + amplification	*-e.g. Social media. What comes to mind when you hear these words? Well, to many people social media conjures up images of… and…*
	Anecdote	-Use descriptive language techniques -Use a personal story to engage your reader *-e.g. Josie joined Instagram when she was 14, three years after she started endlessly pestering her parents to get an account. But after just one week, it all went wrong…*
Middles	XXOX	X = agree, O = show the other side of the argument (then demolish it)
	Develop your points	Use descriptive language and detailed anecdotes to expand on your ideas
Endings	Circular structure: return to the start	*e.g. Remember the world we imagined…* Return to the character you described in your opening anecdote. How have they changed? What might they have learned? How has your perspective on this character's situation changed?
	Use collective language and a call to action	*e.g. Let's join together in a call to improve social media. Our voices need to be heard so that the technological giants which increasingly control our online interactions will change for the better…*
	Offer a solution	e.g. In order to see an improvement in this, we need to…

GAP the question:

Genre	Newspaper article	Include a headline Broadsheet – serious, academic, factual Tabloid – less serious, humorous, focussed more on personal stories and experiences
	Speech	Address the audience directly Use inclusive pronouns (we, us, our) Use anecdotes which the audience will relate to
	Letter	Start with *Dear…* End with *Yours faithfully…*
	Blog	Slightly more informal; but not as chatty as the examples <u>you</u> will have read online Include the audience (we, our) Include personal stories and experiences
Audience	Formal	Teacher Headteacher Politician
	Informal	Friends Class at school Year group Family
Purpose	To persuade or argue	You need to provide evidence (facts, statistics, anecdotes) to convince your readers to agree with you
	To inform or describe	Explain your point of view on a topic or detail your experiences

Using a range of sentence structures – start with…

1.–ing verbs	**Consider** the idea that…
2. Two or three adjectives	**Unsettling, worrying and disturbing,** the idea…
3. –ly adverbs	**Importantly,** we must consider…
4. A preposition (over, under)	**Above all else**…
5. A simile	**Like a…**
6. A connective	**First**, we..
7. The noun – adjective, adjective - sentence:	**Social media – dangerous and attractive** – draws all of us in…
8. More, more, more sentence:	The **more** you tweet, the **more** likes you get…

Using a range of punctuation

.	End a sentence
,	Separate clauses in a sentence (where you take a breath)
-	Add additional information in an informal way
;	Add additional information – full sentence before and after the ;
:	Introduce a list OR a shocking idea e.g. Morning arrived: disaster!
( )	Include additional information that isn't essential to the sentence
?	Pose a question
!	Show shock or surprise (use sparingly)
'	Indicate possession (Amy's work) or omission (I can't do it)

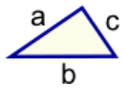
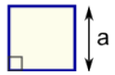
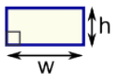
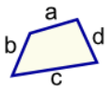
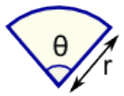
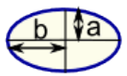
Excellence criteria for self-assessment

	Target
Content and organisation: 24 marks	**Communication is convincing** – *it reads like an article*
	Communication is compelling – *it is an article I would be interested in reading*
	Tone, style and register are matched to audience – *you have written in the style of a journalist*
	Extensive and ambitious use of vocabulary
	Sustained crafting of linguistic devices – *you have used a range of language devices throughout*
	Use of structural features – *e.g. circular structure*
	Inclusion of a range of complex ideas – *e.g. you explore different points of view and perspectives*
	Paragraphs are linked
Technical accuracy: 16 marks	**Sentence demarcation is accurate** – *full stops, commas etc are in the correct place*
	Wide range of punctuation used accurately
	Uses the full range of sentence forms for effect
	Secure control of complex grammatical structures
	High level of accuracy in spelling
	Extensive and ambitious use of vocabulary

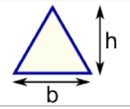
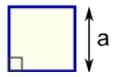
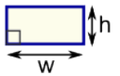
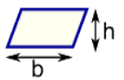
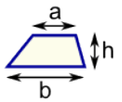
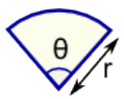
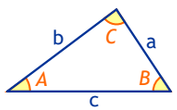
Year 10 Mathematics Knowledge Organiser	Topic	What is the plural of formula, formulas or formulae?
	Summer: Key Formulae	A formula is a mathematical relationship or rule expressed in symbols. The long-standing plural of formula is formulae, as plurals of this area come under the influence of scientific Latin. In recent years, there has been a normalisation towards the more traditional addition of "s" and so either form can be used, but it is always more enjoyable when using formulae, pronounced *for·mu·lae [fawr-myuh-lee]*

Geometry and Measures – Key Formulae (Those marked with an asterisk will be given in the exam)

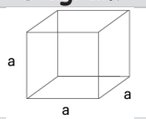
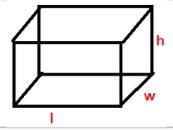
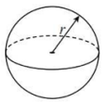
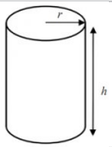
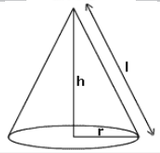
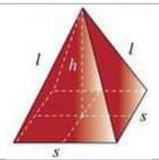
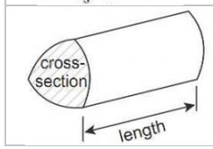
Perimeter

Diagram	Shape	Perimeter formula
	Triangle	a + b + c
	Square	4 × a
	Rectangle	2(h + w) or 2h + 2w
	Quadrilateral	a + b + c + d
	Circle	πd or 2πr
	Arc Length	$\frac{\theta}{360} \times 2\pi r$ or $\frac{\theta}{360} \times \pi d$
	Perimeter	Arc Length + 2r
	Ellipse	Pretty hard!

Area

Diagram	Shape	Area formula
	Triangle	$\frac{1}{2}bh$
	Square	a^2
	Rectangle	width × height = wh
	Parallelogram	base × height = bh
	Trapezium	$\frac{1}{2}(a+b) \times h$
	Circle	πr^2
	Sector Area	$\frac{\theta}{360} \times \pi r^2$
	Triangle	$\frac{1}{2}ab \sin C$

Volume

Diagram	Shape	Volume formula
	Cube	a^3
	Cuboid	length × width × height = lwh
	Sphere*	$\frac{4}{3}\pi r^3$
	Cylinder	$\pi r^2 h$
	Cone*	$\frac{1}{3}\pi r^2 h$
	Pyramid*	$\frac{1}{3} \times base\ area \times height$
	Prism	Area of cross-section × length

Year 10 Mathematics Knowledge Organiser

Topic

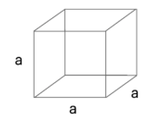
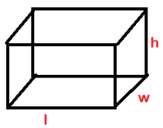
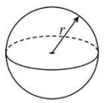
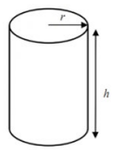
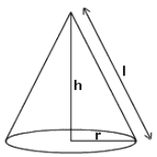
Summer: Key Formulae

What is the etymology of the word hypotenuse?

The hypotenuse is the side of a right triangle that's opposite the 90-degree angle. It's a term specific to math, specifically geometry. Hypotenuse comes from the Greek word *hypoteinousa* which means "**stretching under**." The hypotenuse "stretches under" the right angle of a triangle, which has an angle of 90 degrees.

Geometry and Measures (cont.)

Surface Area

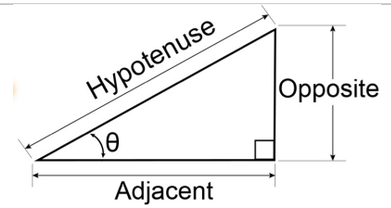
Diagram	Shape	Su. Area formula
	Cube	$6a^3$
	Cuboid	$2lw + 2wh + 2lh$ or $2(lw + wh + lh)$
	Sphere	$4\pi r^2$
	Cylinder	$2\pi r^2 + 2\pi rh$ $= 2\pi r(r + h)$
	Cone	πrl where l is the slant height of the cone

Other questions e.g. triangular prisms would involve the use of elements contained here and in the Area section

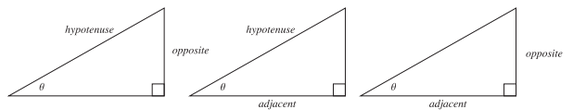
Trigonometry

Trigonometry is a branch of mathematics that studies relationships between side lengths and angles of triangles.

Right-angled Triangles

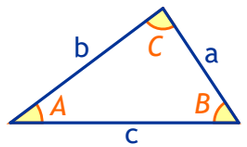


The Trigonometrical Functions



All Triangles

In any triangle ABC where a, b and c are the length of the sides:



The Sine and Cosine Rules

sine rule: $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

cosine rule: $a^2 = b^2 + c^2 - 2bc\cos A$

Algebra

Quadratic Formula

The solution of $ax^2 + bx + c = 0$ where $a \neq 0$ is

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

Key Terminology

Identity

An **identity** is an equation which is always true, no matter what values are substituted.

Examples

$4(x + 3) \equiv 4x + 12$

$(x + y)(x - y) \equiv x^2 - y^2$

Algebraic Manipulation

Algebraic manipulation refers to the manipulation of algebraic expressions, often into a simpler form or a form which is more easily handled and dealt with.

Examples

Being asked to solve an equation

e.g. Solve $5x + 3 = 2x + 10$

Being asked to simplify an expression

e.g. Expand and simplify $(3x + 4)(x - 1)$

Being asked to factorise an expression

e.g. Factorise $x^2 + 5x - 24$

Year 10 Mathematics Knowledge Organiser

Topic

Summer 2: Probability

What is relative frequency?

Relative frequency is the number of times an event happens, divided by the total number of outcomes that took place in an experiment, known as the number of trials.

It is sometimes also known as **experimental probability**. The more times an experiment is carried out, the more reliable the relative frequency will be and closer to the theoretical probability.

Probability Notation

Probability notation is an efficient way of writing the probability of events happening or not happening. To do this we use **set notation**, which is used when working with Venn diagrams.

Events are usually notated using capital letters, as well as the use of some greek letters.

$P(A)$	Event A	The probability of event A happening.
$P(A')$	Complement	The probability of event A not happening.
$P(A \cup B)$	Union	The probability of event A or B happening.
$P(A \cap B)$	Intersection	The probability of event A and B happening.

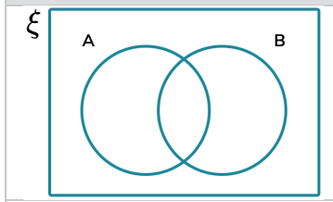
Venn diagram symbols are a collection of mathematical symbols that are used within set theory. Venn diagrams were created by mathematician John Venn and are used widely today within computer sciences, problem-solving and set theory.

Symbol	Description
$\{\}$	Curly Brackets, contain all items in a set
,	Comma - separates all items in a set
'	Complement - the items not in a set
ξ	The Universal Set - contains all items in every set and subset required
ϕ	The Empty Set - contains no items

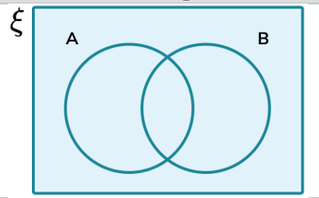
To describe a mathematical set using symbols, we need to know the symbols, and what they represent.

We will mainly look at two sets: set A and set B. The shaded region shows the items within the set. Firstly, we start with the universal set, ξ . We represent this as a rectangle and draw the symbol around the outside.

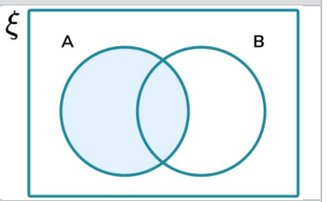
Venn Diagrams



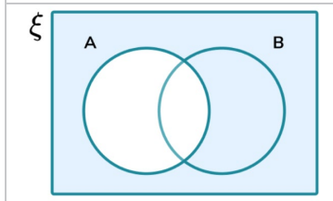
Here are the two sets, A and B



The universal set, ξ

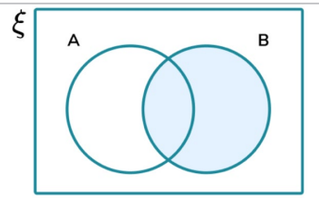


A



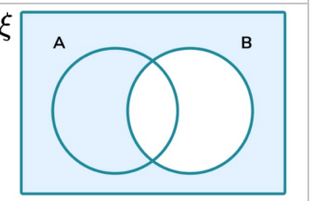
A'

Everything but A is **A'**



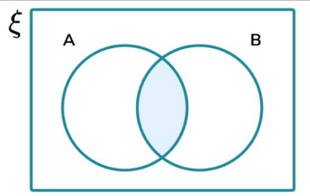
B

B



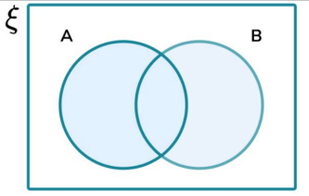
B'

Everything but B is **B'**



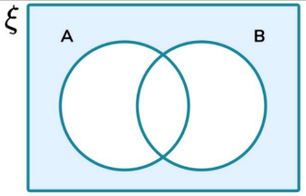
A∩B

The intersection, A and B



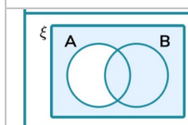
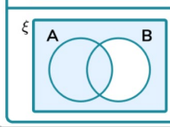
A∪B

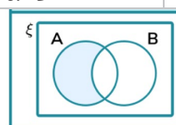
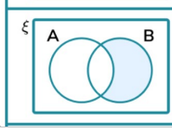
The union of A and B, which we call **A or B**



(A∪B)'

The compliment of A or B

	A'∪B	Not A, or B (the **complement** of A, **union** B) Not A, **union** B
	A∪B'	A, or Not B (A **union** the **complement** of B) A **union** Not B

	A∩B'	Just A (A **intersection** B') A and not B
	B∩A'	Just B (B **intersection** A') B and not A

Year 10 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 it's a 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

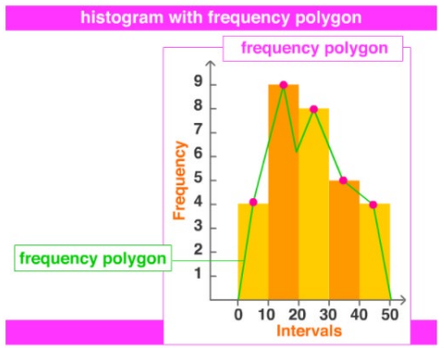
Find the Highest and Lowest numbers and calculate **Highest - Lowest**

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

Frequency Polygons

A line graph which joins the midpoints of the top of the bars on a frequency histogram.

A frequency polygon gives a picture of the shape of the data distribution.

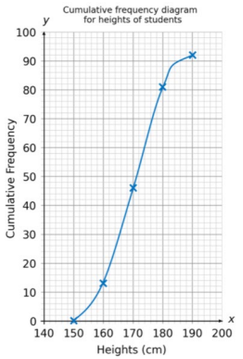


Cumulative Frequency Diagram

Cumulative means "how much so far". *Think of the word "accumulate" which means to gather together.*

To have cumulative totals, just **add up the values as you go** and then we can create a **cumulative frequency diagram**

From this we can find the **Lower and Upper Quartiles** and **the Median**



Key things to remember

- A cumulative frequency diagram is **drawn by plotting the cumulative frequency against the upper class boundary of the respective group.**
- Cumulative frequency is plotted on the **vertical axis** and the other value is plotted on the horizontal axis
- We then join the points by freehand to create a smooth curve

Pie Chart

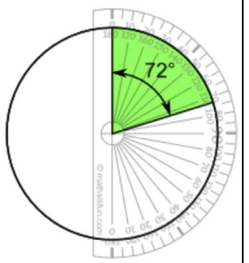
A **Pie Chart** is a graph using a divided circle where each section represents a percentage of the total.

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

The Pie Chart Checklist

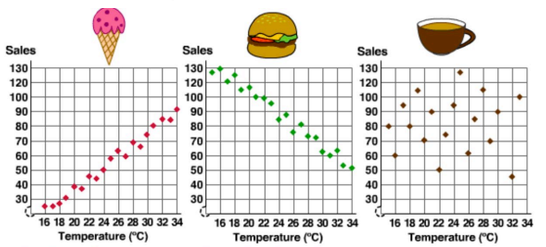
Remember that there are 360° in a circle so each group in the pie chart will be a proportion of 360°.

- ☐ 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.
- ☐ 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.

Hence, or otherwise, ..

Using the answer to the previous question (the hence part), or using an alternative method, can you solve the given question

Example Application

Hence, or otherwise, solve the equation $x^2 + 6x - 16 = 0$

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

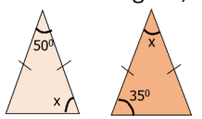
Work out three-quarters of one-fifth of 100

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,



1) Principles of Homeostasis

Many of the processes that occur inside of the body aim to keep everything as constant as possible. This constant maintenance of an internal environment is called **homeostasis.**

Internal conditions that are controlled include:

- Body temperature
- Water content
- Blood glucose levels.

All controls in the body need certain key features to function:

- **Receptors:** cells that detect changes in the environment. These changes are known as **stimuli.**
- **Co-ordination centres:** areas that receive and process the information from the receptors. They send information around the body so that the body can respond.
- **Effectors:** muscles or glands that bring about changes in response to the stimuli.

