Year 11 Knowledge Organiser

Autumn 2026

Name: _____

Tutor Group: _____



ORMISTON DENES ACADEMY

[OAT] Ormiston Academies Trust

ACHIEVING MORE TOGETHER

Your Knowledge Organiser

What are Knowledge Organisers?

A Knowledge Organiser is a set of key facts or information that students need to be able to know and recall in order to master a unit or topic. In order to produce our Knowledge Organisers, our departments have effectively extracted from their curriculum content the key vocabulary, facts and information that it would help students to commit to long-term memory.

Why are we using Knowledge Organisers?

All of us, throughout our lives, will benefit from understanding how best we learn – and what strategies for learning we can employ in order to commit information to long-term memory. At school, we talk a lot about the way that knowledge is accumulated over time– and about the importance of over-learning and consolidation. Knowledge Organisers are designed to provide students with opportunities to over-learn and consolidate recently learned information. They encourage use of active and multi-sensory revision practices, repetition, and spaced retrieval. We believe that Knowledge Organisers are important because they are designed to teach students the metacognitive study skills that they will require throughout their adult learning lives; effectively, what we are using Knowledge Organisers to introduce is a five-year programme of revision aimed at developing the skills required for effective revision and developing the knowledge they will need to be effective adults and further learners.

What is Metacognition?

Metacognition is the awareness and understanding of one's own thought processes. When we talk about developing metacognitive skills in students, we're talking about students developing an understanding of how they learn best. For example, a student who wishes to commit key quotations from a text to long term memory may decide to make flashcards. When making those flashcards, a student may make all sorts of decisions such as 'using the colour yellow will help me to remember that…' The decision regarding which multi-sensory strategy to employ (flashcards) and the decisions that are made during active employment of the strategy…both are examples of metacognition.

How to Use Your Knowledge Organiser:

CHUNK IT	RE-LEARN IT	WRITE IT	SPEAK IT
Split the knowledge organiser into manageable chunks. Choose a chunk at a time to memorise. Start with the most important or the most difficult.	Re-read your notes on the chosen topic. Do some wider research on the internet until you understand it.	Write a detailed description or an explanation about everything that you know about this topic. Try to do this without your notes. Write key facts you need to memorise over and over until you have memorised them.	Give a verbal explanation about this topic as if you were teaching it. Repeat the facts you need to remember 20 times. Record key facts from the knowledge organiser into your phone.

How to Use Your Knowledge Organiser:

TRANSFORM IT	REDUCE IT	SORT IT	LINK IT
Transform key facts into a series of images. Transform what you have learned into a diagram. Transform your learning into a poem or a story.	Reduce what you have learned to five key bullet points or prompts. Reduce the three most important facts linked to a topic into 10 words.	Rank the most important pieces of information from your knowledge organiser. Categorise your key facts into groups, you choose the group headings.	Find three links between this topic and others you have studied. Link the key points together.

AN INSPECTOR CALLS KNOWLEDGE ORGANISER

Context – *An Inspector Calls* was written by J.B. Priestley, and was first performed in the UK in 1946. However, it is set in 1912.

J.B. Priestley – John Boynton Priestley was born in Yorkshire in 1894. He fought in the first world war and came very close to death on a couple of occasions. In the 1930s, Priestley became concerned with the effects of social inequality in Britain, and in 1942 set up a new political party, the Common Wealth Party. It merged with the Labour Party, and was integral in developing the welfare state.



Socialism – Socialism is an approach to economic and social systems that is characterised by social ownership, democratic control, and high levels of equity. Socialist regimes are generally concerned with ensuring that disparities between wealth and social status are erased across society. After the two World Wars, British society was far more open to socialist ideas. In *An Inspector Calls*, the Inspector harbours socialist attitudes.



Pre and Post-War –Before the First World War, there was deemed to be a general air of complacency regarding the prospect of any war taking place. There were strong distinctions between upper and lower classes, and women were subservient to men in society. After the Second World War ended in 1945, class distinctions had been greatly reduced by the two wars, and women had earned a more valued place in society (they had filled in for men whilst they were away at war). After 1945, there was a greater desire for social change.



Social and Moral Responsibility –Attitudes towards social and moral responsibility changed rapidly in the time between when the play was set (1912) and the time when the play was written (1946). In 1912, the general attitude of those with social and economic sway was towards looking after oneself and one's family. By the mid-1940s, however, Clement Atlee's Labour party won a landslide election, reflecting a wave of enthusiasm towards communal responsibility for everyone in society.



Realism and Postmodernism – Many see *An Inspector Calls* as a play that combines contrasting styles. Certainly, it contains elements of both realism (popular early in the 20th Century) and postmodernism (which became popular later). The play features very real characters, speaking in common prose in a similar manner to dialogue in a novel. However, with the presence of the Inspector, Priestley introduces elements that are beyond rational reasoning and explanations.



The Titanic– RMS Titanic was a British passenger liner that sank in the North Atlantic Ocean in the morning hours of 15th April 1912. As around 1,500 people died, it was one of the deadliest commercial maritime disasters in modern history. The Titanic was designed to be the pinnacle of both safety and comfort, and due to its enormous size and quality was frequently labelled 'unsinkable.' In *An Inspector Calls*, Birling claims this, thus immediately losing respect from the audience.



Main Characters – Consider what Priestley intended through his characterisation of each of the below...

Arthur Birling – Arthur is the patriarch of the Birling family. He is described as a 'portentous man in his early fifties.' His success as a businessman in the manufacturing industry allows the Birlings to live in upper-middle class comfort. He believes in capitalist principles and rejects socialist ideas of responsibility for one another in society. He considers his daughters engagement as good for business.

Quote: "You'll have a good laugh over it yet."

Sheila Birling – Sheila is the daughter of Arthur and Sybil. She is described as being 'in her early twenties' and is engaged to Gerald Croft. Sheila is a sensitive character, who shows a caring side, and thus she is devastated upon hearing about her family's role in the death of Eva Smith. She wonders how others in her family can simply go on as though nothing has happened.

Quote: "You're pretending everything's just as it was before."

Sybil Birling – Sybil is the matriarch of the Birling family. She is often described as being a 'cold' character. It is suggested that Sybil comes from a family of higher social standing than Arthur, and at times she reminds him of proper social etiquette. She serves on a local committee to aid those in need, and seems primarily consumed with protecting the family's public image.

Quote: "They're over-tired. In the morning they'll be as amused as we are."

Eric Birling – Eric is the son of Arthur and Sybil Birling, and the older brother of Sheila. Eric works part-time for the family business, and has a drinking problem that he attempts to hide from his family. When it is revealed that Eric has made a woman pregnant, outside of marriage, and has stolen from the family business, the family are finally forced to confront issues surrounding Eric.

Quote: "don't forget I'm ashamed of you as well – yes both of you."

The Inspector – The Inspector is (apparently) a representative of the local police force, sent to investigate the events leading up to the suicide of a young woman, who went by the name of both Eva Smith and Daisy Renton. When speaking to the family, the Inspector seems to know the answers to each of the questions that he asks, and appears to offer them a socialist message. After he leaves, the family gather evidence that he does not actually serve on the force.

Quote: "We are members of one body. We are responsible for each other."

Gerald Croft – Gerald is the fiancé of Sheila and the son of another prominent manufacturing family. Gerald's family have an elevated social status, and as a result Arthur worries that Gerald's family may feel that he is marrying beneath himself. Although the Inspector criticises Gerald's affair (and subsequent breakup) with Daisy, he seems to suggest that Gerald is the least morally culpable of the family for her death.

Quote: "I didn't feel about her as she felt about me."

Themes – A theme is an idea or message that runs throughout a text.

Responsibility and Guilt – All of the family are forced to reflect upon their behaviour towards Eva Smith/ Daisy Renton, and consider how responsible they are for her death. Some characters admit responsibility and feel guilt more readily, such as Sheila and Eric. On the other hand, characters such as Arthur and Sybil are more unwilling to accept responsibility for the girl's demise.

Age– Priestley uses age to show the different prevailing attitudes in society at the time. The older characters represent an outdated way of thinking; characters such as Arthur and Sybil believe in only looking after themselves in their family. The younger characters (Sheila and Eric) represent new towards caring about others in society.



Class and Gender – Class and gender are also predominant themes in the novel. Eva Smith's position in society is severely weakened because she is from a lower class background and she is also a woman. Because of biases related to class and gender, Birling is dismissive of the hundreds of working class girls looking for a pay-rise, whilst Mrs Birling refers to her as 'a girl of that sort' in a derogatory manner.

The Supernatural – The presence of the Inspector weaves a supernatural element into the play. His surname (Goole) is certainly a play on the word 'ghoul' (a ghost). He is unheard of by other members of the police force, leading the characters to at first dismiss him as simply a hoaxer, yet he seems to have prior knowledge of the characters' actions, and foresees the suicide before it happens.