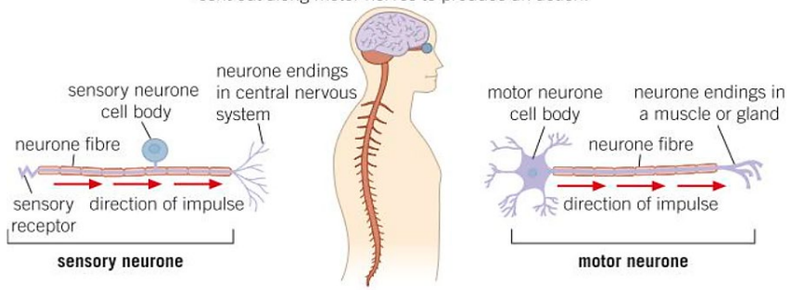
2) Structure and function of the human nervous system

Your nervous system carries **electrical impulses** that travel around the body very quickly.

The way your nervous system works can be summed up as:

stimulus → receptor → coordinator (CNS) → effector

Sensory nerves carry impulses to the CNS. the information is processed and impulses are sent out along motor nerves to produce an action.



Measuring reaction times

There are many ways to investigate how quickly nerve impulses travel in your body. Two simple methods are:

- use the ruler drop test or digital sensors to measure how quickly you react to a visual stimulus

3) Reflex actions

Some of the body's responses happen so fast that you do not think about them. These automatic responses are known as **reflexes.** Some of these reflexes help you to avoid danger or carry out basic bodily functions.

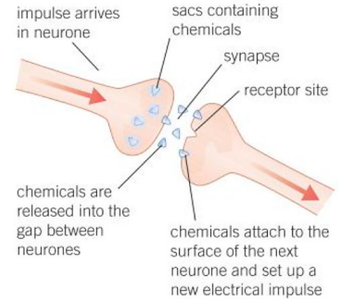
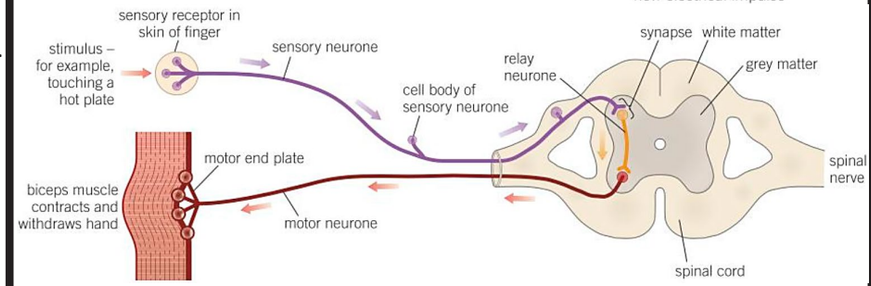
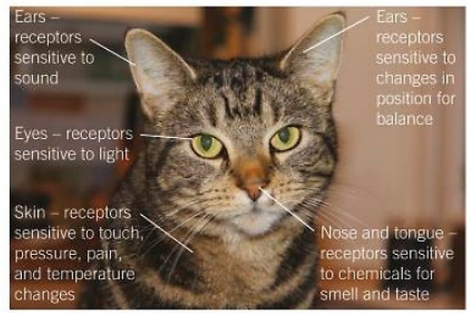


Figure 2 *When an impulse arrives at the junction between two neurones, chemicals are released that cross the synapse and arrive at receptor sites on the next neurone. This starts up a new electrical impulse in the next neurone.*



Key points

- Reflex actions are automatic and rapid and do not involve the conscious parts of the brain.
- Reflexes involve sensory, relay and motor neurones.
- Reflex actions control everyday bodily functions, such as breathing and digestion, and help you to avoid danger.
- The main stages of a reflex arc are: **stimulus → receptor → sensory neurone → relay neurone → motor neurone → effector → response**



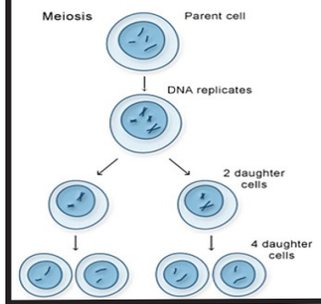
Year 10 Biology: Nervous system Key Vocabulary

Key word	Definition	Contextual Sentence
central nervous system (CNS)	The part of the nervous system where information is processed. It is made up of the brain and spinal cord.	The **central nervous system (CNS)** co-ordinator of the human body.
coordination centres	Areas that receive and process information from receptors.	The brain and the spinal cord are the **coordination centres** of the human body.
effectors	Areas (usually muscles or glands) that bring about responses in the body.	When blood sugar levels are high, the pancreas acts as an **effector** and releases insulin to lower them.
homeostasis	The regulation of the internal conditions of a cell or organism to maintain optimum conditions for function, in response to internal and external changes.	Sweating and shivering are both examples of your body responding to changes in temperature to achieve **homeostasis.**
motor neurone	Carry impulses from the central nervous system to effector organs.	The **motor neurone** is the final neurone an impulse will travel along before it reaches an effector.
nerve	Bundle of neurones.	The total lengths of **nerve** in a human body can reach up to 37 miles.
neurones	Cells of the nervous system that carry minute electrical impulses around the body.	**Neurones** are examples of specialised cells that are highly adapted to transmit electrical impulses.
receptors	Cells that detect stimuli- changes in the internal or external environment.	Eyes have specialised **receptor** cells to detect light.
reflex arcs	Bring about a reflex action. They involve the sense organ, sensory neurons, relay neurone, and motor neurone.	An impulse can take milliseconds to travel through a **reflex arc.**
reflexes	Rapid automatic responses of the nervous system that do not involve conscious thought.	**Reflexes** allow our bodies to respond to danger quickly.
sensory neurone	Neurone that carries impulses from the sensory organs to the central nervous system.	**Sensory neurones** can reach 1.5m in length.
stimuli	Changes in the external or internal environment that can be detected by receptors.	Sounds, temperature, and pressure are all examples of **stimuli.**

Sexual and asexual reproduction

	Asexual reproduction	Sexual reproduction
Advantages	Only **one parent** is needed. Process is **very fast.** Enables an organism to **quickly colonise** an area.	Lots of **genetic variation**. Population is **less likely** to be wiped out by disease/ competitor/ new conditions. Allows **evolution** to occur.
Disadvantages	All offspring are **clones.** **No genetic variation**- can become extinct due to new **disease/ competitor/ new conditions.**	Much more **time** and **energy** consuming (need to **find mate**). Need to **impress** mate.

Meiosis



Gametes (sex cells) are produced in meiosis. Gametes only have **one set of chromosomes** (23). In meiosis, the genetic material is copied, and the cell divides twice forming 4 gametes. All of these gametes are **genetically different** from each other.

DNA and the genome

The **genome** of an organism is the entire genetic material of that organism. The whole **human genome** has now been studied and it allows genes that code for certain diseases to be found early. The genetic material in a nucleus is made of **DNA**, which is a polymer made up of 2 strands forming a **double helix**.

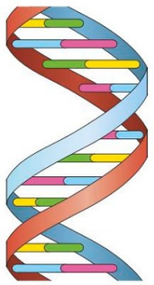


Figure 1 *The DNA double helix*

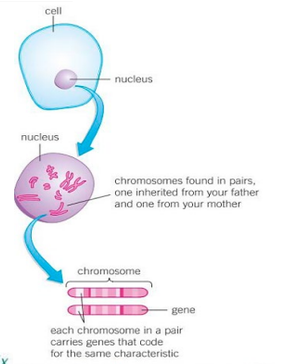
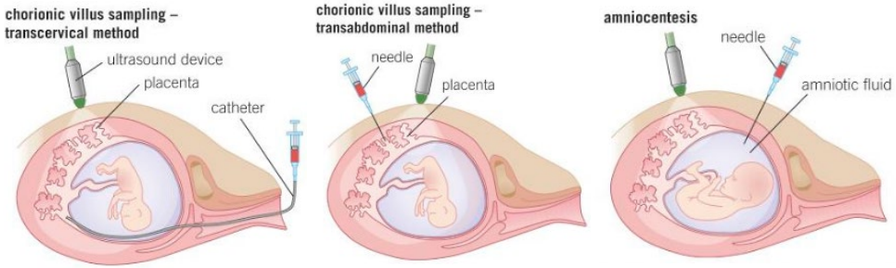


Figure 2 *The relationship between a cell, the nucleus, the chromosomes, and the genes*

Screening for inherited disorders



Cells from embryos and fetuses can be screened for the alleles that cause many genetic disorders. Embryo and foetal cells are used to identify genetic disorders but screening raises economic, social, and ethical issues.

Inheritance in action

- **homozygote** – an individual with two identical alleles for a characteristic, for example, **BB** or **bb**
- **heterozygote** – an individual with different alleles for a characteristic, for example, **Bb**
- **genotype** – this describes the alleles present or genetic makeup of an individual regarding a particular characteristic, for example, **Bb** or **bb**
- **phenotype** – this describes the physical appearance of an individual regarding a particular characteristic, for example, black fur or brown fur in a mouse.

Phenotype: brown fur
Genotype: bb
Phenotype: black fur
Genotype: BB or Bb

Cross 1: bb × BB

Gametes	B	B
b	Bb	Bb
b	Bb	Bb

Offspring:
genotype: all Bb
phenotype: all black fur

Cross 2: bb × Bb

Gametes	B	b
b	Bb	bb
b	Bb	bb

Offspring:
genotype: 50% Bb, 50% bb
phenotype: 50% black fur, 50% brown fur

Figure 2 *Determining phenotype*

Inherited disorders

Polydactyly is a genetic disorder in which someone is born with extra fingers or toes. It is caused by a **dominant allele.**

parents	father has polydactyly	mother does not have polydactyly
parents' genes	Pp	pp
parents' gametes	P p	p p

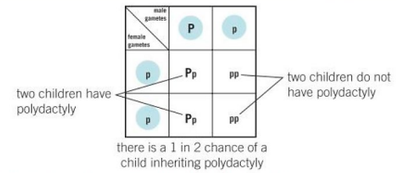


Figure 2 *A genetic diagram for polydactyly*

C = dominant allele (normal metabolism)
c = recessive allele (cystic fibrosis)

Both parents are carriers, so (Cc)

	C	c
C	CC	Cc
c	Cc	cc

Genotype of offspring:
25% normal (CC)
50% carriers (Cc)
25% affected by cystic fibrosis (cc)

Phenotype of offspring:
3/4, or 75% chance normal
1/4, or 25% chance cystic fibrosis

Figure 3 *A genetic diagram for cystic fibrosis*

Cystic fibrosis is a genetic disorder in which cells produce **excess mucus**. This mainly affects **the lungs and digestive system**. CF is caused by a **recessive gene**. People can be carriers of the gene and have children with CF.

Year 10 Biology: Genetics and Reproduction Key Vocabulary

Key word	Definition	Contextual Sentence
alleles	Different forms of the same gene sometimes referred to as variants.	People have different eye colours due to having different **alleles**.
asexual reproduction	Involves only one individual and the offspring is identical to the parent. There is no fusion of gametes or mixing of genetic information.	**Asexual reproduction** can be used by an organism to quickly colonise an area.
bases (DNA)	Nitrogenous compounds that make up part of the structure of DNA and RNA. They are represented by the letters A, T, C, and G.	The proteins that DNA codes for can be altered if there is a change in the **base** sequence.
carriers	Individuals who are heterozygous for a recessive allele linked to a genetic disorder. Carriers have one healthy allele so are not affected themselves but they can pass on the affected allele to their offspring.	If two **carriers** of cystic fibrosis meet then they could potentially have a child who will have cystic fibrosis.
cystic fibrosis	An inherited disorder that affects the lungs, digestive, and reproductive system and is inherited through a recessive allele.	Only around half of the people who have **cystic fibrosis** will live past 40.
dominant allele	The phenotype will be apparent in the offspring even if only one of the alleles is inherited.	Polydactyly is a genetic disorder caused by a **dominant allele**.
genetic engineering	The process by which scientists can manipulate and change the genotype of an organism.	**Genetic engineering** can be used to genetically modify crops to give farmers better yields.
genotype	The genetic makeup of an individual for a particular characteristic, for example hair or eye colour.	The **genotype** of an individual will determine their phenotype.
heterozygote	Individual with different alleles for a characteristic.	A **heterozygous** person will have both a dominant and recessive allele.
homozygote	Individual with two identical alleles for a characteristic.	A **homozygous** person will have only either dominant or recessive alleles.
meiosis	Two stage process of cell division that reduces the chromosome number of daughter cells. It is involved in making gametes for sexual reproduction.	Sperm and egg cells are created through the process of **meiosis.**
mutation	A change in the genetic material of an organism.	Occasionally, **mutations** can cause a new adaptation to arise.
natural selection	Only those that are most suited to their environment will survive to breed and pass on their useful characteristics to their offspring.	**Natural selection** can eventually lead to a new species being formed (evolution).
nucleotide	A molecule made up of a sugar, a phosphate group, and one of four different bases. They are key units in the structure of DNA and RNA.	The DNA polymer is made from repeating **nucleotide** units.
phenotype	The physical appearance / biochemistry of an individual for a particular characteristic.	A person's **phenotype** is determined by their genotype.
polydactyly	A dominant inherited disorder that results in babies born with extra fingers and/or toes.	**Polydactyly** can be easily treated by removing the extra digits at an early age.
punnet square diagram	A way of modelling a genetic cross and predicting the outcome using probability.	Scientists can predict the probability of somebody inheriting a genetic disorder by using a **punnet square diagram**.
recessive	A phenotype that will only show up in the offspring if both of the alleles coding for that characteristic are inherited.	If somebody has a **recessive** genotype, then they will have two recessive alleles e.g bb.
sex chromosomes	Carry the information that determines the sex of an individual.	In humans, females have XX **sex chromosomes**, with males having XY.
sexual reproduction	Involves the joining (fusion) of male and female gametes producing genetic variation in the offspring.	**Sexual reproduction** is more energy consuming than asexual reproduction, however it leads to variation which can be very beneficial.

Year 10 Chemistry: Crude Oil

Finite resource	A **non-renewable** resource used by humans that has a **limited supply** e.g. coal.
Renewable resources	A resource used by humans that can be **replenished** e.g. trees. If not managed correctly, the resource may decrease.
Potable water	Water that is **safe to drink**. Has **low levels of dissolved salts** and **microbes**.
Fresh water	Water that has **low levels of dissolved salts**. Rainwater is an example of fresh water but sea water is not.
Pure water	**Only** contains **water molecules**, nothing else.
Desalination	A process that **removes salt from sea water** to create potable water. **Expensive** as it **requires a lot of energy**.
Sewage	**Wastewater produced by people**. Contains potentially dangerous **chemicals** and large numbers of **bacteria**.
Reverse osmosis	Uses **membranes** to **separate dissolved salts** from **salty water**.
Natural resource	Natural resources have **formed without human imput**, includes anything that comes from the earth, sea or air (e.g.cotton).
Synthetic resource	Synthetic resources are **man made.**
Aerobic	With oxygen.
Anaerobic	Without oxygen.
Sustainable development	Using resources to meet the needs of people today without preventing people in the future from meeting theirs.
Life cycle assessment	A life cycle assessment looks at every stage of a product's life to assess the impact it would have on the environment.
Subjective judgement	Judgement based on a person's opinion and/or values.
Phytomining	Plants are used to absorb metal compounds from the soil as part of the metal's extraction.
Bioleaching	Use of bacterial to convert metal compounds in ores into soluble metal compounds which can then be extracted.
Leachate	A solution produced from bioleaching.
Atmosphere	the relatively thin layer of gases that surround planet Earth.
Carbon footprint	the total amount of carbon dioxide and other greenhouse gases emitted over the full life cycle of a product, service or event.
Particulate	small solid particle given off from motor vehicles as a result of incomplete combustion of its fuel.
global dimming	a process that reduces the amount of sunlight reaching the Earth's surface. It is caused by particulates in the atmosphere reflecting light back into space before it can reach Earth.

What is Crude Oil?

Crude oil is a finite resource that is formed from dead plant and animal that have been buried under the sea floor. Over time layers of silt and sand built up on it, causing the carbon-based organisms to break down under the heat and pressure.

What is crude oil made up of?

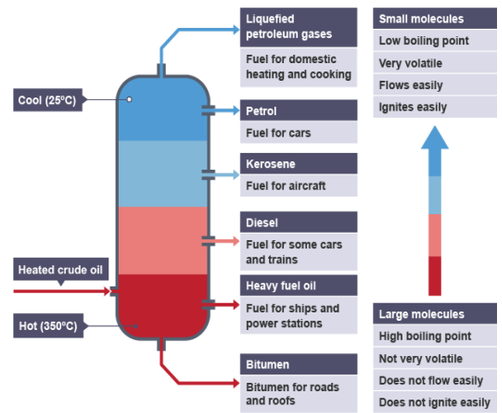
Crude oil is a mixture of different length **hydrocarbons** from the **alkane** family. A **hydrocarbon** is a compound that is made up of only carbon and hydrogen atoms.

Crude oil is fairly useless when its first taken out of the ground, however, once the mixture is separated into its different substances, known as fractions, they become useful.

Fractions & Fractional Distillation

Below is a diagram that represents **fractional distillation**. The crude oil is made up of **different length molecules**. We can separate out the different lengths **(fractions)** using the boiling points of each molecule length. The longer chains exit towards the bottom and the short chain's exit towards the top.