Scene-by-Scene Summary – Alongside key quotations from each scene.		
Beginning of Act I	The play begins in 1912, with a dinner at the Birling residence. Arthur leads a toast on the future marriage of his daughter, Sheila, to Gerald. Arthur is pleased that the marriage will bring his company closer together with Gerald's family's established company. Sheila lightly teases Gerald about his distant behaviour the summer before. Arthur explains that the world is in a good time, that talk of German aggression should be discounted, and that a new 'unsinkable' ship is being built. Privately after dinner, Arthur tells Gerald that he is up for a knighthood, which will nullify Gerald's mother's fears of him marrying down. Arthur then tells Eric and Gerald of his belief in looking after one's self and one's family – rejecting ideas of socialism. Edna enters and says that an Inspector wants to speak with them.	*"I've learnt in the good hard school of experience – that a man has to mind his own business and look after himself and his own"* 
End of Act I	The inspector introduces himself as Goole. Arthur declares that he has never heard of him before. The Inspector states that a girl named Eva Smith has committed suicide by drinking disinfectant. He shows Arthur alone a photograph of her. Arthur admits that he employed her two years before, but dismissed her for striking over wages. He then shows Sheila the photograph, who is shocked. She admits to getting the girl fired from her next job, at a clothes shop, out of jealousy. There she worked under the name Daisy Renton. Sheila is horrified. Gerald becomes aware that this is a girl that he had an affair with.	*"Two hours ago a young woman died on the infirmary. She'd been taken there this afternoon because she'd swallowed a lot of strong disinfectant."* 
Beginning of Act II	As the Inspector speaks to Gerald and Sheila, Sybil enters and calls his questions 'impertinent.' Sheila warns Sybil not to fall into the trap of complacency with the Inspector, but Sybil warns her to be quiet. Sybil expresses that Eric has had too much to drink at dinner – to Sybil's embarrassment, Sheila and Gerald admit that this is a steady problem with Eric. The Inspector then questions Gerald, who reluctantly admits that he knows a Daisy Renton. He had protected her in a bar from a lecherous old man, and then put her up in a friend's lodgings. She became his mistress. Eventually it ended, and they lost contact. Sheila explains that she actually respects Gerald now, for telling the truth. However, she says they must start again in their relationship. Gerald is allowed to leave.	*"I don't dislike you as I did half an hour ago, Gerald. In fact, in some odd way, I rather respect you more than I've ever done before."* 
End of Act II	The Inspector shows Sybil the photograph of the deceased woman – she lies and says that she does not know her. Sheila pleads with her to tell the truth. It emerges that Sybil refused to give the girl money in her role as a member of the Brumley Women's Charity Organisation, out of 'impudence.' She had pretended that she was called 'Mrs Birling.' The Inspector reveals that she was looking for money as she was pregnant (not Gerald's baby). The girl eventually admitted that she was not married, and couldn't take money off the father, as she knew it was stolen. Under pressure from the Inspector, Sybil contends that the man should bear the responsibility of the girl's subsequent death. It is at this point that the other characters realise that Eric must in fact be the father. Sybil pauses in shock, seemingly wishing to retract her past statements. Eric enters the room, with all staring at him.	*"If, as she said, he didn't belong to her class, and was some drunken young idler, then that's all the more reason why he shouldn't escape. He should be made an example of. If the girl's death is due to anybody, then it's due to him."* 
Beginning of Act III	Eric confesses that he was very drunk the night that he met the girl, and that he followed her home and convinced her to let him stay over. He began a relationship with her, and she fell pregnant. As she needed financial support, Eric swindled Arthur's company out of money. Arthur is extremely angry when he hears this. With the family now in a state of complete anguish, the Inspector goes through each of them, explaining that they all had a significant part to play in the girl's death. Before leaving, the Inspector states that all people should look out for one another if society is to survive. He notes that the Birlings and Gerald must now live with the repercussions of their actions for the rest of their lives, as recompense for Eva Smith/ Daisy Renton, who lost hers.	*"We don't live alone. We are members of one body. We are responsible for each other. And I tell you that the time will soon come when, if men will not learn that lesson, then they well be taught it in fire and bloody and anguish."* 
End of Act III	Arthur says that Eric is predominantly at fault for the death of the girl, and he worries about the public scandal that will be generated. Eric and Sheila criticise Arthur for worrying about his knighthood when someone has died. In light of what Arthur was discussing before the Inspector came, they begin to suspect that he was a hoax. To Sheila and Eric, this is not important (their actions were still terrible) but to Arthur, it means everything (no public scandal). These suspicions are confirmed, when Gerald returns, having bumped into a police officer on the street – there is no Inspector Goole. Arthur then phones the hospital, who confirm that there has been no suicide. Arthur and Sybil delight in this, whilst their children are horrified that they have forgotten their behaviour (despite no one having actually died) so quickly. Just as Arthur is reveling in the fact that the others were all 'bluffed', the phone rings. A girl has just been transported to hospital, dead. She has committed suicide. An inspector is on the way to the house.	*"Birling: (pointing to Eric and Sheila) Now look at the pair of them – the famous younger generation who know it all. And they can't even take a joke"*  *The telephone rings sharply. There is a moment's complete silence. Birling goes to answer it.//*

Priestley's Dramatic Devices	
Dramatic Irony	Arthur Birling suggests that the *Titanic* is unsinkable, and yet the audience knows that it sank on its maiden voyage.
Cliffhangers	At the end of Act One, the Inspector appears and says 'Well?' to Gerald, leaving the audience to wonder how Gerald is implicated.
Stage Directions	The precise directions detailing Gerald 'gravely' stating his involvement with Daisy Renton adds more detail to aid the actor's delivery.
Dramatic Tension	The audience feels an increase in tension as they await information regarding how each character is implicated in Eva Smith's death.

Form – The play fits into three possible forms.

Well-Made Play	**Morality Play**	**Crime Thriller**
-A popular type of drama from the 19th Century -The events build to a climax -Primarily concerned with events that happened before the play -Plot is intricate and complex.	-These were most popular during the 15th and 16th centuries -They taught the audience lessons that focused on the seven deadly sins. -Characters who committed these sins were punished.	-As the name suggests, this involves a gripping tale based around a crime -The audience receives clues and must guess what has happened before the end. -All is revealed by the climax.

English Language Paper 2:

Writers' Viewpoints and Perspectives Knowledge Organiser

1 hour 45 mins

The absolute basics:



Read the texts: 10 mins

Section A:

Q1: 4 true statements (5 mins)
Q2: Summarise differences (10 mins)
Q3: How does the writer use language… (15 mins)
Q4: Compare writers' perspectives…(20 mins)

Section B:

Q5: Writing an opinion text (45 mins)

READ

Start of the exam (10 mins)

1. Read the blubs for BOTH sources. What is the GAP? (Genre, audience, purpose – Consider how might this effect how the text is written and the opinion of the writers)

2. Read BOTH sources and ensure you understand what is going on in each one.

2. Read through the glossary for words you are unsure of.

Section A: **Question 1 (5 mins, 4 marks)**

Question stem: Choose 4 statements which are true.

Planning

1. Read the question carefully and highlight key words inc. line specification.

2. Read each of the statements carefully.

3. Cross through the numbers of those which are clearly false. E.g. ~~3~~

Writing

1. Shade in the boxes of the 4 you think are true.

2. If you are unsure of one, make an educated guess!

Question 2 (10 mins, 8 marks)

Question stem: Write a summary of the different…

Planning



1. Read the question and highlight the key words. What differences does it what you to focus on?

2. Skim back over both sources. Highlight key quotations which answer the question. Are there any clear differences between the two sources? Try to match up the quotes to allow you to make the best inferences.

Writing

1. Use SQI (statement, quotation, inference).

2. Try to do at least 2 pairs (so 4 SQIs in total). Grade 7+ = 3 pairs.

3. Use comparative connectives like 'however', 'in contrast' etc.

Useful sentences starters:

Possible intro if time:

In Source A and B, the writers describe different… In Source A… however, in Source B…

Statement:

TOP TIP

In Source A we learn that…
In Source A the writer focuses on/describes…

Quotation:

For instance/for example

Inference:

This could suggest that…
From this we can infer…
The writer evokes…

Top Tip: Try to use the writers' names, rather than just saying 'the writer'. This makes you sound more sophisticated!

Grade 7+ = It could also imply that… (Alternative interpretation)

Remember: There are no marks available for using subject terminology or doing language analysis – you are examined on this is Q3 and 4.

Question 3 (15 mins, 12 marks)

Question stem: How does the writer use language to…

This question is exactly like Q2 on Lang P1! It's just language analysis!

Planning

1. Read the question carefully. Which source are you asked to focus on and which lines?

2. Draw a box around the correct section of text on the insert.

3. Highlight the key words in the question so you know what to focus your answer on. Consider the purpose of the language linked to the question. Will you be looking for persuasive, descriptive or inclusive language?

4. Skim through the relevant section of text. Highlight and label key words/phrases/devices which will help you to answer the question.

Writing

1. Aim to write 3 PEA paragraphs in the time.

2. Write an introductory sentence explaining the mood/tone linked to the question.

Useful sentence starters:

Possible intro if time:

In Source… the writer uses language to cleverly build a tone of…

Point:

Firstly, the writer uses [insert language device] in order to…

Evidence:

For instance/for example this is seen when…

Analysis:

This evokes a sense of…
The word/subject term has connotation of … and therefore creates an atmosphere of…
We might feel compelled to…
The writer helps us to imagine/realise…

Grade 7+ = consider the overall effect of the language. Link different examples together to support your points (i.e. PEAEALs)

Question 4 (20 mins, 16 marks)

Question stem: Compare the writers' viewpoints and perspectives…

Planning

SQIME

1. Read the question carefully and highlight the key words. You know you are analysing the different opinions, but their opinions of what? Identify this.

2. Skim through the two texts again. Highlight and label the different opinions they have on the topic you have been asked about. ***Select your evidence carefully***: consider interesting language or structural devices used to get their message across. You will need to analyse these in your answer!

Writing

1. Write an opening sentence that clearly refers to the question.

2. Use SQIME (statement, quotation, inference, method, effect). Basically, Q2 + Q3.

Useful sentence starters:

Possible intro but adapt as necessary:

In Source A and B, both writers discuss… However, they have different opinions and use a range of methods to communicate these feelings.

For the SQI section of the SQIME – see sentence starters for Q2 for help!

For the ME:

Method:
The writer uses [insert subject term] to evoke a sense of…/to create…

Effect:
This might make us feel/imagine/realise…

Statement = WRITER'S feelings
Effect = READER'S feelings

Question 5 (45 mins, 40 marks)

Question stem: Writing to convey your opinion on a given topic.

Planning



1. Read the task carefully and identify the GAP you need to write for. Highlight the key words. You need to consider how you will adapt your writing to suit the specified GAP. Have a look below for some hints:

Text type	To include
Letter	Dear Sir/Madam/name Yours sincerely (know name)/yours faithfully (don't know name)
Speech	Lots of direct address Rhetorical indicators Clear sign off
Article	Original title Subheadings Introductory paragraph
Leaflet	Original title Subheadings Introductory paragraph Bullet points
Essay	Introduction and conclusion
CLEAR PARAGRAPHS IN ALL!	

2. Make a note of key words and techniques you have seen used in the extracts you have just read. What can you STEAL?

3. Write AAFORREESTY at the top of the page. Which of these will you include and where? Tick them off as you use them in your writing.

4. Plan using the following structure:

Hook
Define the scope of the debate
Other side of the argument
Your opinion
Draw it all together
Catchy one-liner

PROOF READ YOUR WORK! Inc. spelling of homophones and editing dull words!

Writing

- Vary sentence openers
- Vary sentence and paragraph openers
- Use a range of punctuation, including a semi-colon

Remember you should use descriptive techniques too like adjectives, similes, metaphors, semantic fields etc.

Key Knowledge: Macbeth

Tragedy:

A drama which traces the downfall of an individual. The ingredients are:

*The tragic hero should be of high, but not perfect, worth or standing.

*A tragic flaw, weakness or excess of arrogant ambition (hubris) leads to downfall: Macbeth's hamartia is his unchecked ambition.

*Peripeteia: a moment of no return (murdering Duncan)

*Anagnorisis: realisation of truth (Macduff's C-section birth)

Plot:

Act I

On a bleak Scottish moorland, Macbeth and Banquo, two of King Duncan's generals, discover three strange women (witches). The witches prophesy that Macbeth will be promoted twice: to Thane of Cawdor (a rank of the aristocracy bestowed by grateful kings) and King of Scotland. Banquo's descendants will be kings, but Banquo isn't promised any kingdom himself. The generals want to hear more, but the "weird sisters" disappear.

Soon afterwards, King Duncan names Macbeth Thane of Cawdor as a reward for his success in the recent battles. The promotion seems to support the prophecy. The King then proposes to make a brief visit that night to Macbeth's castle at Inverness. Lady Macbeth receives news from her husband about the prophecy and his new title. She vows to help him become king by whatever means are necessary

Act 2

Macbeth returns to his castle, followed almost immediately by King Duncan. The Macbeths plot together to kill Duncan and wait until everyone is asleep. At the appointed time, Lady Macbeth gives the guards drugged wine so Macbeth can enter and kill the King. He regrets this almost immediately, but his wife reassures him. She leaves the bloody daggers by the dead king just before Macduff, a nobleman, arrives. When Macduff discovers the murder, Macbeth kills the drunken guards in a show of rage and retribution. Duncan's sons, Malcolm and Donalbain, flee, fearing for their own lives; but they are, nevertheless, blamed for the murder.

Act 3

Macbeth becomes King of Scotland but is plagued by feelings of insecurity. He remembers the prophecy that Banquo's descendants will inherit the throne and arranges for Banquo and his son Fleance to be killed. In the darkness, Banquo is murdered, but his son escapes the assassins. At his state banquet that night, Macbeth sees the ghost of Banquo and worries the courtiers with his mad response. Lady Macbeth dismisses the court and unsuccessfully tries to calm her husband.

Act 4

Macbeth seeks out the witches who say that he will be safe until a local wood, Birnam Wood, marches into battle against him. He also need not fear anyone born of woman (that sounds secure, no loop-holes here). They also prophesy that the Scottish succession will still come from Banquo's son. Macbeth embarks on a reign of terror, slaughtering many, including Macduff's family. Macduff had gone to seek Malcolm (one of Duncan's sons who fled) at the court of the English king. Malcolm is young and unsure of himself, but Macduff, pained with grief, persuades him to lead an army against Macbeth.

Act 5

Macbeth feels safe in his remote castle at Dunsinane until he is told that Birnam Wood is moving towards him. Malcolm's army is carrying branches from the forest as camouflage for their assault on Macbeth's stronghold. Meanwhile, an overwrought and conscience-ridden Lady Macbeth walks in her sleep and tells her secrets to her doctor. She commits suicide. As the final battle commences, Macbeth hears of Lady Macbeth's suicide and mourns. In the midst of a losing battle, Macduff challenges Macbeth. Macbeth learns Macduff is the child of a caesarean birth (loophole!), realises he is doomed, and submits to his enemy. Macduff triumphs and brings the head of the traitor Macbeth to Malcolm. Malcolm declares peace and goes to Scone to be crowned king.

Key Knowledge: Macbeth

Context:

The Great Chain of Being

Jacobeans believed that God set out an order for everything in the universe. This was known as the Great Chain of Being. On Earth, God created a social order for everybody and chose where you belonged. The king or queen was in charge because God put them there and they were only answerable to God (the Divine Right of Kings). This meant that disobeying the monarch was a sin.

Women

Jacobean England was a society controlled by men. Women were seen as the weaker sex and were expected to be meek and mild, and most importantly, obedient to their fathers and later their husbands.

The Divine Right of Kings

It was believed that the King was divinely chosen by God. If his position was violated it would destroy the natural order in the universe and bring strife and chaos to the world. Any act of treachery against the King was considered to be a mortal sin against God. The penalty was death, and eternal damnation.

Witchcraft

In Shakespeare's time people believed in witches. They were people who had made a pact with the Devil in exchange for supernatural powers. They were intent on performing unnatural acts so as to disrupt the natural order

The Gunpowder Plot and James I

On 5th November, 1605, Guy Fawkes and his fellow conspirators attempted to assassinate King James I. James I's position on the throne was insecure as he was Scottish, Protestant, and not a direct descendent of Elizabeth I. James was a patron (financial supporter) of Shakespeare, who therefore wrote Macbeth to show the consequences of attempting to kill the king.

Character

Macbeth A captain in Duncan's army, later the Thane (Lord) of Glamis and Cawdor. When Three Witches predict that he will one day be king of Scotland, he takes his fate into his own hands, allowing his ambition and that of his wife to overcome his better judgement. His bloody reign culminates in a battle against Malcolm and the English forces.

Lady Macbeth The devilish wife of Macbeth, whose ambition helps to drive her husband toward the desperate act of murder. Subsequently, her husband's cruelty and her own guilt recoil on her, sending her into a madness from which she never recovers.

Banquo A fellow-captain and companion of Macbeth, who also receives a prophecy from the Witches: that his children will one day succeed to the throne of Scotland. This information is sufficient to spell his death at the hands of the resentful Macbeth, who is later haunted by Banquo's ghost.

Duncan King of Scotland. His victories against rebellious kinsmen and the Norwegians have made him a popular and honoured king. His decision to pass the kingdom to his son Malcolm provokes his untimely death at the hands of Macbeth.

The Witches Three agents of Fate who reveal the truth (or part of it) to Macbeth and Banquo and who later appear to confirm the downfall and tragic destiny of the tyrannical Macbeth.

Macduff A thane (nobleman) of Scotland who discovers the murdered King Duncan. Suspecting Macbeth and eventually turning against him, Macduff later flees to England to join Malcolm. When Macbeth arranges the murder of his wife and children, Macduff swears personal revenge.

Fleance Banquo's son, who, by escaping Macbeth's plot on his life, will go on to be father to a line of kings.

Donalbain and Malcolm Duncan's two sons. Fearful of implication in their father's murder, they flee Scotland, Donalbain to Ireland and Malcolm to England, where he raises a large army with the intention of toppling the tyrant Macbeth.

Lennox, Ross, Menteth, Angus, Caithness Thanes of Scotland, all of whom eventually turn against the tyrannical Macbeth.

The Porter, the Old Man, the Doctors Three commentators on events, all of whom have a certain degree of wisdom and foresight. The Porter hints at the Hell-like nature of Macbeth's castle; the Old Man associates the murder of King Duncan with the instability of the natural world; the Doctors recognise disease and disorder even though they cannot cure it.

Key Knowledge: Macbeth

Themes:

Ambition

Although he is encouraged by the Witches, Macbeth's true downfall is his own ambition. Lady Macbeth is as ambitious as her husband, encouraging him to commit murder to achieve their goals. Both Macbeths fail to see how their ambition makes them cross moral lines and will lead to their downfall. Once Macbeth kills Duncan, his ambition to hold on to his title as king becomes intertwined with his paranoia. Rather than being able to enjoy the fruits of his ambition, he becomes obsessed with maintaining the power he's won. Macbeth's blind pursuit of power can be contrasted with other ambitious characters in the play like Banquo. Banquo also hears the Witches' prophesies, and similarly has ambition for his sons. But unlike Macbeth, Banquo's morality prevents him from pursuing his goal at any cost. At the end of the play, Macbeth has achieved all he wanted, but has nothing. With his wife gone and no hope of producing a prince, Macbeth sees what his unchecked ambition has cost him: the loss of all he holds dear.

The Relationship Between Cruelty and Masculinity

Characters in Macbeth frequently dwell on issues of gender. Lady Macbeth manipulates her husband by questioning his manhood, wishes that she herself could be "unsexed," and does not contradict Macbeth when he says that a woman like her should give birth only to boys. In the same manner that Lady Macbeth goads her husband on to murder, Macbeth provokes the murderers he hires to kill Banquo by questioning their manhood. Such acts show that both Macbeth and Lady Macbeth equate masculinity with naked aggression, and whenever they converse about manhood, violence soon follows. Their understanding of manhood allows the political order depicted in the play to descend into chaos.

The Difference Between Kingship and Tyranny

In the play, Duncan is always referred to as a "king," while Macbeth soon becomes known as the "tyrant." The model king, then, offers the kingdom an embodiment of order and justice, but also comfort and affection. Under him, subjects are rewarded according to their merits, as when Duncan makes Macbeth thane of Cawdor after Macbeth's victory over the invaders. Most important, the king must be loyal to Scotland above his own interests. Macbeth, by contrast, brings only chaos to Scotland—symbolized in the bad weather and bizarre supernatural events—and offers no real justice, only a habit of capriciously murdering those he sees as a threat. As the embodiment of tyranny, he must be overcome by Malcolm so that Scotland can have a true king once more.

The Corrupting Power of Unchecked Ambition

The main theme of Macbeth—the destruction wrought when ambition goes unchecked by moral constraints—finds its most powerful expression in the play's two main characters. Macbeth is a courageous Scottish general who is not naturally inclined to commit evil deeds, yet he deeply desires power and advancement. He kills Duncan against his better judgment and afterward stews in guilt and paranoia. Toward the end of the play he descends into a kind of frantic, boastful madness. Lady Macbeth, on the other hand, pursues her goals with greater determination, yet she is less capable of withstanding the repercussions of her immoral acts.

Guilt

Macbeth's guilt about murdering his king, Duncan, and ordering the murder of his friend, Banquo, causes him to have guilty hallucinations. Lady Macbeth also hallucinates and eventually goes insane from guilt over her role in Duncan's death. The fact that both characters suffer torment as a result of their actions suggests neither Macbeth nor his wife is entirely cold-blooded. Although they commit terrible crimes, they know, on some level, that what they've done is wrong. Their guilt prevents them from fully enjoying the power they craved. Lady Macbeth says "What's done/ cannot be undone" in Act Five scene one, but her guilt continues to torment her. While Macbeth's guilt causes him to commit further murders in an attempt to cover up his initial crimes, Lady Macbeth's guilt drives her to insanity, and, finally, suicide.

Ozymandias "Two vast and trunkless legs of stone stand in the desert" "Wrinkled lip, and sneer of cold command" "Stamped on these lifeless things" "The hand that mocked them and the heart that fed" "Look on my works, ye Mighty, and despair!" "Nothing beside remains. Round the decay"	**London** "Marks of weakness, marks of woe" "In every cry of every man, in every infant's cry of fear" "The mind-forged manacles I hear" "Runs in blood down palace walls" "Blights with plague the marriage hearse"	**The Prelude** "One summer evening (led by her) I found a little boat tied to a willow tree" "Small circles glittering idly in the moon, until they melted all into one track of sparkling light" "Growing still in stature the grim shape towered up between me and the stars" "O'er my thoughts there hung a darkness, call it solitude or blank desertion"	**My Last Duchess** "That's my last duchess painted on the wall, looking as if she were alive" "'Twas not her husband's presence only, called that spot of joy into the duchess' cheek" "As if she ranked my gift of a nine hundred-years-old name with anybody's gift" "I gave commands; then all smiles stopped together" "Notice Neptune, though, taming a sea-horse"	**The Charge of the Light Brigade** "Cannon to the right of them, cannon to the left of them, cannon in front of them" "Into the jaws of death, into the mouth of Hell" "Theirs not to make reply, theirs not to reason why, theirs but to do and die" "Honour the Light Brigade, noble six hundred!"
Exposure "Our brains ache, in the merciless iced east winds that knive us" "Dawn massing in the east her melancholy army attacks once more in ranks upon shivering ranks of grey" "Sudden successive flights of bullets streak the silence" "All their eyes are ice, but nothing happens"	**Storm on the Island** "We are prepared" "Nor are there trees which might prove company when it blows full blast" "Exploding comfortably down on the cliffs ... spits like a tamed cat turned savage" "It is a huge nothing that we fear"	**Bayonet Charge** "Suddenly, he awoke, and was running – raw" "In what cold clockwork of the stars and nations was he the hand pointing that second?" "Threw up a yellow hare ... its mouth wide open silent, its eyes standing out" "King, honour, human dignity etcetera, dropped like luxuries in a yelling alarm"	**Remains** "Probably armed, possibly not" "I see every round as it rips through his life, I see broad daylight on the other side" "and the drink and the drugs won't flush him out – he's here in my head when I close my eyes" "His bloody life in my bloody hands"	**Poppies** "Crimped petals, spasms of paper red" "the world overflowing like a treasure chest" "After you'd gone I went into your bedroom, released a song bird from its cage" "The dove pulled freely against the sky" "I listened, hoping to hear your playground voice catching on the wind"
War Photographer "In his dark room he is finally alone with spools of suffering set out in ordered rows" "Running children in a nightmare heat" "a hundred agonies in black and white" "he earns his living and they do not care"	**Tissue** "Paper that lets the light shine through" "pages smoothed and stroked and turned transparent with attention" "Never wish to build again with brick or block, but let the daylight break through" "turned into your skin"	**The Emigree** "It may be at war, it may be sick with tyrants" "I am branded by an impression of sunlight" "My city comes to me ... I comb its hair and love its shining eyes" "They accuse me of being dark in their free city"	**Checking Out Me History** "Dem tell me/ Dem tell me/ wha dem want to tell me" "Blind me to me own identity" "Toussaint de thorn to de French, Toussaint de beacon" "But now I checking out me own history, I carving out me identity"	**Kamikaze** "A shaven head full of incantations and enough fuel for a one-way journey into history" "like a huge flag waved first one way then the other in a figure of eight, the dark shoals of fishes flashing silver" "my mother never spoke again in his presence, nor did she meet his eyes and the neighbours too" "he must have wondered which had been the better way to die"