The diagram also shows the **properties** of the lengths of molecules. These properties allow us to use them for different things; mostly for fuels.

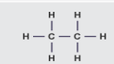
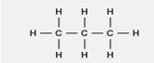
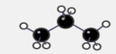
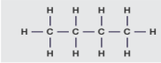
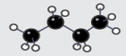


General Formula

Alkanes are a series of **hydrocarbons** which have the general formula C_nH_{2n+2}
It is called a **homologous** series, that is known as a single bonded, saturated **hydrocarbon**.

HOMOLOGOUS

Same **Relation**

Alkane	Molecular formula	Structural formula	Ball-and-stick model
Methane	CH_4		
Ethane	C_2H_6		
Propane	C_3H_8		
Butane	C_4H_{10}		

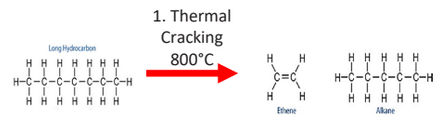
Structure and bonding of alkanes

Covalent bonds are **strong** – a lot of energy is needed to break them. Substances with covalent bonds often form **molecules** with low melting and boiling points.

Cracking and alkenes

Cracking is a reaction in which larger saturated **hydrocarbon molecules** are broken down into smaller, more useful hydrocarbon molecules. There are 2 main methods

1. **Thermal Cracking**
2. **Catalytic Cracking**



2.Catalytic Cracking
550°C + Zeolite Catalyst

Year 10 Chemistry: The Earth's Atmosphere

This history of the Atmosphere

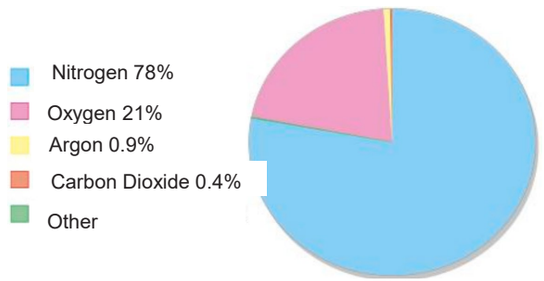
There are lots of ideas about how the Earth and atmosphere formed based on some evidence found. These are called theories. Scientists use theories when there is a lack of evidence to say what really happened. No one was around 4.6 billion years ago to take photos and write it all down!!!

One theory is that intense volcanic activity release gases, such as CO_2, CH_4, H_2O and N_2 into the atmosphere, which is similar to Mars or Venue now. It is thought that there was little/no oxygen.

From this, as the Earth started to cool down, the water vapour (H_2O) would **condense** and fall to the ground to make the oceans. It is also believed that **comets** brought more water to the Earth.

The CO_2 in the atmosphere would have **dissolved** in the oceans, this then led to carbon-based organisms forming and oxygen being produced over time, in the process of **photosynthesis.** This contributed to the **increasing the oxygen levels.**

The Current Atmosphere

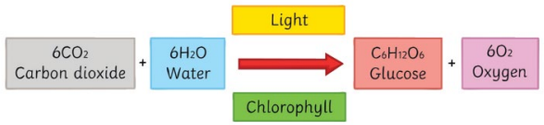


Over the last 200 million years, the proportions of gases in the Earth's atmosphere has stabilised. See the pie chart above.

Approximately four-fifths (80%) of the atmosphere is **nitrogen** and one-fifth (20%) is **oxygen.**
There are some noble gases in the atmosphere, the most abundant is argon, but there is also a small amount of neon, krypton and xenon.

How did the oxygen levels increase over time?

Around 2.7 billion years ago the first carbon-based organism formed; algae. It is believed that it first produced oxygen, through the process of **photosynthesis.** As the organisms evolved, the levels of oxygen increased. This led to more complex life forms developing.



How did the carbon dioxide levels decrease over time?

There are a few ways that carbon dioxide was reduced over time;

1. Carbon dioxide **dissolved in the water** (oceans).

2. A lot of carbon dioxide become **locked-up** in the Earth's Crust. The dissolved carbon dioxide (CO_2) produced carbonate compounds, that formed a precipitate, what we know today as limestone, a sedimentary rock. The chemical name for limestone is calcium carbonate.

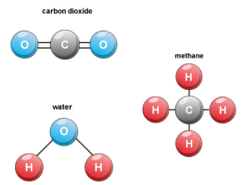
3. Plants **absorb** carbon dioxide during the process of photosynthesis. Any lifeforms that relied on plants fell to the bottom of the seabed and were trapped under layers of sand and mud, over time and under a lot of pressure and heat, and an environment where there was no oxygen, it was turned into fossil fuels.

Meet the greenhouse gases?

Greenhouse gases is a term used for a group of gases that absorb energy radiated by their surface.

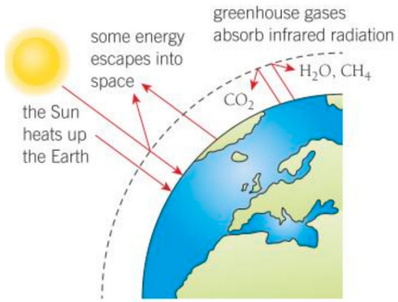
The main greenhouse gases are:
- **Carbon dioxide (CO_2)**
- **Methane (CH_4)**
- **Water Vapour (H_2O)**

Others can include (extra info)
- Chlorofluorocarbons (CFCs)
- Nitrous oxides (NOx)



Greenhouse Gases: how it warms the Earth

1. UV radiation from the Sun reaches Earth
2. Some Infra-Red re-radiated back into space
3. A portion doesn't reach space and is **absorbed** by greenhouse gases.
4. These gases re-radiate the Infra-Red radiation back to Earth.
5. This warms the Earth's surface.



Evidence of greenhouse gases

Over the last 200 years, there is an increase in the volume of CO_2 produced. This is mainly due to the advances in technology and the use of fossil fuels. CO_2 has been locked-up in fossil fuels for millions of years, but as we burn it, it releases CO_2.

Methane gets into our atmosphere from **swamps** and **rice fields**. Methane is also produced from **grazing cattle** and from **decomposing waste** (poop).

Landfill sites are another source that produces methane, from the **rotting food waste**. This has increased over the years due to the population increasing.

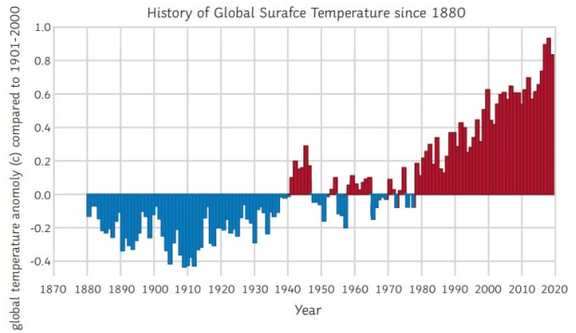
Scientists use "hard" evidence to link the levels of CO_2 with the climate and any changes. One source of evidence is the ice cores from Greenland, which have trapped gases over time. These can be dated and analysed for changes.

But remember it is difficult to predict with complete certainty the effects on the climate due to greenhouse gases, however, the evidence is showing trends which can be used to suggest the future effects.

Climate Change

Climate change is the long-term shifts in temperature and weather patterns. These changes can be natural or man-made.

Below is a graph that shows the surface temperature since 1880. This shows climate change. When considering the evidence, use a reputable source. This was taken from the University of Berkeley in USA.



Some scientists predict, based on evidence and research, that global warming may increase the Earth's average temperature by as much as 5.8°C by the year 2100. This would have a huge impact on the climate

The consequences of rising levels of greenhouse gases

We are already seeing the start of the consequences of climate change;

- Winters are getting shorter
- Rising sea levels: the ice caps are melting and this is expanding the warmer seas.
- Flooding of low-lying land.
- Increase coastal erosion (so islands could disappear)
- Increasing spurts of extreme weather conditions, such as severe storms.
- Changes in rainfall: temperature/volume/distribution. This could impact communities that produce food and less food will be produced.
- More wildlife becoming extinct, and the fast change in climate puts stress on the ecosystems.

What can we do?

We can reduce our carbon footprint. Reduce the amount of carbon dioxide we produce on a day-to-day basis.

What is a carbon footprint?

The carbon footprint of a product, service or event is;

the total amount of carbon dioxide and other greenhouse gases emitted over its full life cycle.

When companies are making a new product, they have to consider how much carbon dioxide/ greenhouse gases it will produce by making, transporting, using and recycling the product.

Other ways to reduce the carbon footprint

Electricity companies can use **carbon capture & storage**, using the waste product CO_2 from burning fossil fuels and capturing CO_2 produced and storing it underground in porous rock. However, it may increase electricity bills by roughly 10%.

Methane could decrease if more people ate plant-based meals, reducing the need for as many cattle. It also allows for more efficient use of the land to grow crops.

Car sharing / using public transport/walking will minimize the use of fuel for cars.

Why can't we just stop using fossil fuels?

Reducing greenhouse gases in the atmosphere relies mainly on reducing the use of fossil fuels, using alternative sources of energy and conserving energy.

Most economies of developed countries rely on fossil fuels and putting strategies in place to reduce this will cost money and take time to set up.

However, the changes are necessary because of the potential risks arising from global climate changes, such as sea levels rising and threats to food production.

Burning fossil fuels

There are two types of combustion: complete and incomplete combustion. **Complete combustion** happens when there is plenty of oxygen for fuel to burn.

Pentane + oxygen → carbon dioxide + water

$$C_5H_{12} + 8O_2 \rightarrow 5CO_2 + 6H_2O$$

Incomplete combustion happens when there is not enough oxygen to burn fully. The products for this can be CO, H_2O and / or carbon solids.

Ethane + oxygen → carbon monoxide + water

$$2C_2H_6 + 5O_2 \rightarrow 4CO + 6H_2O$$

Why is incomplete combustion so bad?

Carbon monoxide is a poisonous gas.

It's a colourless and odourless gas that can kill. It works by binding to the haemoglobin in your red blood cells and prevents oxygen from being carried around your body to your cells.

Carbon particulates (solids) irritate the lining of your lungs, this could make pre-existing conditions worse, like asthma. There are also links that it can cause cancer. The particulates also cause global dimming where the sun's rays are blocked out and reduce visibility.

Burning fuel in a car

This can produce what is known as **nitrogen oxides** with a general formula of **NOx**.

This happens when oxygen and nitrogen come together in a **hot environment**, like a car engine and there is enough activation energy to cause a reaction.

The NOx compounds can react with UV light in the atmosphere and produce photochemical smog, mainly in densely populated areas.

NO and **NO_2** are **toxic** and can trigger **asthma attacks**, they can also react with water to form nitric acid, and form **acid rain.**

Also when you burn fuel there are **impurities** in the hydrocarbons, such as **sulphur**. When this is released, **sulfur** reacts with the **oxygen** to form sulfur dioxide, which can then dissolve in rainwater to form **acid rain.** This can damage forests, and plants and erode buildings. It can then react further to form sulfur trioxide.

Natural resources from the Earth

We rely a lot on resources from the Earth to meet our needs for food, clothing, shelter, fuel and materials. Resources are classed as **finite** and **renewable** resources.

Food: water, Fruit, vegetables, crops and meat
Shelter: Wood, limestone and sand
Fuel: Crude Oil that produces propane, petrol and diesel that we use for transport
Materials such as metal ores from the Earth's crust.

Scientists are used for developing and advancing technology to assist with agriculture and industrial processes to meet the growing population demands in a sustainable way.

Sustainability

Sustainability is about ***meeting the needs of current society, without endangering the ability of future generations to meet their needs.***

Finite resources are resources that are being used up faster than they can be replaced, so if you can carry on using them, they will run out. Fossil fuels (coal, oil and natural gas) and limestone are examples of **finite** resources.

Renewable resources are resources that can be replaced at the same rate at which that is used up. Crops, wool, silk, rubber and wood are all examples of **renewable** resources.

Water

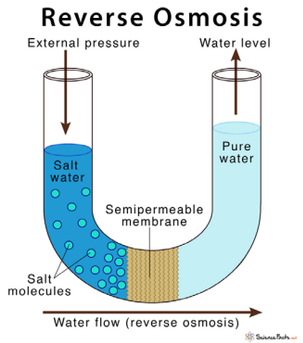
Water is a vital resource. It is used as a **raw material** for agriculture and in industry, such as solvents and coolants and its also used in washing, cleaning and for drinking. Most water supplies in the UK are source of **fresh water** (e.g. lakes, reservoirs, rivers or groundwater aquifers).
Safe drinking water is known as **potable water**. This means that it has been treated to remove any impurities from it. The impurities such as minerals (dissolved salts) or microorganisms are found naturally in the ground and can be harmful for human consumption.

How to purify salty water

Most water in the UK is fresh water, however, there are countries that don't have any freshwater supplies. Therefore, salt water is treated using processes such as **distillation** or **desalination**. **Distillation** is expensive due to the energy costs needed therefore most countries use **desalination.**

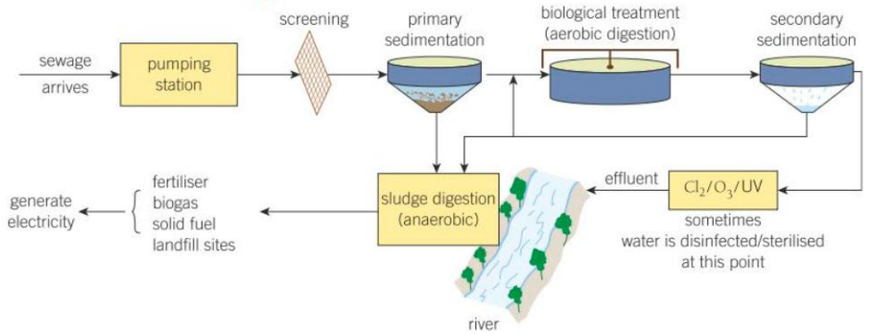
Desalination

Desalination uses reverse osmosis through a semipermeable membrane that removed the NaCl particles from the salt water.



Treating waste-water

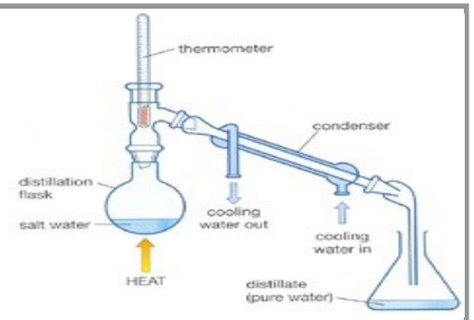
Waste water is water that has been used, normally in homes, that go down the sink/ shower/ bath/ toilet. It all enters a large sewer with waste from other houses/businesses/factories. This is named **sewage.** This waste water needs to be treated to make it safe before it can re-enter the environment. This process can be seen below:



Required Practical: Water Distillation

You can test the "**pure**" water you distil using several methods to see if it is **pure**. Remember, **pure** means that there is only one substance present.

- Measure the boiling point. **Pure water** boils are 100°C
- Test the pH value
- Burn a sample in a flame. Any Sodium will produce an orange/yellow flame.



Extracting copper from copper-rich ores (Higher)

Copper ore is a finite resource that is in danger of running out. There are two main methods in extracting copper.

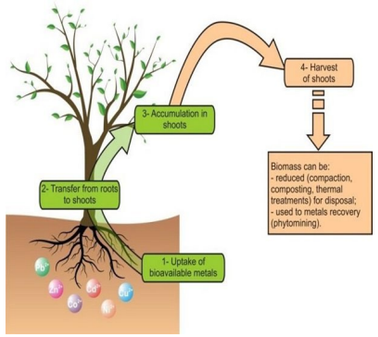
1. Sulfuric acid is used to produce copper sulfate solution before extracting the copper metal.
2. "Smelting" (roasting) the copper ore to a high temperature in a furnace to produce impure copper.

The impure copper will then need to go through the process of electrolysis to make pure copper. Electrolysis is a costly process due to the amount of energy (electricity) needed.

Extracting copper from low-grade ores

Due to the limited amount of copper, scientists have developed methods to extract copper from poor sources.

1. **Bioleaching** use bacteria to produce an acidic solution called leachate which contains copper ions. This can be harmful to the environment as it produces a toxic substance. The process used a displacement reaction with iron, which is a more cost-effective way to produce copper from leachate.
2. **Phytomining** uses plants. The plants absorb the copper compounds found in the soil. The copper ions build up in the plant's leaves. The plants are dried and burnt in a furnace. The ash is collected and dissolved in acid (hydrochloric or sulfuric) and then the copper is then extracted by electrolysis or through a displacement reaction with iron



Life Cycle Assessments (LCA)

An L.C.A or Life cycle assessment is an evaluation of all the resources used for the whole of a product's life. It assesses the environmental impact of the products. Data is available for the use of energy, water, Earths resources as well as the waste products that are produced.

What do we evaluate in an L.C.A?

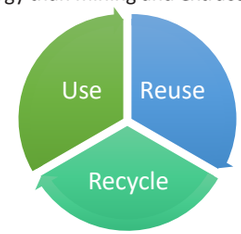
For our product, for example a plastic bag, we must evaluate each stage in its life. The five main stages are;

Raw materials → **Manufacture** → **Transport** → **Use** → **Disposal**

For each stage you need to think about how much it affects the environment, how much CO_2 is produced, what raw materials are being used, transport/fuel used, and whether it be reused, recycled or will it end up in landfill?