A Christmas Carol KNOWLEDGE ORGANISER

Context – *A Christmas Carol* was written by Charles Dickens in 1843

Charles Dickens – Charles Dickens was born in 1812 and spent the first years of his life in Kent, England. At 9, he moved to London. At 12, his father was sent to debtors' prison for racking up huge debts, and Charles was given a painful job labelling bottles near the prison. He found this period in his life hellish, and it doubtlessly led him to draw readers' attention to the plight of the poor when he later found success as an author. Many of his works are about social hardships and inequalities.



Class Divides – Despite industrial changes altering the social landscape, there were still relatively distinct social classes in operation: the nobility upper class, the middle class, and the working class. Life was terrible for the poorest: Lack of money resulted in a negligible food supply. For some working families, money was so tight that they required their children to work in order to survive.



The Victorian Era– The Victorian era describes the period in which Queen Victoria sat on the English throne – between 1837 and 1901 (most of Dickens' life). Whilst this was a time of industrial revolution, it was also an extremely harsh time to live, and the differences between the lives of the richest and the poorest were exacerbated. The Victorian era was a period of great change. In this time, the population of England doubled – from 16.8 million 1851 to over 30 million in 1901.



Health and Medicine –Healthcare was more of a luxury at the time, and medicine was nowhere near as advanced today. Many diseases were rife, and childbirth and poverty were very real dangers to people living in the era. As a result, a middle class person may expect to live to 45 at the time, whereas a working class person would have been lucky to have lived half that time. In *A Christmas Carol*, the restrictions in healthcare are evident in Tiny Tim's continued suffering.



Workhouses– A workhouse was a place where a person went if they could not afford to financially support themselves and their families. Men, women and children (mostly orphans) lived and worked in the workhouses, which were very crowded – making living conditions unhealthy and unpleasant. People slept in dormitories, where disease was easily spread. In *A Christmas Carol*, Scrooge voices his support for workhouses.



Christmas– We now associate Christmas as being a time of seasonal goodwill, love and friendship. However, before the Victorian era, when writers such as Dickens spread these messages through their novels, there was no Santa Claus, Christmas cards, and no holidays from work! Christmas Day was a far more low-key affair. Writers such as Dickens encouraged middle-class families to share their wealth and act selflessly.



Main Characters – Consider what Dickens intended through his characterisation of each of the below...

Ebenezer Scrooge – Scrooge is the lead protagonist of the novella. He is a miserly owner of a counting house (what would now be called an accountant's office). Initially greedy, selfish and cold, Scrooge hates Christmas and lacks any form of Christmas spirit. He experiences a moral and psychological transformation through his visits from the Ghosts of Christmases Past, Present and Yet to Come.

Quote: "It's enough for a man to understand his own business"

The Cratchits– Bob Cratchit is Scrooge's kind, mild-mannered clerk, who is treated terribly by his employer. He is a very poor man, with a large family, including Tiny Tim. Tiny Tim is a young boy who has been born with physical disabilities that his family are too poor to have treated. Despite these hardships, the family are cheery and determined to enjoy the few positives that they can get from life.

Quote: "I am sure we shall none of us forget poor Tiny Tim"

Jacob Marley and Fred– Joseph Marley is Scrooge's late business partner, and Fred is Scrooge's nephew. They represent the two extremes of Christmas spirit. Joseph Marley symbolises the limitations of a life-lived focused on greed and selfishness, whilst Fred's life appears fulfilled through his perpetual joy, kindness and interactions with others. After his death, Joseph Marley has been condemned to wander the world as a miserable ghost.

Quote: "you have yet a chance and hope of escaping my fate."

The Ghost of Christmas Past – This is the first spirit to visit Scrooge. He is a curious child-like figure that has an illuminated head, symbolising how shining a light on memories from the past can be used to illuminate one's thoughts and behaviours in the future. The Ghost of Christmas Past takes Scrooge to a number of places from his childhood and early adulthood, including his old school, hometown, and the scene of his engagement being broken off.

Quote: "Strange to have forgotten it for so many years!"

The Ghost of Christmas Present – The Ghost of Christmas Present is the second of the three ghosts to visit Scrooge. He is a majestic jolly giant, who is dressed in a green robe. His lifespan is restricted to Christmas Day, and he has 'over 1800 brothers', representative of the other Christmas Days that were once in the present. He escorts Scrooge on a tour of how his contemporaries spend Christmas day, to force him to contemplate his own solitary existence. He also shows him the need to consider 'Want' and 'Ignorance.'

Old Major Quote: "'Come in! and know me better, man!"

The Ghost of Christmas Yet to Come – The Ghost of Christmas Yet to Come is the third and final spirit to visit Scrooge. He is a silent phantom that is clad in robes (he rather resembles common characterisations of 'Death'). He presents Scrooge with an ominous view of his own death: the only people who his death remotely affects are those he owes money to (who are relieved), those who can make money from him (such as those dealing with his estate) and those who he could have saved (Tiny Tim).

Quote: "The Spirit answered not, but pointed onward with its hand."

Themes – A theme is an idea or message that runs throughout a text.

Greed and Selfishness – Characters such as Scrooge represent the selfish middle classes, who sought to amass, rather than share their wealth. Jacob Marley demonstrates the burden that such a selfish life will inevitably bring. Through these characters and the events of the novel, Dickens criticises how wealth had become associated with the root of happiness, at the expense of close relationships and goodwill.

Divisions– Divisions are evident throughout the novel, as those with power and money seek simply to exert and recycle their advantages over those without (rather than aiding them). The book shines a light on the plight faced by poor families such as the Cratchits, which demonises the negative attitudes towards the poor held by the rich.



Transformation – Physical transformations are evident throughout *A Christmas Carol*, as objects, settings, and characters appear and vanish under the manipulation of the ghosts. Spiritual transformations take place too, as the reader witnesses a lonely boy's transformation into an embittered old man, and the efforts made to transform his character to reconnect with those around him.

Time – Time is stretched by the ghosts – the events that Scrooge experiences appear to have taken days, and yet all takes place in the space of one night. A race against time is also taking place, as the spirits work to prevent Scrooge (and in turn, Tiny Tim) from experiencing their fateful demise. The reader is taught to value the time that we have, and use it to spread happiness to others.



A Christmas Carol KNOWLEDGE ORGANISER

Scene-by-Scene Summary – Alongside key quotations from each scene.		
STAVE ONE	It is a foggy Christmas Eve, and Scrooge is working in his counting house. He refuses to buy another lump of coal to heat Bob Cratchit's (his clerk's) office. Scrooge's cheerful nephew, Fred, enters, inviting Scrooge to Christmas party, but he declines. After he leaves, two gentlemen enter, asking if Scrooge is willing to make a charitable donation to the poor. Scrooge again declines. He begrudgingly gives Bob Cratchit the day off. Scrooge follows his usual routine on the way home. At home, he sees the ghost of his old business partner (Jacob Marley) in the knocker. Marley is in chains as punishment for his selfishness and greed when living. He says that he seeks to save Scrooge from the same fate, and hence Scrooge will be visited by 3 ghosts over the next 3 nights.	*"Marley was dead: to begin with. There is no doubt whatever about that. The register of his burial was signed by the clergyman, the clerk, the undertaker, and the chief mourner. Scrooge signed it."* 
STAVE TWO	Scrooge is confused to wake at midnight, as it was after 2am when he went to sleep. At one o clock, Scrooge is visited by a strange child-like figure that emanates wisdom – The Ghost of Christmas Past. The spirit touches Scrooges heart, granting the power to fly. The ghost takes Scrooge back to where he was raised – Scrooge is touched by memories of his childhood. He sees himself as a schoolboy spending Christmas alone, being visited by his sister, being at a party held by Scrooge's old boss Fezziwig, and with his old partner Belle, who is breaking off their engagement on account of his greed. He sees Belle in a more modern time, with her husband, discussing how Scrooge is now 'quite alone in the world.' Scrooge is upset by the visions, and begs with the ghost to take him back home. Scrooge finds himself back in his bedroom, where he once again falls asleep almost instantly.	*"But the strangest thing about it was, that from the crown of its head there sprung a bright clear jet of light, by which all this was visible; and which was doubtless the occasion of its using, in its duller moments, a great extinguisher for a cap, which it now held under its arm."* 
STAVE THREE	The bell strikes one, and Scrooge is awake once more. At fifteen minutes past one, he wanders into the next room, where he finds the Ghost of Christmas Present waiting for him. He is a majestic jolly giant, and sits atop of a mountain of food. The spirit takes Scrooge to the bustling streets on Christmas morning, where passers-by joyfully greet each other. The spirit then takes Scrooge to the home of Bob Cratchit, where the family savour the Christmas that they can afford. Their visibly-ill son, Tiny Tim, is cheering despite his ailments. Scrooge begs to know whether he will survive. They also visit Fred's Christmas party, which Scrooge enjoys (though no one can see him). Eventually, Scrooge is brought to a vast expanse, where two sickly children, 'Want' and 'Ignorance' emerge. When Scrooge asks if there is anything that can be done, the spirit mocks his prior selfishness.	*"Its dark brown curls were long and free; free as its genial face, its sparkling eye, its open hand, its cheery voice, its unconstrained demeanour, and its joyful air."* 
STAVE FOUR	Scrooge is approached by a hooded phantom. The spirit is silent, and Scrooge is terrified by him. Scrooge pleads with him to provide his next lesson. The ghost takes him to the stock exchange, where men discuss the accounts of a rich man, a dingy pawn shop, where the rich man's stolen goods are being sold, and the Cratchit household, where the family struggles with the death of Tiny Tim. Scrooge is then taken to a freshly dug grave in a graveyard. The gravestone reveals that it is his own grave. Appalled, Scrooge begs with the spirit to give him another chance to show that he has learnt his lesson. The phantom begins to tremble and disappear, and once again Scrooge finds himself in the relative safety of his own bed.	*I fear you more than any spectre I have seen. But as I know your purpose is to do me good, and as I hope to live to be another man from what I was, I am prepared to bear you company, and do it with a thankful heart"* 
STAVE FIVE	Scrooge realises that he has been returned to Christmas morning, and is utterly overjoyed. He pays the first boy that he meets a huge sum to deliver a great big turkey to Bob Cratchit's household. He bumps into the gentlemen collecting for charity, apologises for his prior behaviour, and promises to donate lots of money to the poor. He attends Fred's party and is so happy and kind that the other guests can barely believe his behaviour. The next morning, he pretends to scold Bob Cratchit for arriving late, before promising to give him a large raise and to care for his family. As time passes by, he stays true to his word – he helps the Cratchits and becomes like a second father to Tiny Tim, who does not die. Scrooge brings Christmas cheer to every day, and shrugs off the doubts that others have about his changed behaviour. The narrator concludes by suggesting that Scrooge's changed attitude and behaviour should be shared by everyone.	*"He had no further intercourse with Spirits, but lived upon the Total Abstinence Principle, ever afterwards; and it was always said of him, that he knew how to keep Christmas well, if any man alive possessed the knowledge....God bless us all, every one!"* 