Reduce, Reuse & Recycle

There are social, economic and environmental issues associated with exploiting the Earth's limited resources of **raw materials** such as metal ores and crude oil. The environmental impact of products can be **reduced** by **reusing** the product. For example, glass bottles can be crushed and melted to produce different glass products. Whereas some materials can be **recycled** e.g., metals. Metals can be **recycled** by melting and recasting or reforming into different products. **Recycling** uses less energy than mining and extracting.



Recycling, **reusing** and **reducing** products have advantages and disadvantages.

Advantages

- Few resources such as mines and quarries are needed to remove raw, finite resources from the ground – such as copper.
- Crude oil, which is used to make plastics does not need to be extracted. This avoids using processes such as fractional distillation and cracking which require a lot of energy.
- In turn, the number of greenhouse gases would reduce as you reuse and recycle other products, which produces a lot fewer greenhouse gases.

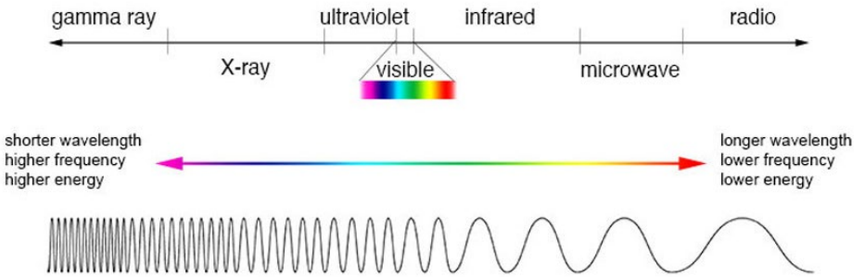
Disadvantages

- Recycling requires the collection and transportation of goods, which will have some impact on CO_2 production.
- Sorting and reusing metals can be difficult as the use depends on purity for example high-grade copper is needed for electrical goods.

Year 10 Physics: Electromagnetic Spectrum Knowledge

Electromagnetic Spectrum

The **electromagnetic spectrum** is a continuous range of wavelengths. The types of radiation that occur in different parts of the spectrum have different uses and dangers depending on their wavelength.



As the **wavelength** decreases the **frequency** increases.
As frequency increase, energy increases.
The greater the **frequency**, the more **dangerous** the wave.

All EM waves are transverse waves
They all travel at the speed of light (3 x 10^8 m/s)
They can all travel through a vacuum

Energy	Frequency	Wavelength	Radiation type	Typical use
Lowest	Lowest	Longest	**Radio waves**	Television signals
			Microwaves	Cooking, mobile phones
			Infrared	Optical fibre communication
			Visible light	Seeing
			Ultraviolet	Detecting forged bank notes
			X-rays	Medical images of bones
Highest	Highest	Shortest	**Gamma radiation**	Killing cancer cells

Ionising radiation

Ultraviolet waves, X-rays and gamma rays are types of **ionising** radiation.

They can add or remove **electrons** from molecules, producing electrically charged ions. Ionisation can have hazardous effects on the body

Ultraviolet waves can cause damage to skin cells and eyes, and increase the risk of **skin cancer.**

X-rays and **gamma rays** can cause the mutation of genes, which can lead to cancer

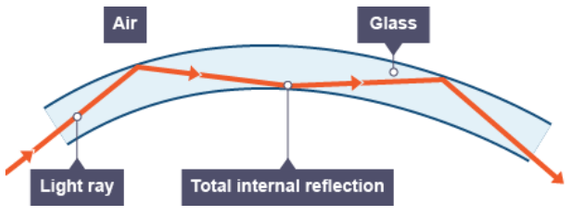
Non-Ionising radiation

Radio waves, microwaves, infrared and visible light are all **non-ionising** radiation.
They **cannot** add or remove **electrons** from molecules.
Radio waves are used for terrestrial communication (TV and radio) as it can not pass through atmosphere because it does not have enough energy

Microwaves are used for satellite communication (TV and mobile phones) as it can pass through atmosphere because it does not have enough energy

Optical Fibres

An **optical fibre** is a thin rod of high-quality glass. Very little light is absorbed by the glass. Light getting in at one end undergoes repeated total internal reflection, even when the fibre is bent, and emerges at the other end.



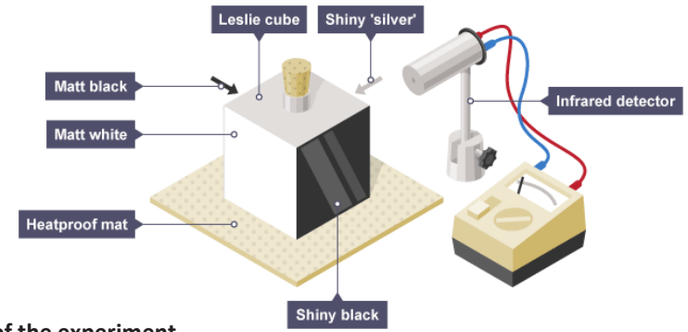
Uses of optical fibres
Optical fibres are used in endoscopes that allow surgeons to see inside their patients.
Optical fibres can also carry enormous amounts of information as pulses of light.

Emission and absorption of infrared radiation

All bodies (objects) **emit** and **absorb** infrared radiation. They do this whatever their temperature. The hotter the body:

- the more infrared radiation it gives out in a given time
- the greater the proportion of emitted radiation is visible light

Required practical - investigating infrared radiation



Aim of the experiment

To investigate how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of that surface.

Method

- Place a Leslie cube on a heat-resistant mat. Almost fill it with boiling water and replace the lid.
- Leave for one minute. This is to enable the surfaces to heat up to the temperature of the water.
- Use the infrared detector to measure the intensity of infrared radiation emitted from each surface, or the temperature of the surface. Make sure that the detector is the same distance from each surface for each reading.

Results

Surface type	Infrared intensity	
matt black	19.5	Best absorber/ emitter
matt white	5.1	
shiny black	14.2	
shiny silver	3.8	Worst absorber/ emitter

Factors affecting the Earth's temperature - Higher

The temperature of the Earth depends on many factors including the concentration of greenhouse gases such as water vapour, methane and carbon dioxide.

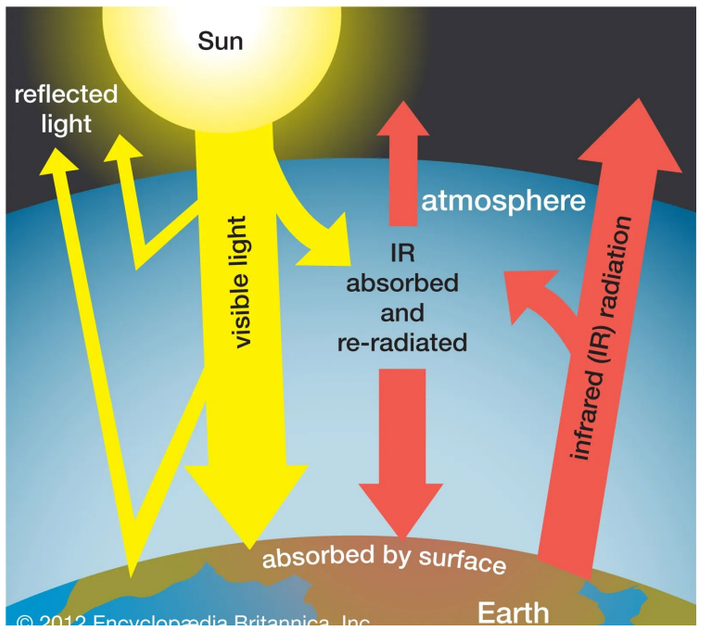
The Earth's temperature also depends on the rates at which light radiation and infrared radiation are:

- absorbed by the Earth's surface and atmosphere
- emitted by the Earth's surface and atmosphere

The greenhouse effect

The 'greenhouse effect' caused by naturally occurring greenhouse gases, such as water vapour, stabilises the surface temperature of Earth. This allows the planet to support life.

However, human activities such as deforestation and the burning of fossil fuels are releasing additional carbon dioxide. This causes more infrared radiation to be 'trapped' and reabsorbed by the Earth's surface. This enhanced greenhouse effect is causing global temperatures to increase, leading to climate change.



Year 10 Physics: Electromagnetic Spectrum Vocab

Key Vocabulary	Definition	Contextual Sentence
Activity	The number of unstable atoms that decay per second in a radioactive source.	Overtime the **activity** of the isotope reduced.
Alpha radiation (α)	Alpha particles, each composed of two protons and two neutrons, emitted by unstable nuclei.	The Uranium nuclei decayed and emitted an **alpha particle.**
Atomic number	The number of protons (which equals the number of electrons) in an atom. It is sometimes called the proton number.	During the alpha decay the **proton number** decreases by 2.
Beta radiation (β)	Beta particles that are high energy electrons created in, and emitted from, unstable nuclei.	Carbon-13 nuclei decayed and emitted a **beta particle**.
Chain reaction	Reactions in which one reaction causes further reactions, which in turn cause further reactions, etc.	The uncontrolled **chain reaction** can quickly lead to an explosion.
Count rate	The number of counts per second detected by a Geiger counter.	The **count rate** is the number of radiation counts per second.
Gamma radiation (γ)	Electromagnetic radiation emitted from unstable nuclei in radioactive substances.	**Gamma radiation** is the least ionising of the nuclear radiations.
Half-life	Average time taken for the number of nuclei of the isotope (or mass of the isotope) in a sample to halve.	The **half-life** of the isotope was 10 days.
Ionisation	Any process in which atoms become charged.	The atom lost an electron through the process of **ionisation**.
Irradiated	An object that has been exposed to ionising radiation.	The person was **irradiated** by the radioactive source.
Isotopes	Atoms with the same number of protons and different numbers of neutrons.	Carbon 12 and carbon 13 are **isotopes** of one another.
Mass number	The number of proton and neutrons in a nucleus.	The **mass number** of Carbon 12 is 12.
Moderator	Substance in a nuclear reactor that slows down fission neutrons.	Water is often used as a **moderator.**
Radioactive contamination	The unwanted presence of materials containing radioactive atoms on other materials.	The air and dust was dangerous to health due to **radioactive contamination**.
Reactor core	The thick steel vessel used to contain fuel rods, control rods and the moderator in a nuclear fission reactor.	The **reactor core** was made of thick lead.

HISTORY

Year 10 History
Summer Term- Power and the people

Break with Rome 1215

Summary

1. Henry wants an heir.
Henry wanted a male heir. His wife Catherine of Aragon had had a girl, Mary, but she had suffered miscarriages and still births, and was not able to have more children.

2. Henry needs a divorce.
Henry started having an affair with Anne Boleyn. He wanted to divorce Catherine but only the Pope could grant a divorce.

3. Henry falls out with the Pope.
The Pope refused Henry's divorce, several times. Henry found a solution where the Pope didn't have much power over him and could get himself a divorce.

4. Henry and the Reformation
Henry saw the Pope as a competing power, Henry wanted the people of England to listen to him only. He was not a supporter of Luther's ideas but he used these new ideas to go against the Pope.

5. Creates a new church - 1534
Parliament passed the 'Act of Supremacy' This removed the Pope as head of the Church in England and made Henry head of the Church of England. Henry could now get a divorce.

6. Dissolution of the monasteries
Cromwell promised Henry that he would make him the richest king in Europe. In 1536, small monasteries were closed that had an annual income less then £200. Not everyone was happy, they didn't support a complete break with Rome.

7. People unhappy about Henry's changes?
- Rising prices
- Changes to religion
- Landowners lost influence/Cromwell's power

Key People

Henry VIII: became king in 1509.

Martin Luther: protestant monk who became increasingly angry with the catholic church, started the protestant reformation.

Thomas Cromwell: Henry's faithful servant, helped secure divorce.

Key Facts/Context

- In 1517, Luther nailed a list of 95 points where he thought the Church had gone wrong to the door of a Catholic Church in Germany.
- By 1529, the followers were known as Protestants because they protested against the Catholic Church.
- There were 2 main religious groups who believed in a Christian version of God.

Pilgrimage of Grace 1536-37

Key factors
Change
Religion
Economy
Role of the individual

Summary

1. Rebels attack
- The rebels took over York, Hull and Pontefract Castle in the North.
- The King's army of the north, led by the Duke of Norfolk, only numbered 5,000 whereas there were over 50,000 rebels.
- When the rebels took over a town they made sure the monks were returned to their monasteries and nun.

2. King negotiates
- The Duke of Norfolk told the King he had to negotiate.
- A list of grievances was drawn up and sent to the King.
- Henry agreed to some of the demands in order to buy some time including: a pardon for all, a Parliament in York and no more monasteries would be closed.

3. Christmas with the King
- After the pardon was read out at Aske's insistence, the rebels agreed to disband and go home.
- Aske was invited to spend Christmas with the King.

4. Things go wrong
- When travelling home a new revolt broke out. Henry used this as an excuse to tear up the pardon attack the north.
- Aske was hanged in chains in York.
- 216 people were executed.

Key People

Henry VIII: The King of England at the time.

Robert Aske: Led the Pilgrimage of Grace protest, was executed for treason 12 July 1537.

Key Facts/Context

- The Pilgrimage of Grace was a serious threat to the rule of Henry VIII.
- It is important to remember it was not solely caused by religious changes – there were other causes too, such as poor harvests, low wages, bad government and rumours of new taxes.
- They wanted mainly religious change, but they did not want to remove the King.
- It was a conservative movement, seeking to reverse change and return to the old ways of religion. Henry was able to face down the rebels and emerge at the end of the process in a stronger position.
- Of all the rebellions, it is one of the least remembered.

English Civil War 1642-51

Key People

Charles I: Became King in 1625, believed in the divine right of kings

Oliver Cromwell: The mastermind behind the New Model army which was used to defeat the Royalist army and capture Charles

Key factors
War
Government
Religion
Ideas
Role of the individual

Key Facts/Context

- 1649 Cromwell crushed a rebellion in Ireland.
- Groups going against the government were marginalised and their leaders were imprisoned.
- 1653 Cromwell, backed with the army, marched into Parliament and took power as Lord Protector.
- Attempted to create a religious settlement that would appeal to all but his puritan views made him unpopular.
- He closed theatres, banned Christmas and stopped women wearing make up.
- After Cromwell's death Parliament restored the monarchy but it had gained more powers than before the Civil War.

Summary

- During this time the nation fought a civil war, executed a king, became a republic, restored the monarchy and replaced the king yet again.
- People in the 1640s talked about a 'world turned upside down'.
- It was a period of strong feelings and dissent in politics, economics and religion.
- Families were often divided. Loyalties were tested and big questions asked such as, is it right to rebel against your King?
- The demands of Parliament were met, but those of the poor, and women, were not.
- The reputations of key characters involved – Charles I and Cromwell – are still disputed today.

New Model Army
- Swung the balance of power in Parliament's favour.
- The first fully professional army created by Oliver Cromwell.
- Soldiers were veterans from other battles and held strong religious views.
- The soldiers believed that God was on their side
- Officers were promoted by merit and not class.
- Soldiers were well paid – 8d per day.
- Many members believed that all men should have the vote.

Charles' Execution
- MPs were divide about how to treat the King. The army ejected 300 MPs leaving only a Rump who put the King on trial.
- Charles was found guilty of treason. He refused to plea as he did not recognise the power of the court.
- Charles was executed on 30th January 1649.
- After his execution Parliament abolished the monarchy and the House of Lords.
- England was declared a Commonwealth.

Year 10 History
Summer Term- Power and the people

American Revolution 1775-82

Summary

1. In 1776 the thirteen colonies of North America declared their independence from Britain. Most people believed that colonies were unable to exist as a separate country.

2. Most people believed that colonies were unable to exist as a separate country.

3. Over the previous 150 years these colonies had been largely self-governing but it was war with France that brought to a head the tensions that led to the American Revolution.

4. There are echoes of Magna Carta and other revolts in the words of the Declaration of Independence, words that are still powerful today and which would have an impact on events during the next 200 years.

5. The slogan of the Revolution, 'no taxation without representation', remains a strong political rallying cry today.

The British Surrender at Yorktown

- The American's supported by the French surrounded the British army at Yorktown.
- The British commander had no choice but to surrender as he could not bring in reinforcements.
- They were forced to surrender all their weapons, including 214 artillery pieces and thousands of muskets.
- On hearing the surrender, the British Government passed a Bill stating that no more attempts to defeat the Americans should be taken.
- The defeat at Yorktown was a humiliating end and defeat for the 'superior' British forces.

Key factors
War
Government
Communication
Ideas
Role of the individual

Key People

Thomas Paine: Wrote a pamphlet called 'Common Sense' in 1776. The pamphlet urged for American Independence. Sold over 500,000 copies.

Key Facts/Context

- The Seven Years war with France made Britain introduce new taxes in America.
- Britain sent troops to defend their 13 American colonies but wanted them to pay for their upkeep.
- As a result, they introduced new taxes on the 13 colonies including the Stamp Act of 1763.
- There was wide-spread opposition to the new taxes as the Americans felt they as they were not represented in the British Parliament then they should not be taxed.
- This promoted the slogan of the War of Independence, 'No taxation without representation'.
- 1773 Boston Tea Party: tipped all the tea on a boat going to Britain into the sea as a protest against British rule.
- The British responded by closing Boston Harbour to all shipping until compensation was paid.

Chartists

Key factors
Economy
Government
Communication
Ideas
Role of the individual

Key People

Fergus O'Connor: became a leading Chartist who promoted the cause through the *Northern Starr* newspaper which became the Chartists' 'bible'.