Dickens' Literary Devices		Structural Features
Simile	This gives the reader a better image of characters and places, e. g Scrooge described as 'hard and sharp as a flint.'	**Five Staves** – The story is set out in five Staves – a structure that mimics musical organization – the opening sets the scene, the middle is the turning point, and the last stave concludes. 
Clear Narrative Viewpoint	The narrator gives views to tell the reader how to think – e.g. Scrooge was a 'tight-fisted hand at the grindstone.'	**Surface Level Story** – A literal story that works on a surface level, e.g. The story of one cruel and harsh man being visited by ghosts who teach him a lesson, making him kind and compassionate.
Metaphor	Used to represent deeper meanings and ideas. For example, the children 'Want' and 'Ignorance' represent the poor in society.	**Symbolic Level Story** – A deeper, more hidden meaning to the story, e.g. There exists a selfish society, who needs to heed this warning, in order to become more caring. 
Personification	To emphasise the atmosphere of places and settings: e.g. 'the crisp air laughed to hear it.'	**The Number 3** – Scrooge is visited by 3 ghosts: Past, Present, and Yet to Come. This is a common feature in magical fairy stories: e.g. 3 wishes, 3 choices etc. This adds to the mystical feel of the novella.

Year 11 Biology paper 2

Homeostasis

Maintaining constant internal conditions for optimum enzyme action

- Temperature
- Water
- pH
- Glucose concentration

This is achieved through the **nervous and endocrine (hormonal) systems**

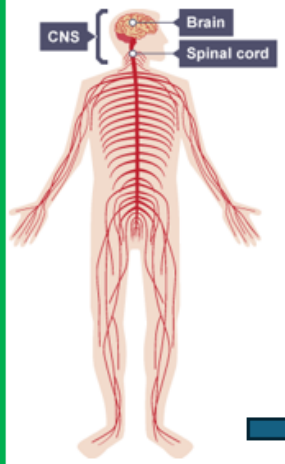
All control systems include

Receptors – detect internal or external stimuli (change in the environment)

Coordination center – brain , spinal cord ort pancreas which receive and process information from around the body

Effectors – Muscles or glands which bring about responses

Nervous system



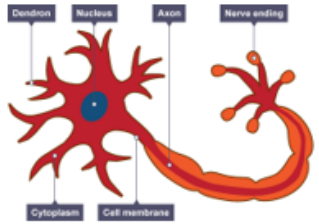
Nerve cells – neurones : carry electrical impulses

Receptor to CNS – **sensory neurone**

Within the CNS – **relay neurones**

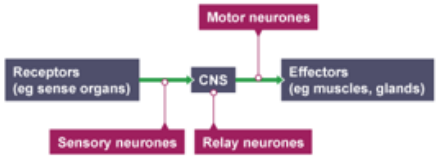
CNS to muscle - **motor neurone**

Features of all neurones
Long insulated axon
Tiny branches making connections with other neurones
The cell body contains the nucleus which contains DNA



Receptors to effectors

Stimulus – receptor – CNS- effector – response



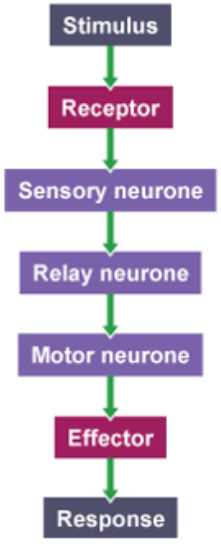
Receptors

Sense organ	Stimulus
Skin	Touch, temperature and pain
Tongue	Chemicals (in food and drink, for example)
Nose	Chemicals (in the air, for example)
Eye	Light
Ear	Sound and position of head

Reflex – Automatic and rapid response to keep the organism, from damage top danger (done not involve conscious "thinking" parts of the brain)

Examples : moving a hand away from a hot object , pancreas producing insulin adrenals producing naline

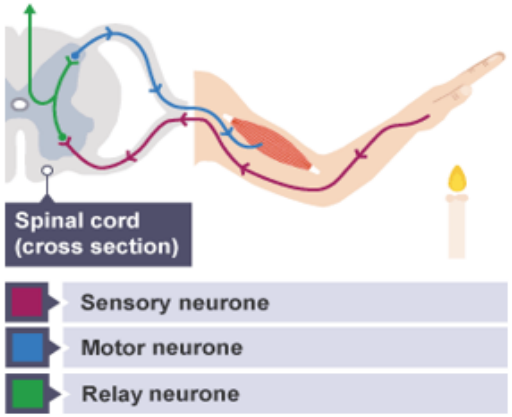
A reflex action



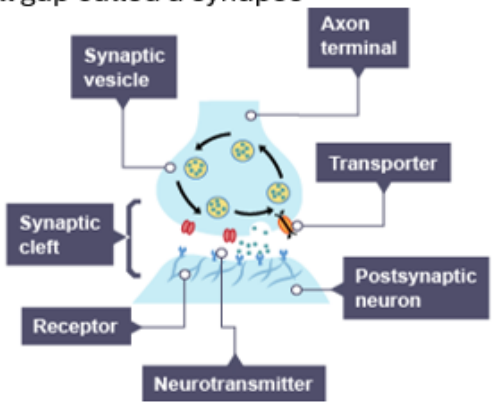
The reflex arc

1. **Receptor in the skin detects a stimulus (the change in temperature).**
2. **Sensory neurone sends electrical impulses to relay neurone, which are located in the spinal cord. They connect sensory neurones to motor neurones.**
3. **Motor neurone sends electrical impulses to an effector.**
4. **Effector produces a response (muscle contracts to move hand away).**

The reflex arc



Synapse: Where 2 neurones meet there is a small gap called a synapse



1. Impulse reases the axon termninal
2. Vesiciles containg neurotransmitter are produced
3. Neurotransmitter is released across the synapse
4. Neurotransmistter diffuses across the synpase
5. Neurotransmistter is detected by the next neurone
6. The neurone produces an electrical impulse

Required practical: The ruler drop test : Investigating human reaction times

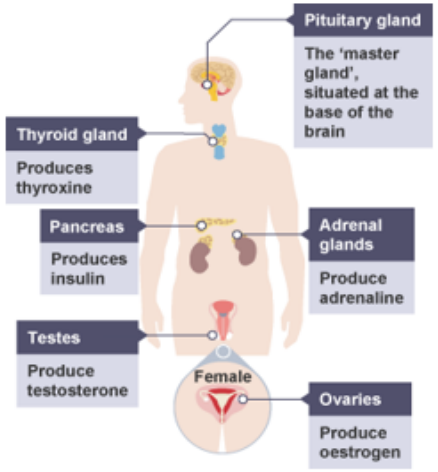
1. Work with a partner.
2. Person A holds out their hand with a gap between their thumb and first finger.
3. Person B holds the ruler with the zero at the top of person A's thumb
4. Person B drops the ruler without telling Person A and they must catch it.
5. The number level with the top of person A's thumb is recorded in a suitable table. Repeat this ten times.
6. Swap places, and record another ten attempts.
7. You can use the conversion table to help convert your ruler measurements into reaction time or just record the catch distance in cm.



Hormonal control (The endocrine system) vs Nervous control

	Nervous system	Endocrine system
Type of signal	Electrical (chemical at synapses)	Chemical
Transmission of signal	By nerve cells (neurones)	By the bloodstream
Effectors	Muscles or glands	Target cells in particular tissues
Type of response	Muscle contraction or secretion	Chemical change
Speed of response	Very rapid	Slower
Duration of response	Short (until nerve impulses stop)	Long (until hormone is broken dow

The endocrine system



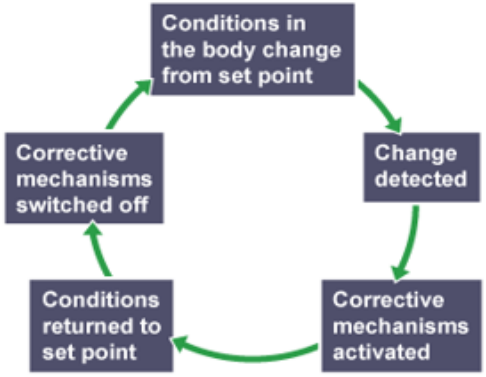
Hormones – chemical messengers, made by glands, carried by the blood to target organs

Gland	Produces	Effect
Pituitary	FSH , LH	Control of menstrual cycle in females
Thyroid	Throxine	Controls metabolic rate
Pancreas	Insulin and glucagon	Insluin - lowers blood glucose (storing as glycogen) Glucagon – releases glucose from glycogen
Adrenal	Adrenaline	Fight or flight reponse
Testes	Testosterone	Secondary male sexual characteristics
Ovaries	Oestrogen	Secondary female sexual characteristics

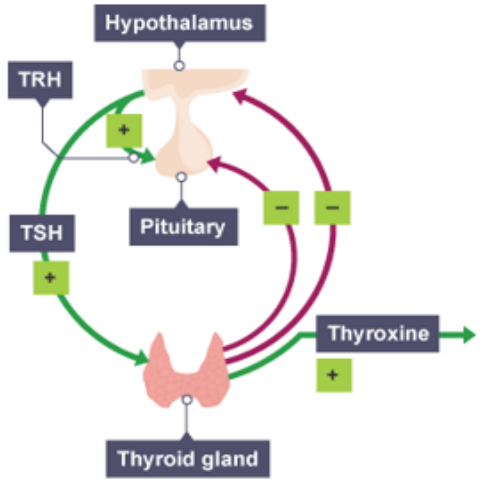
Target organs : have specific shaped receptors for the hormone . Only the target oprgan has these receptors so the hormone only binds with the target organ resulting in a response

HT only – Negative feedback

A mechanism to lower raised levels of something, and to raise reduced levels of something.



HT: Throid and negative feedback



1. **Low thyroxine** levels in the bloodstream stimulate the hypothalamus to release TRH and this causes the pituitary to release TSH so the thyroid releases more thyroxine. So blood levels return to normal.
2. **Normal thyroxine** levels in the bloodstream inhibit TRH release from the hypothalamus and this inhibits the release of TSH from the pituitary, so normal blood levels are maintained.

Adrenaline :
Produced by the adrenal glands
Prouced during times of stress or fear
Targets vital organs boosting heart rate and breathing rate to gain more oxygen

When adrenaline is released into the bloodstream it creates multiple effects:

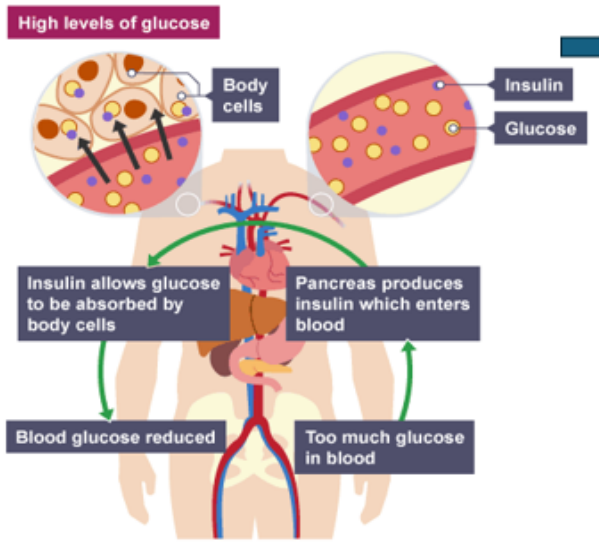
- increases breathing rate, heart rate, and conversion of glycogen to glucose so more energy is released in the muscles
- it diverts blood away from areas, such as the digestive system, towards the muscles

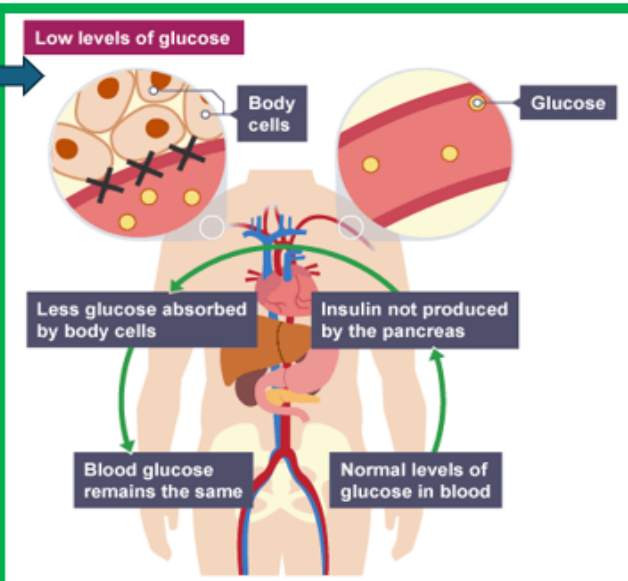
Control of glucose

	Low glucose	High glucose
Effect on pancreas	Insulin not secreted into blood	Insulin secreted into blood
Effect on liver	Glucose not stored as glycogen	Glucose stored as glycogen
Effect on blood glucose	Increases	Decreases

Glucagon

Low blood glucose – glucagon is propduced – glycogen broken down into glucose





Diabetes:

Type I : Pancreas does not produce insulin **, treated with insulin injections**

Type II: The body does not respond to insulin **, controlled by diet and exercise**

Obesity and type II diabetes: 80% of type II diabetes is thought to be as a result of obesity

Obesity is a **risk factor** for developing type II diabetes

Hormones and puberty

Boys only	Boys & girls	Girls only
Voice breaks	Pubic hair grows	Voice deepens gradually
Hair grows on face and body	Underarm hair grows	Hips get wider
Body becomes more muscular	Sexual organs grow and develop	Breasts develop
Testes start to produce sperm cells		Ovaries start to release egg cells - menstruation starts

The menstrual cycle – hormones

Hormone	Produced	Role
FSH (follicle stimulating hormone)	Pituitary gland	Causes an egg to mature in an ovary. Stimulates the ovaries to release oestrogen
Oestrogen	Ovaries	Stops FSH being produced (so that only one egg matures in a cycle). Repairs, thickens and maintains the uterus lining. Stimulates the pituitary gland to release LH.
LH (luteinising hormone)	Pituitary gland	Triggers ovulation (the release of a mature egg)
Progesterone	Ovaries	Maintains the lining of the uterus during the middle part of the menstrual cycle and during pregnancy.

The menstrual cycle

Day 1 : First day of menstrual period

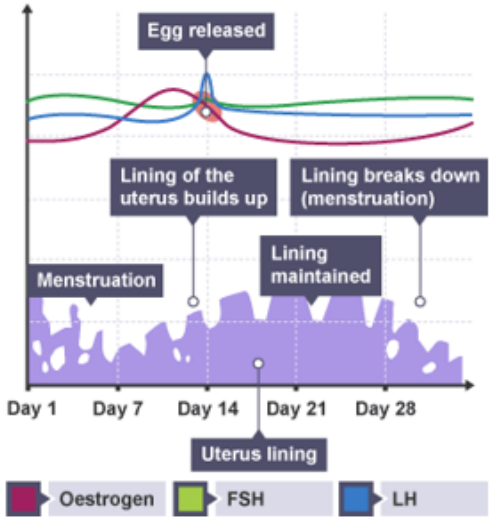
Day 5 – 14: Lining of uterus thickens (FSH stimluates an egg to ripen)

Day 14: Ovulation: An egg is released by an ovary (LH)

Day 14-28 : Lining thickens, egg travels to the uterus (oestrogen thickens lining , progesterone is produced by the egg)

If the egg is not feertilised it dies and the production of progesterone ceases. The lining of the uterus sheds and the next menstrual period begins

The menstrual cycle



Non Hormonal contraception



Benefits and risks

- Condoms are easy and quick to use, but sometimes they can tear or rip.
- Diaphragms need to be put in just before sex and left in several hours afterwards.
- IUDs need to be fitted by a health professional. IUD can remain in position for up to 10 years. However, there is a small risk of causing an ectopic pregnancy.
- Spermicidal agents can be added to other physical barriers such as condoms, but some people can have allergic reactions to these.
- Abstaining can be used successfully, but if the timings are not accurate the chance of pregnancy is high.
- Surgical methods cannot be reversed, and is considered permanent

Hormonal methods of contraception

Pill, patch , implant and injection

The oral contraceptive, which is known as the pill, contains *oestrogen* or *progesterone*. These hormones inhibit the production of *FSH*, and eggs cannot mature.

Benefits and risks

Oral contraceptives are more than 99% effective if taken correctly and can reduce the risk of certain cancers.

However, there are possible side effects, such as changes in weight, mood and blood pressure due to high levels of oestrogen. Modern pills contain much less oestrogen.

Contraceptive injections, implants or skin patches contain slow release progesterone to inhibit the maturation and release of eggs.

Non hormonal contraception

Physical barrier methods such as condoms and diaphragms, which prevent the sperm reaching an egg

Intrauterine devices (IUD) also known as a coil, prevent the implantation of an embryo or release of a hormone

Spermicidal agents which kill or disable sperm

Abstaining from intercourse when an egg may be in the oviduct

Surgical methods of male and female sterilisation.

Barrier methods: Prevent the transmission of STIs such as HIV , gonohorrea and chalymidia

Fertilility treatments

1.FSH / LH given top the woman to sitmulate many eggs to ripen in the ovaries

2. Eggs harvested from the ovaries

3. Fetilised in a dish using sperm from the father / donor in the laboratory

4. The fertilised eggs develop into embryos.

5.At the stage when they are tiny balls of cells one or two embryos are inserted into the mother's uterus (womb)

IVF success – Low rates of live births

- 32.2% for women under 35
- 27.7% for women aged 35-37
- 20.8% for women aged 38-39
- 13.6% for women aged 40-42
- 5% for women aged 43-44
- 1.9% for women aged over

Advantages of IVF

- It allows people to have babies of their own, who otherwise can't due to a variety of reasons.
- It has a safe track record and has been used since 1978. The embryos can be screened for genetic diseases, which is important for families that already have an affected child. Only unaffected embryos are used.
- Unused eggs can be used for research or donated to other couples.

Disadvantages of IVF

- There are side effects form the drugs used, such as hot flushes and severe headaches.
- There is a possibility of multiple births, which is dangerous for mother and babies.
- Ovarian hyper-stimulation syndrome (OHS), when too many eggs develop in the ovaries.
- It is very emotionally and physically stressful.
- The success rates are not high.

Ethical concerns

Some people worry about the ethical implications of IVF. They are concerned that couples may want 'designer babies' with 'desirable' qualities, so may only want certain fertilised eggs. For example, they may want a girl if they have lots of boys in the family.

Also, the embryos that are not used may be destroyed. Some people consider embryos to be new lives and view their destruction as unethical.