Henry "Orator" Hunt was a British radical speaker and agitator remembered as a pioneer of working-class radicalism and an important influence on the later Chartist movement. He advocated parliamentary reform and the repeal of the Corn Laws.

Key Facts/Context

- The only people who could vote were those who owned property.
- There was no secret ballot. As a result, voters could be intimidated or bribed by rich land owners.
- Rotten Boroughs sent an MP to Parliament though no one lived there, while the city of Birmingham had no MP.
- After seeing events in America, a group of 'radicals' wanted to change the election system in Britain.
- A peaceful protest in Manchester promoting reform in 1819 was crushed by the government. Eleven people were killed, including women and children. This became known as the Peterloo Massacre.
- The radicals wanted: Universal manhood suffrage (votes for all men), equal electoral districts and annual Parliaments.

Summary

- The 1832 Reform Act is often thought of as a huge stepping stone on the road to democracy and government by the people but to many at the time it was a big disappointment.
- Ordinary people remained convinced that the way to improve their lot in life was through political change. George Harney, a Chartist, said in 1839, 'we demand universal suffrage, because we believe universal suffrage will bring universal happiness.'
- The Chartists attempted to force the Government to concede universal suffrage, and the Government was equally determined to resist.
- The Chartist movement died out without achieving its aims; however, most of its demands were granted later.

Great Reform Act 1832

Changes:

- 67 new constituencies were created so the industrial towns (like Birmingham) were represented.
- Gave factory owners, shop keepers and small landowners the vote.
- Removed 56 'Rotten Boroughs'.

Continuity:

- You still had to own property to vote & women were forbidden the vote.
- Political demands for reform increased as ordinary people realised the Reform Act did nothing.

The People's Charter 1838

The Charter stated the six aims of the Chartists:

1. A vote for all men over 21
2. A secret ballot
3. Equal electoral districts
4. No property qualification to become an MP
5. Payment for MPs
6. Annual Parliaments

Year 10 History
Summer Term- Power and the people

Campaigns and Reformers

Summary

- Single-issue politics is widespread today. Pressure groups exist to try to influence and change government policy on a vast range of issues.
- In 1800 they were virtually unknown, yet two great movements – abolition of the slave trade and abolition of the Corn Laws – came to dominate public life during the first half of the nineteenth century.
- While very different in nature, both employed many similar tactics and both were successful.
- Throughout the century many individuals played a huge part in forcing change out of a reluctant government, selflessly working to ameliorate the lives of million of people.

Anti-Corn Law League Methods

- Motions were introduced to Parliament regularly but were always opposed by MPs.
- Petitions, adverts and reports were always in newspapers to keep the topic in people's minds.
- Large peaceful meetings – one had a crowd over 5,000 people.
- Memorabilia was produced and sold.

Fight to end slavery Methods

- 1783 London Quakers send a petition to Parliament against the Slave Trade.
- 1788 – 103 petitions were sent to Parliament.
- Speeches were used to gain support. William Wilberforce introduced a motion against slavery to the House of Lords.
- Thomas Clarkson showed people 'hard facts' to win their support.

Social Reform Methods:

- Used Parliament to pass laws to improve social problems for the people. Ten Hours Bill – limited hours children under nine could work.
- 1840 – set up Children's Employment Commission which evidence led to the 1842 Mines and Collieries Act.

Key Facts/Context

- After the Napoleonic Wars tariffs were placed on imported corn.
- Attempt to keep out cheaper foreign corn.
- Good for landowners and farmers but bad for factory owners and workers. In their opinion it showed who Parliament cared for.
- The Anti-Corn Law League wanted to end the Corn Laws in society.
- Due to the industrial revolution new social problems were created in towns and cities.
- 'Laissez-Faire' or self help was the main idea at the time.
- Powers were given to local councils to make improvements to social problems – however few did.

Key factors
The Economy
Religion
Communication
Ideas
Role of the individual

Key People

Thomas Clarkson: leading campaigner against the slave trade and slavery in Britain and the British empire.

Lord Shaftesbury: heavily involved in reforming lunatic asylums in Britain, one of the key individuals responsible for bringing about reform of Britain's factories, improving working conditions and limiting the length of the workday and president of the Ragged School Union, promoting the education of poor children.

Trade Unions

Key factors
The Economy
Government
Ideas
Role of the individual

Key People/groups

Robert Owen: mill owner in Scotland, set up the Grand National Consolidated Trade Union (GNCTU) in 1833.

Tolpuddle Martyrs 1834

Match Stick Girls

Docker's strike

General Strike 1926

Miner's strike 1984/5

Key Facts/Context

- Since medieval times there had been workers' guilds that controlled prices and wages.
- There were groups who fought against the changes in industry, Luddites would deliberately break machinery in the hope that factory owners would turn away from technology.
- Combination Act 1825: defined the rights of trade unions as meetings to discuss wages and conditions.
- 1851, a new type of union was set up: Amalgamated Society of Engineers (ASE) which was a union of highly skilled men who could afford weekly subscriptions to cover sick pay and benefits.
- This sparked a new wave of New Model Unions which paved the way for a move into politics and the creation of the Labour Party at the start of the 20th century

Summary

- Trade unions developed as working men (and later, working women) branded together to try to improve their standard of living and protect their jobs.
- Sometimes unions were successful, sometimes they were not.
- Employers and governments were mostly hostile to such attempts, seeing them as restraint of trade.
- The law was repeatedly used to limit the effectiveness of unions and any gains made by workers tended to be short-term and limited.
- Union membership grew throughout the period, although still only about 10% of workers were union members by 1900. Very few women were union members.
- The union movement led directly to the formation of the Independent Labour Party in 1893.
- Some people argued that unions became too powerful and needed weakening whilst others stated that the government and employers had all the power.
- There have been successes, like the Dagenham sewing machinists n 1968 and failures like the 1984 miner's strike.
- Workers and their unions have been prepared to take on governments in attempts to improve their living standards, and as a consequence many workers are better off today than ever before.

Year 10 History
Summer Term- Power and the people

Women's rights

Summary

- Over time the status and position of women has changed dramatically. Once women obtained the vote on the same basis as men they had the opportunity to push for more and more equality. Gradually attitudes towards women, work and politics changed.
- By 1969 everyone in the country over the age of eighteen could, and since the 1970 Equal Pay Act employers have had to pay men and women equally.
- Many men were reluctant to concede both the vote and equal rights to women.
- Today, on average, women earn 30% less than men.
- Women have managed to progress towards equality – sometimes through their own efforts and sometimes through the efforts of government.

Suffragists (NUWSS)

- Created in 1897 and led by Millicent Fawcett.
- Used peaceful methods to campaign for votes for women: marches, meetings and petitions
- Gained support for MPs who supported votes for women. However it was never enough to achieve their aims.
- Many women became frustrated at the slow pace of change.

Suffragettes (WSPU)

- A breakaway group of the NUWSS.
- Created in 1903 and led by Emmeline Pankhurst.
- Used militant (violent) methods of protest: disrupted political meeting, attacked police officers, vandalised MPs houses and set fire to letter boxes
- Violent methods attracted a lot of media attention but alienated a lot of potential supporters. - especially MPs.

Key Facts/Context

- Victorians thought that a woman's place was in the home raising children.
- Working Class women who worked were always paid less than men.
- The law favoured men – women could not own property, vote or ask for a divorce.
- Some men argued that as women could not fight in war they should not be allowed the vote.
- From the 1850s some women began to campaign against the inequalities shown towards them.
- To achieve all their aims many women thought they first needed the right to vote.

Key factors
Chance
War
Government
Communication
Ideas
Role of the individual

Key People

Millicent Fawcett: leading Suffragist and campaigner for equal rights for women. She led the biggest suffrage organisation, the non-violent (NUWSS) from 1890-1919 and played a key role in gaining women the vote.

Emmeline Pankhurst: founded the Women's Social and Political Union, whose members—known as suffragettes—fought to enfranchise women in the United Kingdom.

The Rights of Ethic Minorities

Key factors
Chance
Government
Economy
Ideas
Role of the individual

Key People

Enoch Powell: increased tensions against the immigrants with his public speech stating that the immigrants should be sent 'home' from Britain.

Key Facts/Context

- The British Nationality Act 1948 allowed anyone from the Commonwealth to come to Britain and become a citizen.
- Britain needed migrant workers to help rebuild the country after World War Two.
- 1948: MV Windrush brought the first migrants from the West Indies to Britain.
- The migrants clustered in London suburbs such as Brixton and Hackney.
- No matter how skilled they were – most migrants ended up doing unskilled, low paid jobs.
- 1968: Enoch Powell (MP) gave his 'River's of Blood Speech' where he called for all immigrants to return home.
- There was also an increase in supporters of the extreme racist group the National Front.

Summary

- Migrants have long come to Britain, making a valuable contribution to economic life.
- Since WW2, mass migration, both into Britain and out of Britain, has changed the way we live.
- Migration remains an emotive political issue. Many people have not always welcomed migrants.
- Parliament has passed laws making life easier for migrants once they settle in Britain.

Brixton Riots 1981

Background:

- Many people believed the police were unwilling to protect black people.
- Police used stop and search tactics – but were seven times more likely to stop young black people.
- High unemployment in the Brixton – mainly minorities

Events:

- 11th April – a stop and search led to a policeman being hit by a brick which caused more police to appear in Brixton.
- As more police came so did large crowds of people who began throwing missiles at the police.
- By the evening 1,000 police were sent to restore order in Brixton.
- 300 police officers were hurt, 100 vehicles were destroyed and 82 arrests were made.
- The riots also spread to other cities such as Liverpool and Manchester.

Consequences:

- The Government set up an inquiry into the riots.
- The report was published in November 1981 blaming the police for being racist towards the black community in Brixton.
- This led to the creation of the Independent Police Complaints Authority in 1985.

GEOGRAPHY

Reducing the Global Development Gap

Microfinance Loans
This involves people in LICs receiving smalls loans from traditional banks.
+ Loans enable people to begin their own businesses
- Its not clear they can reduce poverty at a large scale.

Foreign-direct investment
This is when one country buys property or infrastructure in another country.
+ Leads to better access to finance, technology & expertise.
- Investment can come with strings attached that country's will need to comply with.

Aid
This is given by one country to another as money or resources.
+ Improve literacy rates, building dams, improving agriculture.
- Can be wasted by corrupt governments or they can become too reliant on aid.

Debt Relief
This is when a country's debt is cancelled or interest rates are lowered.
+ Means more money can be spent on development.
- Locals might not always get a say. Some aid can be tied under condition from donor country.

Fair trade
This is a movement where farmers get a fair price for the goods produced.
+ Paid fairly so they can develop schools & health centres.
-Only a tiny proportion of the extra money reaches producers.

Technology
Includes tools, machines and affordable equipment that improve quality of life.
+ Renewable energy is less expensive and polluting.
- Requires initial investment and skills in operating technology

CS: Reducing the Development Gap In Jamaica

Location and Background

Jamaica is a LIC island nation part of the Caribbean. Location makes Jamaica an attractive place for visitors to explore the tropical blue seas, skies and palm filled sandy beaches

Tourist economy

-In 2015, **2.12 million** visited.
-Tourism **contributes 27% of GDP** and will increase to **38% by 2025**.
-**130,000 jobs** rely on tourism.
-**Global recession** 2008 caused a **decline in tourism**. Now tourism is beginning to recover.

Multiplier effect

-**Jobs from tourism** have meant **more money** has been spent in shops and other businesses.
-Government has invested in **infrastructure** to support tourism.
-**New sewage treatment** plants have reduced pollution.

Development Problems

- Tourists do not always **spend much money** outside their resorts.
- Infrastructure improvements **have not spread** to the whole island.
- Many people in Jamaica still live in **poor quality housing** and **lack basic services** such as healthcare.

Case Study: Economic Development in Nigeria

Location & Importance

Nigeria is a NEE in West Africa.
Nigeria is just north of the Equator and experiences a range of environments.
Nigeria is the most populous and economically powerful country in Africa. Economic growth has been base on oil exports.

Influences upon Nigeria's development

Political

Suffered **instability** with a **civil war** between 1967-1970.
From 1999, the country became **stable** with **free and fair elections**.
Stability has **encouraged global investment** from China and USA.

Social

Nigeria is a **multi-cultural, multi-faith society**.
Although mostly a strength, diversity has caused **regional conflicts** from groups such as the Boko Haram terrorists.

Cultural

Nigeria's **diversity** has created rich and varied **artistic culture**.
The country has **a rich music, literacy and film industry** (i.e. Nollywood).
A successful national football side.

Industrial Structures

Once mainly based on agriculture, **50% of its economy is now manufacturing and services**.
A thriving manufacturing industry is **increasing foreign investment** and **employment opportunities**.

The role of TNCs

TNCs such as **Shell** have played an important role in its economy.
+ Investment has **increased employment and income**.
- **Profits move to HICs**.
- Many **oil spills** have **damaged fragile environments**.

Changing Relationships

Nigeria plays a leading role with the **African Union** and **UN**.
Growing links with **China** with huge **investment in infrastructure**.
Main import includes petrol from the EU, cars from Brazil and phones from China.

Environmental Impacts

The 2008/09 **oil spills devastated swamps** and its **ecosystems.**
Industry has caused **toxic chemicals** to be discharged in open sewers - **risking human health**.
80% of forest have been **cut down**.
This also increases **CO^2 emissions**.

Aid & Debt relief

+ Receives **$5billion** per year in aid.
+ **Aid groups** (ActionAid) have improved health centres, provided anti-mosquito nets and helped to protect people against AIDS/HIV.
- Some aid fails to reach the people who need it due to **corruption**.

Effects of Economic Development

Life expectancy has increased from 46 to 53 years. 64% have access to safe water. Typical schooling years has increased from 7 to 9.

Case Study: Economic Change in the UK

UK in the Wider World

The UK has one of the largest economies in the world.
The UK has huge political, economic and cultural influences.
The UK is highly regarded for its fairness and tolerance.
The UK has global transport links i.e. Heathrow and the Eurostar.

Causes of Economic Change

De-industrialisation and the **decline** of the UK's industrial base.
Globalisation has meant many industries have moved overseas, where labour costs are lower.
Government investing in supporting vital businesses.

Towards Post-Industrial

The **quaternary industry** has **increased**, whilst **secondary** has **decreased.**
Numbers in **primary** and **tertiary industry** has **stayed the steady**.
Big increase in **professional** and **technical jobs**.

Developments of Science Parks

Science Parks are groups of scientific and technical knowledge based businesses on a single site.
- Access to **transport routes**.
- **Highly educated workers**.
- Staff benefit from **attractive working conditions**.
- Attracts **clusters** of related **high-tech businesses**.

CS: UK Car Industry

Every year the UK makes 1.5 million cars. These factories are owned by large TNCs. i.e. Nissan.
- 7% of energy used there factories is from **wind energy**.
- New cars are more energy **efficient and lighter**.
- Nissan produces **electric and hybrid cars**.

Change to a Rural Landscape

Social

Rising house prices have caused tensions in villages.
Villages are **unpopulated** during the day causing **loss of identity**.
Resentment towards **poor migrant communities**.

Economic

Lack of affordable housing for local first time buyers.
Sales of farmland **has increased rural unemployment**.
Influx of poor migrants puts **pressures** on local services.

Improvements to Transport

A **£15 billion 'Road Improvement Strategy'**. This will involve 10 new roads and 1,600 extra lanes.
£50 billion HS2 railway to improve connections between key UK cities.
£18 billion on Heathrow's controversial **third runway**.
UK has many **large ports** for importing and exporting goods.

UK North/South Divide

- Wages are **lower** in the North.
- Health is **better** in the South.
- Education is **worse** in the North.
+ The government is aiming to support a **Northern Powerhouse** project to resolve regional differences.
+ More **devolving of powers** to disadvantaged regions.

Tier 3 Vocab	Definition	Contextual Sentence
Abrasion	When bits of eroded rock in water or on ice scrape against rock, eroding it.	Abrasion wears away at the base of a waterfall, making the plunge pool deeper.
Attrition	When bits of rock eroded in water collide, break into smaller pieces and become more rounded.	Attrition will not alter the shape of a coastline, but will change the size and shape of the sediment carried by the waves.
Beach Nourishment	Adding sand or shingle from elsewhere to the upper part of a beach, often to prevent erosion.	Beach nourishment is a popular form of soft engineering in places such as Mablethorpe and Skegness.
Deposition	The process of water dropping material as it slows down and loses energy. Ice can also deposit material when it melts.	Deposition occurs when water carrying sediment loses energy and slows down.
Discharge	The volume of water flowing in a river, measured in cumecs (cubic meters per second).	Peak discharge is the highest discharge in the period of time you're looking at.
Erosion	The gradual wearing away of material, e.g. by moving water or ice.	Waves wear away the coast using three processes of erosion; hydraulic action, abrasion and solution.
Hydraulic Action	Erosion caused by sea or river water colliding with rocks.	Hydraulic action can take place in rivers and along coastlines.
Longshore Drift	The gradual zigzag movement of sediment along a coast. Caused by waves carrying material up the beach at an oblique angle and back down the beach at a right angle.	Material is transported along the coast by longshore drift.
Managed Retreat	Removing flood defences to let land flood naturally.	Managed retreat was carried out at Alkborough Flats, Lincolnshire to help protect 400, 000 homes from flooding.
Mass Movement	The shifting of rocks and loose material down a slope by sliding, slumping and rockfalls.	Mass movement happens when the force of gravity acting on a slope is greater than the force supporting it.
Saltation	When pebble-sized particles are bounced along the sea or river bed by the force of water.	The river doesn't have enough energy to carry the particles, so they are bounced along the river bed by saltation.
Solution	When soluble materials, e.g. limestone, dissolve in water and are transported.	Solution is both a process of erosion and transportation.
Suspension	When small particles, e.g. silt and clay, are transported by water.	Small particles are suspended in the water and are transported this way by suspension.
Traction	When large particles, e.g. boulders, are pushed along the river or sea bed by the force of water.	The largest particles in a river are rolled along the river bed by traction.
Transportation	The movement of eroded material.	There are four processes of transportation; traction, saltation, suspension and solution.
Weathering	The breaking down of rock in situ.	Weathering can be either biological, chemical, or physical (think Science).