Asexual reproduction

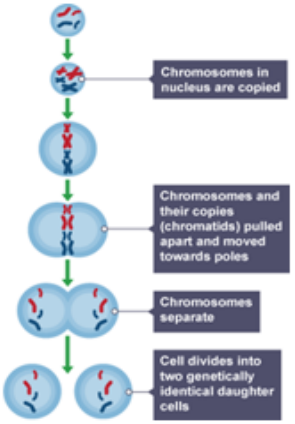
1 parent , no gametes , gentically identical clones to the parent are produced

Bacteria , fungi spores, strawberries , potatoes and daffodils

Sexual reproduction : 2 parents , gametes produced by meiosis fuse to produce a zygote which is genetically unique

Sexual reproduction introduces **variation** . variation may lead to **advantage** which drives the process of **natural selection**

Uses the process of mitosis



2 identical haploid cells are produced

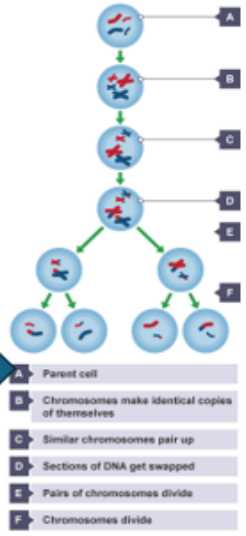
Mitosis

Mitosis is part of the cell cycle, which involves: cell growth, and the increase of the number of structures in the cell (mitochondria, ribosomes) genetic material is copied mitosis occurs leading to *chromosomes* separation and cell division

Mitosis is also used for:

- growth
- repair to damaged tissue
- replacement of worn-out cells

Meiosis



Comparing sexual and asexual reproduction

Type of Reproduction	Benefits to the species
Asexual Reproduction	◦ Allows species to grow numbers rapidly ◦ Little or no parental care ◦ All successful genes will be passed on to all offspring ◦ As there is no mate required it allows individuals that live in isolation to reproduce successfully
Sexual Reproduction	◦ Increase genetic variation (differences) in a population. The offspring will be different form all other members of the species ◦ Each offspring has a unique combination of genes, half passed on from its mother and half passed on from its father ◦ Increased variation ensures survival of the species as individuals may have genes that give them better characteristics e.g. disease resistance. This means they are more likely to survive and thrive in a changing environment

Genes and DNA

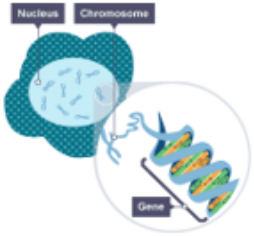
DNA is stored in chromsomes in the nucleus

DNA is a **polymer** forming a **double helix**

Gene: A section of DNA which codes for a characteristic

Genome: the entire genetic material of an organism

DNA is also called the genetic chemical , genetic molecule, Genetic information



The human genome

In 2003 the entire human genome was mapped

This was completed as part of a multinational project called " The human genome project"

There are around 20 000 genes which only makeup around 1.5% opf the entire genome

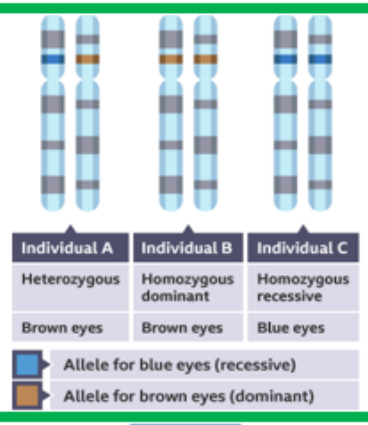
Understanding the human genome allows us to :

- search for genes linked to different types of disease
- understand inherited disorders and their treatment
- trace human migration patterns from the past

Inhertiance
Gene : A sequence of DNA which codes for a characteristic (eye colour)
Allele : An alternative form of a gene (blue/brown eyes), one inherited from each parent
Genotype : The combination of alleles which is expressed as the phenotype

Homozygous : 2 of the same alleles
Heterozygous : 1 of each allele
Dominant : 1 copy needed
Recessive : 2 copies needed
Dominant Capital letter eg B Brown eyes
Rceessive : Lower case b blue eyes

Document last modified: 30/10/2024



A genetic cross : Shows possible genotypes
A punnet squares are used to work out genotypes of the offspring
B= brown eyes b= blue eyes
Bb x Bb

	B	b
B	**BB**	Bb
b	Bb	bb

3: Brown eyes
1 Blue eyes

Sex determination : In the nuclues there are 23 pairs of chromosomes
22 pairs are autosomes , 23rd pair is the se chromosomes
Male: XY Female XX
Sperm carry 50% X and 50% Y sex chromsomes
The egg always carries an X sex chromosome

		Mother	
		X	X
Father	X	XX	XX
	Y	XY	XY

Inhertited disorders
Genetic screening can show if an embryo has an inherited disorder
Cystic fibrosis (Recessive) and polydactyly (dominant) are 2 examples

Cystic fibrosis :
A recessive disorder , needing 2 copies of the allele one from each parent .
Cell membranes produces too much sticky mucus
Effects the digestuive system, gaseous exchange system and reproductive systems
Infections of the lungs, digestive disorders and fertility issues are caused

Inhertiance of cystic fibrosis
N= Normal cell membranes n = CF cell membrane
2 hetrozygous parents would not have Cf but both carry the allele, these are carriers

	N	N
N	NN	NN
n	Nn	nn

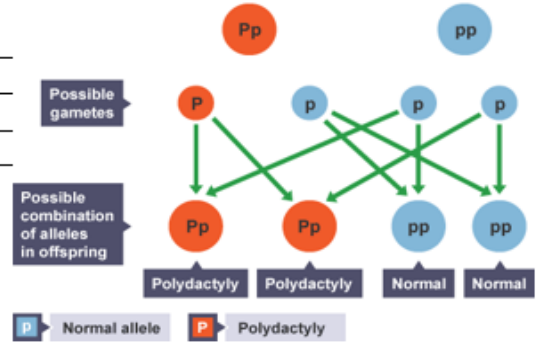
2 CF allele free
1 carrier (Nn)
1 CF (nn)

Polydactyly
A dominant disorder where there are extra digits on the hands or feet
Only 1 copy of the polydactyly allele (P) is needed for the offspring to have the disorder
Homozygous dominant PP or hetrozygous (Pp) will all have polydactyly
Hetrozygous x homozygous recessive

	P	p
p	Pp	pp
p	Pp	pp

Inhertiance of polydactyly

	P	P
P	PP	PP
p	Pp	pp



Genetic screening

- *Antenatal* testing is used to analyse an individual's DNA or chromosomes before they are born. This testing is offered to couples who may have an increased risk of producing a baby with an inherited disorder, but it can't detect all the risks of inherited disorders.
- Neonatal testing known as the new born blood spot test involves analysing a sample of blood that is taken from pricking a baby's heel. It detects genetic disorders in order to treat them early.
- *Pre-implantation genetic diagnosis* (PGD) is used on embryos before implantation. Fertility drugs stimulate the release of several eggs. The eggs are collected and fertilised in a Petri dish. This is known as in vitro fertilisation (IVF). Once the embryos have reached the eight-cell stage, one cell is removed.
- The cells are tested for the disorder-causing alleles. Embryos that don't contain the disorder allele are implanted into the uterus

Limitations of genentic screening '

False positives

A false positive is a genetic test that wrongly detected a certain allele or faulty chromosome. The individual could believe something is wrong, when it is actually fine.

False negatives

A false negative is a genetic test has failed to detect a certain allele or faulty chromosome. The parents may be wrongly reassured. These results can have a major impact on the lives of individuals, through pregnancy termination, future decisions and planning the level of care needed for children with inherited disorders.

Gene therapy :Replace faulty alleles

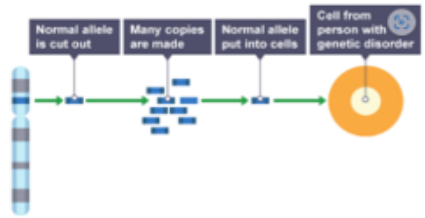
Gene therapy involves these basic steps:

1.Identify the gene involved in the genetic disorder

2.Restriction enzymes cut out the normal allele

3.Many copies of the allele are made

4.Copies of the normal working allele are put into the cells of a person who has the genetic disorder



Variation: Differences between individuals of the same species

Genetic variation : Inherit features from parents in the DNA eg hair colour, eyey clour , blood group

Environmental variation: The social and physical environment eg accent , scars

Variation is often a mixture of both genetic and environmental factors

Mutations: A random change in the sequence of DNA

Mutations may give a small advantage and result in higher breeding rates

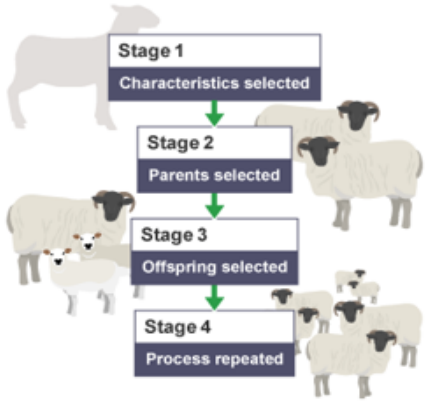
This will result in the mutation being passed on eventually to the whole population: This gives rise to natural selection

Natural selection :

1. Mutation
2. Variation
3. Advantage
4. Increased breeding success
5. Advantage spreads to the whole population over many generations

Selective breeding : All domestic plant and animals have been selectively bred from wild ancestors

Select
Breed
Repeat



Desired characteristics in plants:

- disease resistance in food crops
- wheat plants that produce lots of grain
- large or unusual flowers

Desired characteristics in animals:

- animals that produce lots of milk or meat
- chickens that lay large eggs
- domestic dogs that have a gentle nature

Benefits of selective breeding

- new economically important varieties
- animals which are safer to handle eg hornless cattle

Risks of selective breeding

- reduced genetic variation can lead to attack by specific insects or disease
- inbreeding
- rare disease genes can be selected for unknowlingly eg deafness in dalmations

Genetic engineering

Genetic engineering involves these steps:

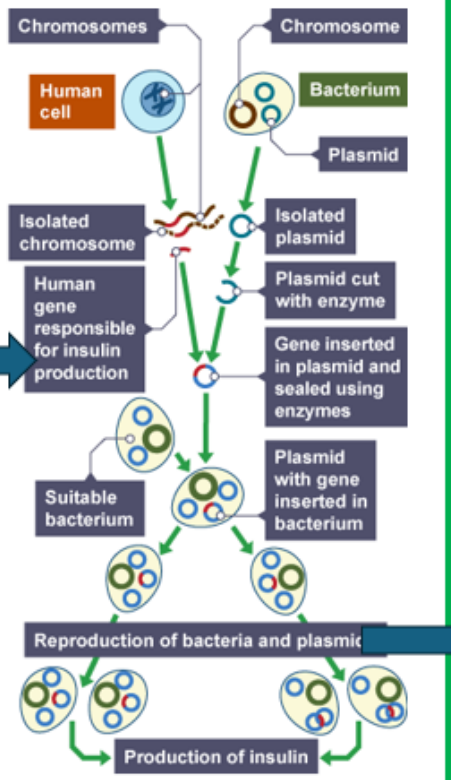
1. selection of the desired characteristic
2. the gene responsible for the characteristic is 'cut out' of the *chromosome*
3. the gene is transferred and inserted into another organism
4. replication of the modified organism.

Plant crops have been genetically engineered to be disease resistant or to produce bigger fruits.

The process of genetic engineering - Higher

The main steps of genetic engineering:

1. Enzymes are used to isolate the required *gene*, this gene is inserted into a *vector*, which is usually a bacterial *plasmid* or a virus.
2. The vector inserts the gene into required cells.
3. The genes are transferred to animal, plant or microorganism cells, during early development. This allows them to develop with the desired characteristics.