Relief of the UK

Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.

Key

Lowlands

Uplands

Areas +600m: Peaks and ridges cold, misty and snow common. i.e. Scotland

Areas -200m: Flat or rolling hills. Warmer weather. i.e. Fens

Types of Erosion

The break down and transport of rocks – smooth, round and sorted.

Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolves rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart.
Hydraulic Action	Water enters cracks in the cliff, air compresses, causing the crack to expand.

Types of Transportation

A natural process by which eroded material is carried/transported.

Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.

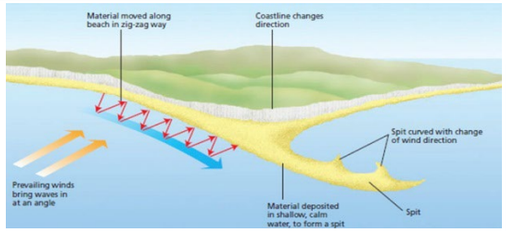
Mass Movement

A large movement of soil and rock debris that moves down slopes in response to the pull of gravity in a vertical direction.

1	Rain saturates the permeable rock above the impermeable rock making it heavy.
2	Waves or a river will erode the base of the slope making it unstable.
3	Eventually the weight of the permeable rock above the impermeable rock weakens and collapses.
4	The debris at the base of the cliff is then removed and transported by waves or river.

Formation of Coastal Spits - Deposition

Example: Spurn Head, Holderness Coast.

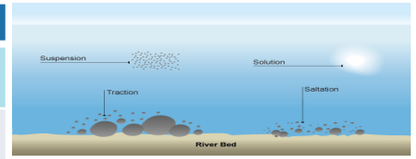


1) Swash moves up the beach at the angle of the prevailing wind.
2) Backwash moves down the beach at 90° to coastline, due to gravity.
3) Zigzag movement (Longshore Drift) transports material along beach.
4) Deposition causes beach to extend, until reaching a river estuary.
5) Change in prevailing wind direction forms a hook.
6) Sheltered area behind spit encourages deposition, salt marsh forms.

Types of Weathering

Weathering is the breakdown of rocks where they are.

Carbonation	Breakdown of rock by changing its chemical composition.
Mechanical	Breakdown of rock without changing its chemical composition.



What is Deposition?

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.

Formation of Bays and Headlands

1) **Waves attack the coastline.**
2) **Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.**
3) **More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.**

Unit 1c

AQA

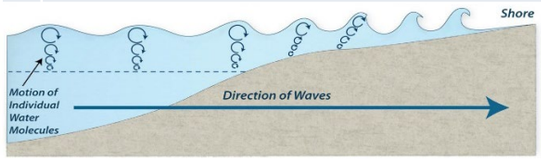
Physical Landscapes in the UK

How do waves form?

Waves are created by wind blowing over the surface of the sea. As the wind blows over the sea, friction is created - producing a swell in the water.

Why do waves break?

1	**Waves start out at sea.**
2	**As waves approaches the shore, friction slows the base.**
3	**This causes the orbit to become elliptical.**
4	**Until the top of the wave breaks over.**



Mechanical Weathering Example: Freeze-thaw weathering

Stage One

Water seeps into cracks and fractures in the rock.

Stage Two

When the water freezes, it expands about 9%. This wedges apart the rock.

Stage Three

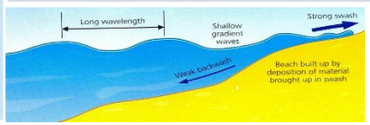
With repeated freeze-thaw cycles, the rock breaks off.

Size of waves

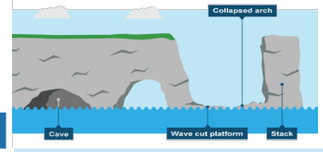
- **Fetch how far the wave has travelled**
- **Strength of the wind.**
- **How long the wind has been blowing for.**

Types of Waves

Constructive Waves	Destructive Waves
This wave has a **swash that is stronger** than the backwash. This therefore builds up the coast.	This wave has a **backwash that is stronger** than the swash. This therefore erodes the coast.



Formation of Coastal Stack



Example: Old Harry Rocks, Dorset

1) **Hydraulic action widens cracks in the cliff face over time.**
2) **Abrasion forms a wave cut notch between HT and LT.**
3) **Further abrasion widens the wave cut notch to from a cave.**
4) **Caves from both sides of the headland break through to form an arch.**
5) **Weather above/erosion below –arch collapses leaving stack.**
6) **Further weathering and erosion eaves a stump.**

Coastal Defences

Hard Engineering Defences

Groynes	**Wood barriers prevent longshore drift, so the beach can build up.**	✓ **Beach still accessible.** ✗ **No deposition further down coast = erodes faster.**
Sea Walls	**Concrete walls break up the energy of the wave . Has a lip to stop waves going over.**	✓ **Long life span** ✓ **Protects from flooding** ✗ **Curved shape encourages erosion of beach deposits.**
Gabions or Rip Rap	**Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.**	✓ **Cheap** ✓ **Local material can be used to look less strange.** ✗ **Will need replacing.**

Soft Engineering Defences

Beach Nourishment	**Beaches built up with sand, so waves have to travel further before eroding cliffs.**	✓ **Cheap** ✓ **Beach for tourists.** ✗ **Storms = need replacing.** ✗ **Offshore dredging damages seabed.**
Managed Retreat	**Low value areas of the coast are left to flood & erode.**	✓ **Reduce flood risk** ✓ **Creates wildlife habitats.** ✗ **Compensation for land.**

Case Study: Hunstanton Coast

Location and Background
Located on the North-West coast of Norfolk. The town is a popular sea resort for tourists to visit all year round.
In 2013, the town suffered damage from a storm surge. The Sea Life Centre was flooded and closed for a number of months.

Geomorphic Processes
- Old Hunstanton is dominated by dunes that are formed when sand is trapped and built up behind objects.
-Hunstanton Cliffs are made from three different bands of rock (sandstone, red chalk and white chalk).
-Hunstanton Cliff are exposed to cliff retreat. This is when a wave-cut notch develops enough for the cliff face to become unstable and eventually collapses.
-Longshore drift travels from Sheringham in the north to the Wash in the south.

Management
-Hunstanton is protected by a number of groynes. These trap sand to build up the beach for better protection.
-The town is also protected by large sea walls to prevent flooding and deflect the waves energy.
-$15 million has been spent on beach nourishment to add sediment to beach for increased protection against flooding.

Water Cycle Key Terms

Precipitation	Moisture falling from clouds as rain, snow or hail.
Interception	Vegetation prevent water reaching the ground.
Surface Runoff	Water flowing over surface of the land into rivers
Infiltration	Water absorbed into the soil from the ground.
Transpiration	Water lost through leaves of plants.

Physical and Human Causes of Flooding.

***Physical:* Prolong & heavy rainfall**
Long periods of rain causes soil to become saturated leading runoff.

***Physical:* Geology**
Impermeable rocks causes surface runoff to increase river discharge.

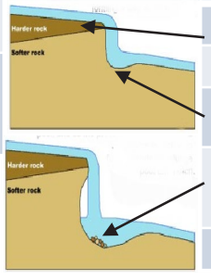
***Physical:* Relief**
Steep-sided valleys channels water to flow quickly into rivers causing greater discharge.

***Human:* Land Use**
Tarmac and concrete are impermeable. This prevents infiltration & causes surface runoff.

Upper Course of a River

Near the source, the river flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.

Formation of a Waterfall



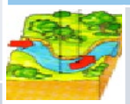
1) **River flows over alternative types of rocks.**
2) **River erodes soft rock faster creating a step.**
3) **Further hydraulic action and abrasion form a plunge pool beneath.**
4) **Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.**
5) **Waterfall retreats leaving steep sided gorge.**

Middle Course of a River

Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

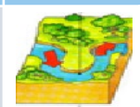
Formation of Ox-bow Lakes

Step 1



Erosion of outer bank forms river cliff. Deposition inner bank forms slip off slope.

Step 2

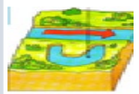


Further hydraulic action and abrasion of outer banks, neck gets smaller.

Step 3

Erosion breaks through neck, so river takes the fastest route, redirecting flow

Step 4



Evaporation and deposition cuts off main channel leaving an oxbow lake.

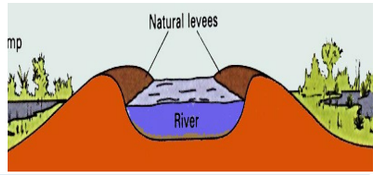
Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.

Formation of Floodplains and levees

When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials build up to form natural levees.

✓ Nutrient rich soil makes it ideal for farming.
✓ Flat land for building houses.



River Management Schemes

Soft Engineering

Afforestation – plant trees to soak up rainwater, reduces flood risk.
Demountable Flood Barriers put in place when warning raised.
Managed Flooding – naturally let areas flood, protect settlements.

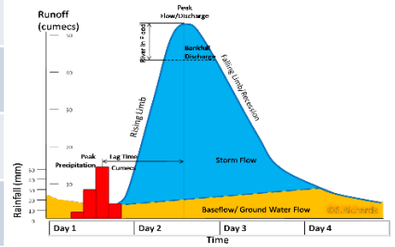
Hard Engineering

Straightening Channel – increases velocity to remove flood water.
Artificial Levees – heightens river so flood water is contained.
Deepening or widening river to increase capacity for a flood.

Hydrographs and River Discharge

River discharge is the volume of water that flows in a river. Hydrographs who discharge at a certain point in a river changes over time in relation to rainfall

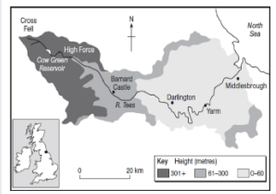
1. **Peak discharge** is the discharge in a period of time.
2. **Lag time** is the delay between peak rainfall and peak discharge.
3. **Rising limb** is the increase in river discharge.
4. **Falling limb** is the decrease in river discharge to normal level.



Case Study: The River Tees

Location and Background
Located in the North of England and flows 137km from the Pennines to the North Sea at Red Car.

Geomorphic Processes
Upper – Features include V-Shaped valley, rapids and waterfalls. High Force waterfall drops 21m and is made from harder Whinstone and softer limestone rocks. Gradually a gorge has been formed.
Middle – Features include meanders and ox-bow lakes. The meander near Yarm encloses the town.
Lower – Greater lateral erosion creates features such as floodplains & levees. Mudflats at the river's estuary.



Management
-Towns such as Yarm and Middleborough are economically and socially important due to houses and jobs that are located there.
-Dams and reservoirs in the upper course, controls river's flow during high & low rainfall.
- Better flood warning systems, more flood zoning and river dredging reduces flooding.

UNIT OF WORK 5: FAMILY, FRIENDS AND RELATIONSHIPS

Me, My Family and Friends: GCSE Foundation Tier Spanish Knowledge Organiser

Key Ideas

- La composición de tu familia.
- La relaciones con tu familia y tus amigos/as.
- Las cualidades de un buen amigo/ una buena amiga.
- Lo que vas a hacer con tu familia y tus amigos/.
- Tu opinión sobre el matrimonio.

Useful Grammatical Structures

- Use **modifiers** to modify an adjective. Examples include: bastante (quite); un poco (a bit).
- Use **intensifiers** to intensify an adjective. Examples include: realmente (really); muy (very); particularmente (particularly); totalmente (totally); completamente (completely).
- Use **connectives and conjunctions** to make longer sentences. Examples include: porque (because); ya que (as/because); pero (but); sin embargo (however); cuando (when), although (aunque).

Key Vocabulary

Los sustantivos

el abuelo	grandfather
el adolescente	teenager
el anciano/la anciana	old person
el aspecto	appearance, looks
la barba	beard
el bigote	moustache
la boda/el casamiento	wedding
el compañero	friend, mate
la disputa	argument
la edad	age
la felicidad	hapiness
las gafas	glasses
el hermanastro	stepbrother
el hijo (único)	(single) child
el invitado	guest
el jubilado	OAP, pensioner
la madrastra	stepmother
el marido	husband
el matrimonio	marriage, married couple
el miembro	member
la mujer	wife, woman
el nieto	grandchild
el novio	boyfriend
el padrastro	stepfather
los parientes	relatives
las pecas	freckles
la pelea	fight
el pelo	hair
el primo	cousin
el tío	uncle
el vecino	neighbour

Los adjetivos

alegre	happy
amable	kind
amistoso/a	friendly
antipático/a	unpleasant
calvo/a	bald
casado/a	married
castaño/a	chestnut, brown
comprensivo/a	understanding
corto/a	short
egoísta	selfish
gracioso/a	funny
guapo/a	good-looking
joven	young
jubilado/a	retired
liso/a	straight (hair)
maleducado/a	rude
moreno/a	dark (-haired, -skinned)
pelirrojo/a	red-haired
perezoso/a	lazy, idle
rizado/a	curly
rubio/a	blonde
simpático/a	kind, nice, pleasant
soltero	single (not married)
travieso/a	naughty, mischievous

Los verbos

besar	to kiss
casarse	to get married
conocer	to know, be familiar with, get to know
cuidar	to look after
dar las gracias	to thank
discutir	to discuss
enamorarse	to fall in love
encontrar(se)/ quedar con alguien	to meet with someone
fastidiar	to annoy, to bother
llamarse	to be called
llevarse bien/mal con	to get on (well/badly) with someone
molestar	to bother
nacer	to be born
pasear	to go for a walk
pelear(se)	to fight
romper	to break
salir	to go out
tener ganas	to feel like
tener... años	to be... years old

Key Phrases

me llamo	my name is
tengo ...años	I am ...years old
en mi familia hay	in my family there is/are
me llevo bien con	I get on with
me llevo mal con	I don't get on with
discuto con	I argue with
tengo el pelo....	I have... hair... (description of hair colour, style etc)
mi padre/madre es...	my father/mother is...
mi mejor amigo/a es...	my best friend (m/f) is...
mis padres son...	my parents are...
un buen amigo/una buena amiga es...	a good friend (m/f) is...
en mi opinión el matrimonio es...	in my opinion marriage is...

Key Questions

1. **¿Cuántas personas hay en tu familia?** How many people are there in your family?
2. **¿Te llevas bien con tu familia?** Do you get on with your family?
3. **¿Cómo es tu personalidad?** What is your personality like?
4. **¿Puedes describir algún miembro de tu familia?** Can you describe a member of your family?
5. **¿Cómo es un buen amigo/ una buena amiga?** What is a good friend (m/f)?
6. **¿Qué te gusta hacer con tu familia?** What do you like doing with your family?
7. **¿Qué vas a hacer con tus amigos el fin de semana que viene?** What are you going to do with your friends next weekend?
8. **¿Cuál es tu opinión sobre el matrimonio?** What is your opinion on marriage?
9. **¿Te gustaría tener hijos en el futuro?** Would you like children in the future?

False Friends

los parientes	relatives
molestar	to bother

Tricky Pronunciation: Practise these with your teacher!

el adolescente	teenager	
el hermanastro/la hermanastra	stepbrother/stepsister	Don't pronounce the 'h'.
el hermano/La hermana	brother/sister	Don't pronounce the 'h'.
llevarse bien/mal con	to get on (well/badly) with someone	The letters 'll' are pronounced like the 'y' in the word 'yes'.
me llamo	my name is	The letters 'll' are pronounced like the 'y' in the word 'yes'.

Key Verbs

Infinitivo	Presente	Pasado (Pretérito)	Futuro
hacer - to do	yo hago ; él/ella hace ; nosotros/as hacemos	yo hice ; él/ella hizo ; nosotros/as hicimos	yo haré ; él/ella hará ; nosotros/as haremos
ser - to be	yo soy ; él/ella es ; nosotros/as somos	yo era ; él/ella era ; nosotros/as éramos	yo seré ; él/ella será ; nosotros/as seremos
estar - to be	yo estoy ; él/ella está ; nosotros/as estamos	yo estuve ; él/ella estuvo ; nosotros/as estuvimos	yo estaré ; él/ella estará ; nosotros/as estaremos
tener - to have	yo tengo ; él/ella tiene ; nosotros/as tenemos	yo tuve ; él/ella tuvo ; nosotros/as tuvimos	yo tendré ; él/ella tendrá ; nosotros/as tendremos
salir - to go out	yo salgo ; él/ella sale ; nosotros/as salimos	yo salí ; él/ella salió ; nosotros/as salimos	yo saldré ; él/ella saldrá; nosotros/as saldremos

Tricky Spellings

egoísta	selfish	Check the accent on the 'i'.
la madrastra	stepmother	Check both 'r' after the letters 'd' and 't'.
el padrastro	stepfather	Check both 'r' after the letters 'd' and 't'.
pelirrojo/a	red-haired	Check the 'rr' between 'i' and 'o'.

Me, My Family and Friends: GCSE Higher Tier Spanish Knowledge Organiser

Key Ideas

- La composición de tu familia
- Comparar la relación con tu familia cuando eras pequeño/a y actualmente
- Las cualidades de un buen amigo/ una buena amiga
- Lo haces con tu familia normalmente
- Lo que vas a hacer este fin de semana con tus amigos/as
- Tus planes del futuro sobre el matrimonio
- Lo que piensas de las uniones civiles

Useful Grammatical Structures

- Use **modifiers** to modify an adjective. Examples include: bastante (quite); un poco (a bit).
- Use **intensifiers** to intensify an adjective. Examples include: realmente (really); muy (very); particularmente (particularly); totalmente (totally); completamente (completely).
- Use **connectives and conjunctions** to make longer sentences. Examples include: porque (because); ya que (as/because); pero (but); sin embargo (however); cuando (when), although (aunque).

Key Vocabulary

Los sustantivos

el anillo	ring
el apodo	nickname
la barrera generacional	generation gap
la boda	wedding
el compromiso	engagement
la confianza	trust
los demás	other people
el esposo	husband, spouse
el estado civil	marital status
el gemelo	twin
el género	gender
el hogar	home
el huérfano	orphan
el maltrato	mistreatment
el muchacho	boy
la pareja	couple, partner
el sobrino	nephew
el viudo	widower

Los adjetivos

atrevido/a	cheeky, insolent, bold, daring
avaro/a	mean, miserly
callado/a	quiet
celoso/a	jealous
cobarde	coward
cuidadoso/a	careful
educado/a	polite
glotón/a	greedy
orgulloso/a	proud
seguro/a de sí mismo	proud, self-assured
sensible	sensitive
torpe	clumsy
vago/a	idle, lazy

Los verbos

acoger	to receive, to welcome
aconsejar	to advise
acordar	to agree on
agradecer	to thank
aguantar	to bear, to put up with
comprometerse	to get engaged
confiar	to trust
despedir(se)	to say goodbye
disculpar(se)	to apologise
llorar	to cry
maltratar	to mistreat
ocuparse de	to look after
parecerse a	to look like
relacionarse con	to relate to (people)

Idiomatic Expressions: Impress the Examiner!

tener la memoria de un elefante	to have a good memory
es mejor solo/a que mal acompañado/a	it's better to be alone than in bad company
encontrar tu alma gemela	to find your soul mate

Tricky Spellings

la barrera generacional	generation gap	Check the doublé 'rr'.
el huérfano	orphan	Check the accent on the 'e'.
glotón (masculine)	greedy	Check the accent on the last 'o' ('glotona' doesn't need an accent).

Key Phrases

tengo un hermano/una hermana que...	I have a brother/sister who
mi padre/madre/amigo/a que se llama...	my father/my mother/my friend (m/f) who is called
mis padres que se llaman	my parents who are called
un amigo/una amiga es alguien que	a friend (m/f) is someone that
discutimos	we argue
nos llevamos bien	we get on
me parezco a	I look like
nos parecemos	We look like each other
quiero casarme	I want to get married
no quiero casarme	I don't want to get married

False Friends

el compromiso	engagement
sensible	sensitive

Tricky Pronunciation: Practise these with your teacher!

el anillo	ring	The letters 'll' are pronounced like the 'y' in the word 'yes'.
el huérfano	orphan	Don't pronounce the 'h'.

Key Questions

1. **¿Cuántas personas hay en tu familia?** How many people are there in your family?
2. **¿Te llevas bien con tu familia? ¿Y cuándo eras más joven?** Do you get on with your family? How about when you were younger?
3. **¿Cómo es tu personalidad?** What is your personality like?
4. **¿Puedes describir algún miembro de tu familia?** Can you describe a member of your family?
5. **¿Cuáles son las cualidades de un buen amigo/ una buena amiga?** What are the qualities of a good friend (m/f)?
6. **¿Qué haces normalmente con tu familia?** What do you usually do with your family?
7. **¿Qué vas a hacer con tus amigos el fin de semana que viene?** What are you going to do with your friends next weekend?
8. **¿Cuál es tu opinión sobre las uniones civiles?** What's your opinion on civil partnerships?
9. **¿Piensas que te casarás en el futuro?** Do you think you will get married in the future?

More Advanced Grammatical Structures

- Use **direct object pronouns** to avoid repetition of a noun. In Spanish, these go in front of the verb e.g. mis padres le conocen (my parents know him).
- Use the **imperfect tense** to describe something you regularly used to do in the past e.g. iba a jugar al parque con mi hermano y mi hermana (I used to go to the play in the park with my brother and sister). Use the preterite tense to talk about actions that were completed in the past e.g. la semana pasada, mi madre y yo fuimos a la piscina (last week, my mum and I went to the swimming pool).
- Use **clauses with Si** to make your sentences more interesting e.g. si tengo tiempo, iré al cine con mis amigos (if I have time I will go to the cinema with my friends).
- Use **synonyms**, e.g vago/a= perezoso/a (lazy); el esposo= el marido (husband).

Key Verbs

Infinitivo	Presente	Pasado	Futuro	Condicional	Imperfecto
hacer – to do	yo hago ; él/ella hace ; nosotros/as hacemos	yo hice; él/ella hizo ; nosotros/as hicimos	yo haré ; él/ella hará ; nosotros/as haremos	yo haría ; él/ella haría ; nosotros/as haríamos	yo hacía; él/ella hacía ; nosotros/as hacíamos
ser – to be	yo soy ; él/ella es ; nosotros/as somos	yo era; él/ella era ; nosotros/as éramos	yo seré ; él/ella será ; nosotros/as seremos	yo sería ; él/ella sería ; nosotros/as seríamos	yo era ; él/ella era ; nosotros/as éramos
estar- to be	yo estoy ; él/ella está ; nosotros/as estamos	yo estuve; él/ella estuvo ; nosotros/as estuvimos	yo estaré ; él/ella estará ; nosotros/as estaremos	yo estaría ; él/ella estaría ; nosotros/as estaríamos	yo estaba; él/ella estaba; nosotros/as estábamos
tener- to have	yo tengo ; él/ella tiene ; nosotros/as tenemos	yo tuve; él/ella tuvo ; nosotros/as tuvimos	yo tendré ; él/ella tendrá ; nosotros/as tendremos	yo tendría ; él/ella tendría ; nosotros/as tendríamos	yo tenía; él/ella tenía ; nosotros/as teníamos
ir- to go	yo voy ; él/ella va ; nosotros/as vamos	yo fui; él/ella fue ; nosotros/as fuimos	yo iré ; él/ella irá; nosotros/as iremos	yo iría ; él/ella irías ; nosotros/as iríamos	yo iba; él/ella iba ; nosotros/as íbamos
querer- to want	yo quiero ; él/ella quiere ; nosotros/as queremos	yo quise ; él/ella quiso; nosotros/as quisimos	yo querré ; él/ella querrá ; nosotros/as querremos	yo querría ; él/ella querría; nosotros/as querríamos	yo quería ; él/ella quería ; nosotros/as queríamos
llevarse (bien/mal) – to get on	yo me llevo ; él/ella se lleva ; nosotros/as nos llevamos	yo me llevé; él/ella se llevó ; nosotros/as nos llevamos	yo me llevaré ; él/ella se llevará ; nosotros/as nos llevaremos	yo me llevaría ; él/ella se llevaría ; nosotros/as nos llevaríamos	yo me llevaba ; él/ella se llevaba; nosotros/as nos llevábamos

Me, My Family and Friends GCSE Foundation Tier French Knowledge Organiser

Key Vocabulary

Les noms

l'amour (m)	love
la barbe	beard
le beau-père	step-father/father in law
la belle-mère	step-mother/mother in law
les cheveux (m)	hair (on head)
le copain / la copine	friend, mate
le demi-frère	half-brother/step-brother
la demi-sœur	half-sister/step-sister
la femme	wife
la fille	daughter
le fils	son
le frère	brother
la grand-mère	grandmother
le grand-père	grandfather
les grands-parents (m)	grandparents
les lunettes (f)	glasses/spectacles
le mari	husband
la mort	death
la naissance	birth
le nom	name/surname
l'oncle (m)	uncle
le / la partenaire	partner
le petit ami	boyfriend
la petite amie	girlfriend
la petite -fille	granddaughter
le petit-fils	grandson
le prénom	first name
les rapports (m)	relationships
le sens de l'humour	sense of humour
la sœur	sister
la tante	aunt
les yeux (m)	eyes

Les adjectifs

aimable	kind
aîné(e)	elder
bavard(e)	chatty/talkative
beau / belle / bel	beautiful
bête	stupid/silly
bouclé(e)	curly
célibataire	single
court(e)	short
égoïste	selfish
fâché(e)	angry
frisé(e)	curly
généreux / généreuse	generous
gentil / gentille	kind/nice
gros / grosse	fat
heureux / heureuse	happy
injuste	unfair
jeune	young
joli(e)	pretty
laid(e)	ugly
long / longue	long
méchant(e)	naughty/nasty
mi-long	medium length
mort(e)	dead
né(e) le...	born on the...
paresseux / paresseuse	lazy
pénible	annoying
raide	straight
séparé(e)	separated
sportif / sportive	sporty
sympa	kind/nice
de taille moyenne	medium height
timide	shy
tranquille	quiet/calm
travailleur / travailleuse	hard-working
triste	sad
unique (fils / fille unique)	only (child)
vieux / vieil / vieille	old

Les verbes

s'appeler	to be called
avoir...ans	to be...years old
se disputer	to argue
dire	to say/tell
s'entendre avec	to get on with
se faire des amis	to make friends
se marier	to get married/to marry
partager	to share
sortir	to go out

Key Ideas

- La composition de ta famille
- Les relations avec ta famille et tes amis
- Les qualités d'un bon ami / d'une bonne amie
- Ce que tu fais avec ta famille et tes amis
- Ton opinion du mariage

Key Phrases

je m'appelle	my name is
j'ai ...ans –	I have ....years (age)
dans ma famillle il y a	in my family there is/are
je m'entends avec –	I get on with
je ne m'entends pas avec	I don't get on with
je me dispute avec	I argue with
j'ai les cheveux....	I have hair... (description of hair colour, style etc)
mon père / ma mère est.....	my father/mother is...
mon meilleur ami / ma meilleure amie est...	my best friend (m/f) is...
mes parents sont	my parents are...
un bon ami / une bonne amie est	a good friend (m/f) is....
à mon avis le mariage c'est...	in my opinion marriage is...

Key Verbs

Infinitif	Présent	Passé	Futur
faire – to do	je fais; il fait; elle fait; nous faisons	j'ai fait; il a fait; elle a fait; nous avons fait	je ferai; il fera; elle fera; nous ferons
être – to be	je suis; il est; elle est; nous sommes	j'ai été; il a été; elle a été; nous avons été	je serai; il sera; elle sera; nous serons
avoir – to have	j'ai; il a; elle a; nous avons	j'ai eu; il a eu; elle a eu; nous avons eu	j'aurai; il aura; elle aura; nous aurons
aller – to go	je vais; il va; elle va; nous allons	je suis allé(e); il est allé; elle est allé(e); nous sommes allé(e)(s)	j'irai; il ira; elle ira; nous irons
sortir – to go out	je sors, il sort, elle sort, nous sortons	je suis sorti(e), il est sorti, elle est sorti(e), nous sommes sorti(e)(s)	je sortirai, il sortira, elle sortira, nous sortirons,

Key Questions

- **Il y a combien de personnes dans ta famille ?** How many people are there in your family ?
- **Tu t'entends bien avec ta famille ?** Do you get on with your family?
- **Comment est ta personnalité ?** What is your personality like?
- **Tu peux décrire un membre de ta famille ?** Can you describe a member of your family?
- **Qu'est-ce-qu' un bon ami / une bonne amie ?** What is a good friend (m/f)?
- **Qu'est-ce-que tu aimes faire avec ta famille ?** What do you like doing with your family?
- **Qu'est-ce-que tu vas faire avec tes amis le week-end prochain ?** What are you going to do with your friends next weekend?
- **Quelle est ton opinion sur le mariage ?** What is your opinion on marriage?
- **Voudrais-tu des enfants dans le futur ?** Would you like children in the future?

Useful Grammatical Structures

- Use **modifiers** to modify an adjective. Examples include: assez (quite); plutôt (rather); un peu (a bit)
- Use **intensifiers** to intensify an adjective. Examples include: vraiment (really); très (very); particulièrement (particularly); totalement (totally); complètement (completely); si (so)
- Use **connectives and conjunctions** to make longer sentences. Examples include: parce que (because); car (as/because); mais (but); cependant (however); quand (when)
- Use the **perfect tense with avoir or être** to describe past events. Examples include: je suis allé(e) (I went; je suis arrivé(e) (I arrived); j'ai visité; j'ai vu (I saw); j'ai voyagé (I travelled); j'ai mangé (I ate); j'ai bu (I drank)

False Friends

l'enfant (m)	child

Tricky Pronunciation - practise these with your teacher!

la famille	family
les cheveux (m)	hair
les yeux (m)	eyes
la fille	girl/daughter
le fils	son
vieux / vieil / vieille	old
gentil / gentille	kind

Tricky Spellings

je m'appelle	my name is	Check: two p's and –elle at the end
la famille	family	Check: two l's
vieux / vieil / vieille	old	Check the vowel combination
je m'entends avec	I get on with	Check the s at the end of entends

Me, My Family and Friends **GCSE Higher Tier French Knowledge Organiser**

Key Ideas

- La composition de ta famille
- Comparer tes relations avec ta famille quand tu étais jeune et maintenant
- Les qualités d'un bon ami / d'une bonne amie
- Ce que tu fais avec ta famille d'habitude
- Ce que que vas faire ce week-end avec tes amis
- Si tu veux te marier
- Ce que tu penses du pacs

False Friends

compréhensif / comprehensive understanding

le pacs civil partnership

Key Phrases

j'ai un frère / une sœur qui...	**I have a brother/sister who...**
mon père / ma mère / mon ami(e) qui s'appelle...	**my father/my mother/my friend (m/f) who is called...**
mes parents s'appellent...	**my parents are called...**
un ami / une amie c'est quelqu'un qui...	**a friend (m/f) is someone who...**
un ami / une amie c'est quelqu'un que je...	**a friend (m/f) is someone that I...**
nous nous disputons	**we argue**
nous nous entendons	**we get on**
je ressemble à	**I look like**
nous nous ressemblons	**we look like each other**
je veux me marier	**I want to get married**
je ne veux pas me marier	**I don't want to get married**

Key Verbs

Infinitif	Présent	Passé	Futur	Conditionnel	Imperfect
faire to do	**je fais; il fait; elle fait; nous faisons**	**j'ai fait; il a fait; elle a fait; nous avons fait**	**je ferai; il fera; elle fera; nous ferons**		
être to be	**je suis; il est; elle est; nous sommes**	**j'ai été; il a été; elle a été; nous avons été**	**je serai; il sera; elle sera; nous serons**		
avoir to have	**j'ai; il a; elle a; nous avons**	**j'ai eu; il a eu; elle a eu; nous avons eu**	**j'aurai; il aura; elle aura; nous aurons**		
aller to go	**je vais; il va; elle va; nous allons**	**je suis allé(e); il est allé; elle est allée; nous sommes allé(e)(s)**	**j'irai; il ira; elle ira; nous irons**		
sortir to go out	**je sors; il sort; elle sort; nous sortons**	**je suis sorti(e); il est sorti; elle est sortie; nous sommes sorti(e)(s)**	**je sortirai; il sortira; elle sortira; nous sortirons**		
vouloir to want	**je veux; il veut; elle veut; nous voulons**	**j'ai voulu; il a voulu; elle a voulu; nous avons voulu**		**je voudrais; il voudrait; elle voudrait; nous voudrions**	
s'entendre to get on	**je m'entends; il s'entend; nous nous entendons**				**je m'entendais; il s'entendait; elle s'entendait; nous nous entendions**

Key Vocabulary

Les noms

la bague	ring
le bouton	spot, pimple, button
la confiance	trust
l'esprit (m)	mind
les fiançailles (f)	engagement
le jumeau	twin (m)
la jumelle	twin (f)
la jeunesse	youth
le neveu	nephew
la nièce	niece
les noces (f)	wedding
le pacs	civil partnership

Les adjectifs

compréhensif / compréhensive	understanding
de mauvaise humeur	bad-tempered
étonnant(e)	amazing
étrange	strange
fier / fière	proud
fou / folle	mad/crazy
jaloux / jalouse	jealous
ondulé(e)	wavy
vif / vive	lively

Tricky Pronunciation

compréhensif / compréhensive	understanding
de mauvaise humeur	bad-tempered
les fiançailles (f)	engagement
les noces (f)	wedding

Me, My Family and Friends **GCSE Higher Tier French Knowledge Organiser**

Key Questions

Qui y-a-t-il dans ta famille?	Who is there in your family?
Tu t'entends bien avec ta famille ? Et quand tu étais plus jeune ?	Do you get on with your family? How about when you were younger?
Comment est ta personnalité?	What is your personality like?
Tu peux décrire un membre de ta famille ?	Can you describe a member of your family?
Quelles sont les qualités d'un bon ami / une bonne amie ?	What are the qualities of a good friend (m/f)?
Que fais-tu d'habitude avec ta famille ?	What do you usually do with your family?
Qu'est-ce-que tu vas faire avec tes amis le week-end prochain ?	What are you going to do with your friends next week-end ?
Quelle est ton opinion sur le pacs ?	What's your opinion on civil partnerships?
Penses-tu te marier dans le futur ?	Do you think you will get married in the future?

More advanced grammatical structures

- **Use both direct object and indirect object relative clauses, e.g. un ami c'est quelqu'un qui est est là pour moi ; une amie c'est quelqu'un que j'aide**
- **Use the imperfect tense to describe something you regularly used to do in the past, e.g. j'allais au terrain de jeux avec mon frere et ma soeur (I used to go to the play park with my brother and sister). To form the imperfect tense, take the 'nous' form of the present tense of the verb, remove the 'ons' and add the imperfect tense endings, e.g. nous jouons: je jouais; tu jouais; il/elle/on jouait; nous jouions; vous jouiez; ils/elles jouaient.**
- **Use clauses with 'si' to make your sentences more interesting, e.g. si j'ai le temps j'irai au cinéma avec mes amis ce week-end (if I have time I will go to the cinema with my friends).**
- **The position of adjectives can change their meaning, e.g. un ancien ami (a former friend); un bâtiment ancien (an old building); ma propre chambre (my own room); ma chambre propre (my clean room); des baskets chères (expensive trainers); mon cher ami (my dear friend).**

Tricky Spellings

la famille	**family**	**Check the double 'l'**
vieux / vieil / vieille	**old**	**Check the vowel combination**
je m'entends avec...	**I get on with...**	**Check the 's' at the end of 'entends'**
connaître	**to know**	**Check the 'hat' on the 'î'**
naître	**to be born**	**Check the 'hat' on the 'î'**
de mauvaise humeur	**bad-tempered**	**Check the '-eur' at the end**
les fiançailles (f)	**engagement**	**Check the accent on 'ç'**

Key Vocabulary (continued)

Les verbes

connaître	to know (a person)
épouser	to marry
gâter	to spoil
gêner	to annoy
en avoir marre	to be fed up
mépriser	to despise
pacser	to sign a civil partnership
se mettre en colère	to get angry
mourir	to die
naître	to be born
se rendre compte	to realise
se ressembler	to look alike
(se) séparer	to separate

Idiomatic expressions: Impress the examiner!

avoir le cœur sur la main	to be very generous
avoir une cervelle d'oiseau	to be forgetful
avoir une mémoire d'éléphant	to have a good memory
couper les ponts avec quelqu'un	to cut all ties with somebody
être de mauvais poil	to be in a bad mood
il vaut mieux être seul que mal accompagné	it's better to be alone than in bad company
se ressembler comme deux gouttes d'eau	to be like two peas in a pod
trouver chaussure à son pied	to find a suitable match
trouver l'âme sœur	to find your soul mate

Me, My Family and Friends GCSE Foundation Tier German Knowledge Organiser

Key Ideas

- Die Familienmitglieder
- Die Familienverhältnisse
- Beschreib dein Freund/deine Freundin
- Was machst du mit deiner Familie/ mit deinen Freunden?
- Heiraten oder nicht?

Key Vocabulary

Verben	
auf die Nerven gehen	to get on one's nerves
gute/schlechte Laune haben	to be in a good/bad mood
streiten (sich mit)	to argue
küssen	to kiss
auskommen (mit)	to get on (with)
aussehen	to look like
heiraten	to get married/to marry
kennenlernen	to get to know
besuchen	to visit

Key Phrases	
Ich heiße...	my name is...
Ich bin ... Jahre alt	I am ... years of age
In meiner Familie gibt es...	in my family there is/are...
Ich verstehe mich gut mit...	I get on with...
Ich verstehe mich nicht gut mit...	I don't get on with...
Ich streite mich mit...	I argue with...
Ich habe ... Haare	I have hair... (description of hair colour, style etc.)
Mein Vater heißt/Meine Mutter heißt...	my father/mother is called...
Mein bester Freund heißt/Meine beste Freundin heißt...	my best friend (m/f) is called...
Meine Eltern sind...	my parents are...
Ein guter Freund/Eine gute Freundin ist...	a good friend (m/f) is...
Meiner Meinung nach ist die Ehe...	in my opinion marriage is...

Adjektive	
lieb	kind
alt	old
humorvoll	humorous
hübsch	pretty
komisch	funny/comical/strange/odd
lockig	curly
ledig	single
kurz	short
egoistisch	selfish
ehrlich	honest
frech	cheeky
großzügig	generous
nett	nice
dick	fat
glücklich	happy
ernst	serious
jung	young
gemein	mean
hässlich	ugly
lang	long
schüchtern	shy
streng	strict
tot	dead
zusammen	together
faul	lazy
nervig	annoying
glatt	straight
getrennt	separated
sportlich	sporty
ordentlich	tidy
mittelgroß	medium height
lebhaft	lively
ruhig	quiet, calm
fleißig	hard-working
traurig	sad
allein	alone
geduldig	patient

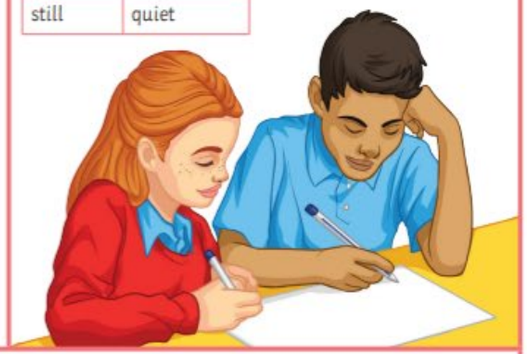
Substantive	
die Liebe	love
der Bart	beard
der Stiefvater/Schwiegervater	step-father/father-in-law
die Stiefmutter/Schwiegermutter	step-mother/mother-in-law
das Haar	hair (on head)
der Freund/die Freundin	(boy)friend/(girl)friend
der Halbbruder/der Stiefbruder	half-brother/step-brother
die Halbschwester/die Stiefschwester	half-sister/step-sister
die Frau	wife/woman
die Tochter	daughter
der Sohn	son
der Bruder	brother
die Großmutter/Oma	grandmother
der Großvater/Opa	grandfather
die Großeltern (pl)	grandparents
die Brille	glasses/spectacles
der Mann	husband/man
der Streit	argument
die Geburt	birth
der Vorname/Nachname	first name/surname
die Zwillinge (pl)	twins
die zivile Partnerschaft	civil partnership
der/die Jugendliche	youth
der/die Erwachsene	adult
der Spitzname	nickname
die Leute (pl)	people
der Junge	boy
das Mädchen	girl
das Geschlecht	sex/gender
die Hochzeit	wedding
der Brieffreund/die Brieffreundin	pen pal
das Enkelkind	grandchild

Me, My Family and Friends GCSE Foundation Tier German Knowledge Organiser

Key Vocabulary

Infinitiv	Präsens	Vergangenheit	Futur
gehen = to go	ich gehe; du gehst; er geht; Sie geht; wir gehen	ich bin gegangen; du bist gegangen; er ist gegangen; wir sind gegangen	ich werde gehen; du wirst gehen; er wird gehen; sie wird gehen; wir werden gehen
haben = to have	ich habe; du hast; er hat; sie hat; wir haben	ich habe gehabt; du hast gehabt; er hat gehabt; sie hat gehabt; wir haben gehabt	ich werde haben; du wirst haben; er wird haben; sie wird haben; wir werden haben
machen = to do	ich mache; du machst; er macht; sie macht; wir machen	ich habe gemacht; du hast gemacht; er hat gemacht; sie hat gemacht; wir haben gemacht	ich werde machen; du wirst machen; er wird machen; sie wird machen; wir werden machen
wohnen = to live	ich wohne; du wohnst; er wohnt; sie wohnt; wir wohnen	ich habe gewohnt; du hast gewohnt; er hat gewohnt; sie hat gewohnt; wir haben gewohnt	ich werde wohnen; du wirst wohnen; er wird wohnen; sie wird wohnen; wir werden wohnen
denken = to think	ich denke; du denkst; er denkt; sie denkt; wir denken	ich habe gedacht; du hast gedacht; er hat gedacht; wir haben gedacht	ich werde denken; du wirst denken; er wird denken; sie wird denken; wir werden denken

False Friends	
still	quiet



Useful Grammatical Structures

The verb **sein** in the present tense is very useful for this topic.

ich bin = i am du bist = you are er ist = he is sie ist = she is wir sind = we are

- Use **modifiers** to modify an adjective. Examples include: ziemlich (quite); ein bisschen/etwas (a bit/rather).
- Use **intensifiers** to intensify an adjective. Examples include: wirklich (really); sehr (very); besonders (particularly); total (totally); völlig (completely); so (so).
- Use **coordinating and subordinating conjunctions** to make longer sentences. Examples include: denn (because); aber (but); weil (because); obwohl (although)
- Use **wenn** to mean **when** if you are referring to the future, present or a habitual action in the past; use **als** to refer to a specific event in the past; use **wann** when you ask a question.
- Use the **perfect tense with haben or sein** to describe past events. Examples include: ich bin gegangen (I went; ich bin gekommen (I came); ich bin gefahren (I travelled); ich habe gesehen (I saw); ich habe gegessen (I ate); ich habe getrunken (I drank).

Tricky Pronunciation	
Practise these with your teacher!	
die Familie	family
ich verstehe mich gut (mit)...	I get on well (with)...
meiner meinung nach...	in my opinion...

Tricky Spellings	
weil	ei not ie
wohne	not whone
Schwester/Geschwister	pay attention to sch

Key Questions	
1. Wie viele Personen gibt es in deiner Familie?	How many people are there in your family?
2. Verstehst du dich gut mit deiner Familie?	Do you get on well with your family?
3. Wie bist du?	What is your personality like?
4. Wie sieht deine Schwester/dein Bruder aus?	What does your sister/brother look like?
5. Wie ist ein guter Freund/eine gute Freundin?	What is a good friend (m/f)?
6. Was machst du gern mit deiner Familie?	What do you like doing with your family?
7. Was machst du nächstes Wochenende mit deinen Freunden?	What are you going to do with your friends next weekend?
8. Was hast du letztes Wochenende mit deiner Familie/mit deinen Freunden gemacht?	What did you do last weekend with your family/friends?
9. Was denkst du über die Ehe?	What is your opinion on marriage?
10. Möchtest du Kinder haben?	Would you like to have children?

Me, My Family and Friends GCSE Higher Tier German Knowledge Organiser

Key Ideas

- Die Familienmitglieder
- Die Familienverhältnisse
- Die Eigenschaften eines guten Freundes
- Ein typisches Wochenende mit deiner Familie
- Heiraten oder nicht?
- Die zivile Partnerschaften

Key Vocabulary

Die Substantive	
der/die Alleinerziehende	single parent
die Braut	bride
der Bräutigam	groom
der Schwager	brother-in-law
die Schwägerin	sister-in-law
die Trauung	the wedding (ceremony)
der/die Verlobte	fiancé(e)
der Junggeselle	bachelor
der Neffe	nephew
die Nichte	niece
die gleichgeschlechtliche Ehe/Partnerschaft	same-sex marriage/ partnership
die Ehe	marriage

Key Phrases	
Ich habe einen Bruder/eine Schwester, die...	I have a brother/sister who...
Meine Eltern heißen...	My parents are called...
Ein guter Freund / Eine gute Freundin ist...	A good (male) friend/A good (female) friend is...
Wir streiten uns über...	We argue about...
Wir verstehen uns gut	We get on well
Ich bin meiner (f)/meinem (m) ... ähnlich	I am similar to/like...
Ich möchte heiraten	I would like to get married
Ich will nicht heiraten, weil...	I don't want to get married because...

Idiomatic Expressions: Impress the Examiner!	
Er/Sie geht mir auf den Wecker	He/She gets on my nerves
Ich habe die Nase voll von meinem (m)/meiner (f)...	I'm fed up with my...
Auf immer und ewig ist...	Forever and ever is...
Wir sind dicke Freunde	We are close friends
Den Bund fürs Leben schließen	To tie the knot

Die Verben	
einen (guten) Sinn für Humor	to have a (good) sense of humour
leiden	to suffer
zweifeln	to doubt
verzeihen	to forgive
aufpassen (auf)	to look after
trennen (sich)	to separate
sterben	to die

Die Adjektive	
eingebildet	conceited
minderjährig	(to be a) minor, under legal age
selbstbewusst	self-confident, self-assured
treu	faithful, loyal
volljährig	(to be) of age
verrückt	mad/crazy
eifersüchtig	jealous
zuverlässig	dependable
alleinstehend	single

Infinitiv	Präsens	Perfekt	Futur	Konditional	Imperfekt
gehen = to go	Ich gehe; du gehst; er geht; sie geht; wir gehen	ich bin gegangen; du bist gegangen; er ist gegangen; sie ist gegangen; wir sind gegangen	ich werde gehen; du wirst gehen; er wird gehen; sie wird gehen; wir werden gehen	ich würde gehen; du würdest gehen; er würde gehen; sie würde gehen; wir würden gehen	ich ging; du gingst; er ging; sie ging; wir gingen
haben = to have	ich habe; du hast; er hat; sie hat; wir haben	ich habe gehabt; du hast gehabt; er hat gehabt; sie hat gehabt; wir haben gehabt	ich werde haben; du wirst haben; er wird haben; sie wird haben; wir werden haben	ich würde haben; du würdest haben; er würde haben; sie würde haben; wir würden haben	ich hatte; du hattest; er hatte; sie hatte; wir hatten
machen= to do	ich mache; du machst; er macht; sie macht; wir machen	ich habe gemacht; du hast gemacht; er hat gemacht; sie hat gemacht; wir haben gemacht	ich werde machen; du wirst machen; er wird machen; sie wird machen; wir werden machen	ich würde machen; du würdest machen; er würde machen; sie würde machen; wir würden machen	ich machte; du machtest; er machte; sie machte; wir machten
wohnen= to live	ich wohne; du wohnst; er wohnt; sie wohnt; wir wohnen	ich habe gewohnt; du hast gewohnt; er hat gewohnt; sie hat gewohnt; wir haben gewohnt	ich werde wohnen; du wirst wohnen; er wird wohnen; sie wird wohnen; wir werden wohnen	ich würde wohnen; du würdest wohnen; er würde wohnen; sie würde wohnen; wir würden wohnen	ich wohnte; du wohntest; er wohnte; sie wohnte; wir wohnten
denken= to think	ich denke; du denkst; er denkt; sie denkt; wir denken	ich habe gedacht; du hast gedacht; er hat gedacht; wir haben gedacht	ich werde denken; du wirst denken; er wird denken; sie wird denken; wir werden denken	ich würde denken; du würdest denken; er würde denken; sie würde denken; wir würden denken	ich dachte; du dachtest; er dachte; sie dachte; wir dachten

Me, My Family and Friends GCSE Higher Tier German Knowledge Organiser

Key Questions	
Wie viele Personen gibt es in deiner Familie?	How many people are there in your family?
Verstehst du dich gut mit deiner Familie?	Do you get on well with your family?
Wie bist du?	What are you like?
Wie würdest du deine Eltern beschreiben?	How would you describe your parents?
Wie ist ein guter Freund/eine gute Freundin?	What is a good friend (m/f)?
Was machst du normalerweise mit deiner Familie?	What do you normally do with your family?
Was machst du nächstes Wochenende mit deinen Freunden?	What are you going to do with your friends next weekend?
Was denkst du über zivile Partnerschaften?	What's your opinion on civil partnerships?
Willst du heiraten? Warum/Warum nicht?	Do you want to get married? Why/Why not?

False Friends	
also	therefore (not 'as well as')
brav	well-behaved (not 'courageous')

Useful Grammatical Structures

The verb sein in the present tense is very useful for this topic.

ich bin = **I am** du bist = **you are** er ist = **he is** sie ist = **she is** wir sind = **we are**

- Use **modifiers** to modify an adjective. Examples include: **ziemlich** (quite); **ein bisschen/etwas** (a bit/rather).
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- Use **coordinating and subordinating conjunctions** to make longer sentences. Examples include: **denn** (because); **aber** (but); **sondern** (but); **weil** (because); **obwohl** (although); **während** (while, whereas, during); **da** (as, since); **seit** (since); **dass** (that).
- Use **wenn** to mean **when** if you are referring to the future, present or a habitual action in the past; use **als** to refer to a specific event in the past; use **wann** when you ask a question.
- Use the **perfect tense with haben or sein** to describe past events. Examples include: **ich bin gegangen** (I went); **ich bin gekommen** (I came); **ich bin gefahren** (I travelled); **ich habe gesehen** (I saw); **ich habe gegessen** (I ate); **ich habe getrunken** (I drank). Vary your past tense ideas by using the imperfect tense.
- Use the **future and conditional tense with specific time phases** to convey future/possible actions: **In der Zukunft** (in the future); **eines Tages** (one day).

Tricky Spellings	
nächstes Wochenende (next weekend)	Ensure that the umlaut is included.
ein gut**er** Freund/eine gut**e** Freundin (a good friend)	Check adjective endings.
mit meinen Freund**en**/Schwester**n**/Brüder**n** (with my friends/sisters/brothers)	Check the spelling of plural nouns in the dative case.

Tricky Pronunciation	
Practise these with your teacher!	
zuverlässig	Check the pronunciation of ä.
verrückt	Check the pronunciation of ü.