Current uses of GM:

GM crops which are heribcide and pest resistant – allows herbicide to nbe sprayed on the crop and for it to kill pest plants but not the crop

Golden rice – higher levels ofvitamin A

Insulin : human insulin produced by bacteria for diabetics

Benefits of genetic engineering

- Genetic modification is a faster and more efficient way of getting the same results as selective breeding.
- Improve crop yields or crop quality, which is important in developing countries. This may help reduce hunger around the world.
- Introduce herbicide resistance, which results in less herbicides being used, as weeds are quickly and selectively killed.
- Insect and pest resistance can be developed and inserted into the plants. The plant produces toxins, which would discourage insects from eating the crop.
- Sterile insects could be created such as a mosquito. They would breed, which would lead to infertile offspring. This may help with spread of diseases, such as malaria, dengue fever and the Zika virus

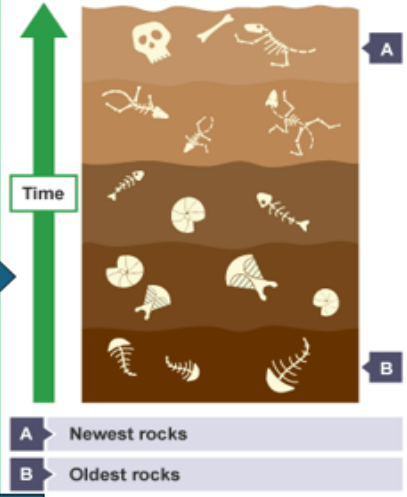
Risks of genetic engineering

- Transfer of the selected gene into other species. What benefits one plant may harm another.
- Some people believe it is not ethical to interfere with nature in this way. Also, GM crop seeds are often more expensive and so people in developing countries cannot afford them.
- GM crops could be harmful, for example toxins from the crops have been detected in some people's blood.
- GM crops could cause allergic reactions in people.
- Pollen produced by the plants could be toxic and harm insects that transfer it between plants.

Principles of evolution by natural selection

4.5 BYA – Earth forms
3.5 BYA first prokaryotes evolve
2BYA first eukaryotes evolve
1BYA first multicelluar organisms
500 MYA Fish evolve
450 MYA First land plants and fungi
390 MYA First land animals
250 MYA Mass extiction
200 MYA first mammals and birds
130 MYA first flowering plants
115 MYA first dinosaurs
65MYA KT extinction
55 MYA First modern mammals and birds
3MYA first hominids
200 000 YA Homo sapiens

Evidence for evolution : Rock Fossils



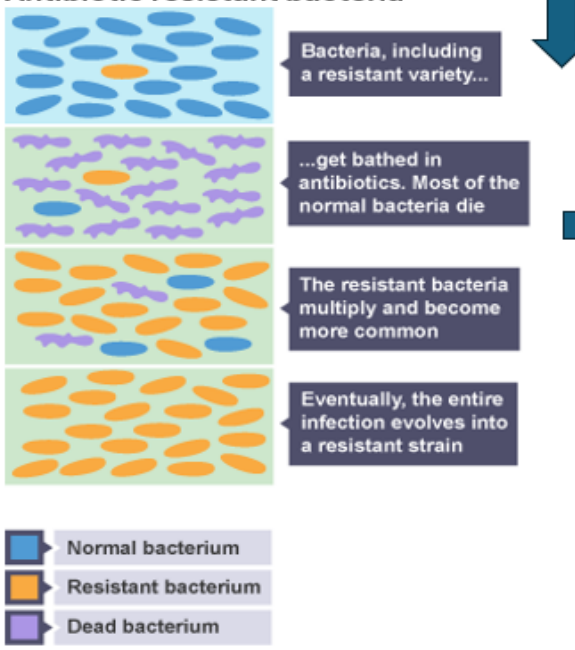
Incomplete decay fossils

- Ice -peat – amber
- The conditions for decay are not present to the organism does not decompose
- Peat bodies and bodies preserved in ice are sometimes disocvered in perfect condition

Rock fossil formation

1.Death and rapid covering by sediment
2. Sediment builds up , soft tissue decays
3. Compaction and cemtation
4. Bone turns to rock – mineralisation
5. Uplift and weathering may expose fossil

Antibiotic resistant bacteria



Extiction : No remaining individuals of the species alive

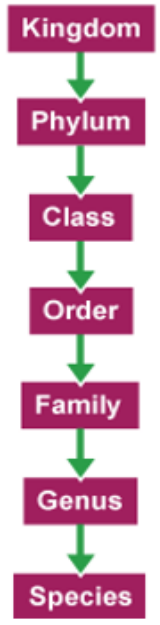
- new diseases
- new *predators*
- new, more successful competitors
- changes to the environment over geological time, such as climate change
- a single catastrophic event, such as a massive volcanic eruption or a collision between an asteroid and the Earth

A species may also become extinct through speciation

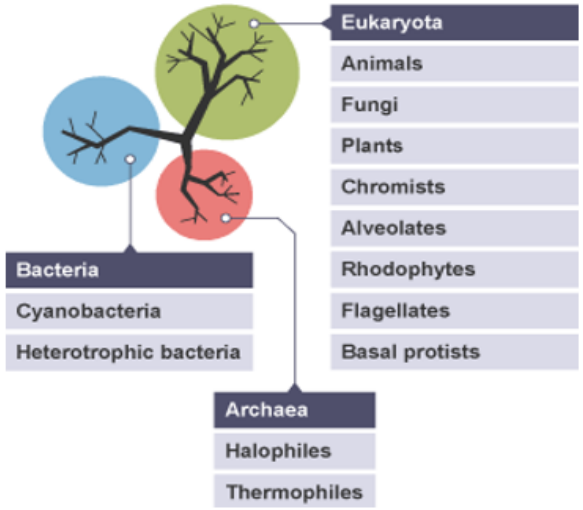
Classification : Linnaean system

Latin is used as the universal language of science
2 part latin name
Binomial system
Genus species
Homo sapiens

Linnaeus's system of classification



Modern classification : 3 domain system



Ecology

- An *ecosystem* is the interaction between a *community* of living organisms and their environment.
- A community is two or more *populations* of organisms.
- An ecosystem is two or more populations of organisms (usually many more) in their environment.
- A population is all the organisms of the same or closely-related *species* in an area

Levels of organisation

Producer – primary consumer – secondary consumer

Interdependence: Species relying on other species for survival

Competition : Between species and within species for resources (food water , light , space , minerals , territory

Stable communities: Constant populations with a high biodiversity

Ecosystems : The living organisms in a particular area, together with the non-living components of the environment.

Abiotic factors : Non living (Light intensity, water, temperature, soil , pH, soil mineral content, wind intensity and direction, carbon dioxide levels for plants, oxygen levels for aquatic animals

Biotic factors : Living factors (food, predators , disease, parasites , competition)

Competition in plants :
Light
Water
Minerals
Space
Pollinators

Competition in animals
Food
Mates
Territory

Adaptations in plants

Structual: Physcial features such as spines , shallow root systems , bright flowers

Behavioural: Shoot growth is rapid towards light and root growth rapid towards water

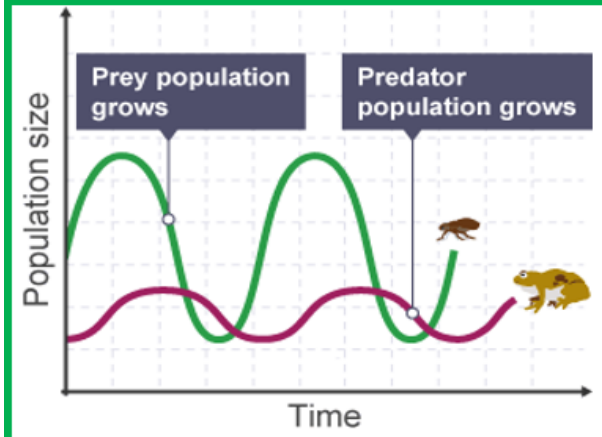
Physiological: poisons for defence such as stinging nettles

Adaptations in animals

Structual: Physcial features such as camoflauge, predator adaptations

Behvaiour : Hibernation , migration , nocturnal

Physiological: Antifreeze , enzymes adapted for low/ high temperatures such as **extremophile bacteria** in the antarctic or around volcaninc vents

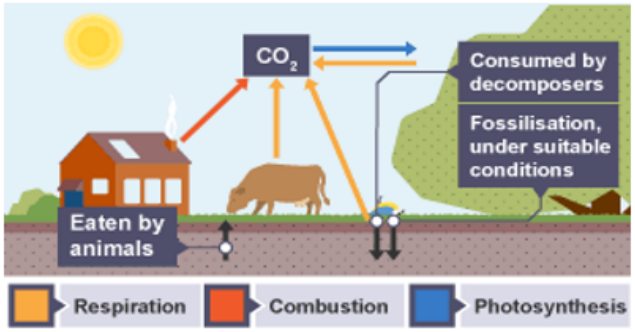


Investigating population size

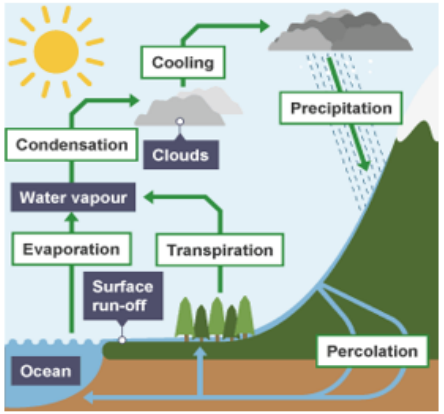
Method

1. choose a starting point on the school field in an area where the grass is often cut
2. use *random* numbers to generate a set of coordinates to place your first *quadrat*
3. count the number of different plant *species* within this quadrat (the species richness)
4. return to your starting position and repeat steps two and three a further 14 times using different random numbers
5. repeat steps one to four for a part of the school field which the grass is infrequently cut
6. compare your results by calculating a *mean* for each location

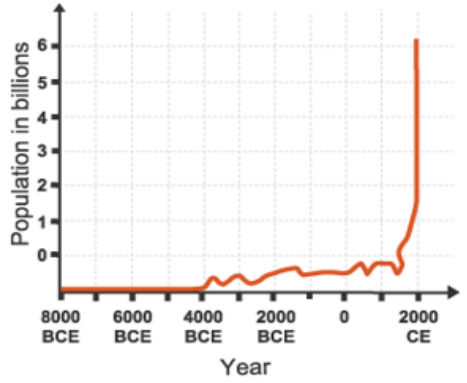
The carbon cycle



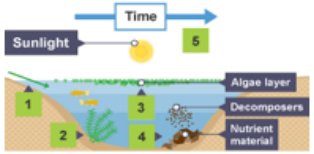
The water cycle



Human population growth



Water pollution



1. Nutrient load up: excessive nutrients from fertilisers are flushed from the land into rivers or lakes by rainwater.
2. Plants flourish: these pollutants cause aquatic plant growth of algae, duckweed and other plants.
3. Algae blooms, oxygen is depleted: algae blooms prevent sunlight reaching other plants. The plants die and oxygen in the water is depleted.
4. Decomposition further depletes oxygen: dead plants are broken down by bacteria decomposers, using up even more oxygen in the water.
5. Death of the ecosystem: oxygen levels reach a point where no life is possible. Fish and other organisms die.

Air pollution

Combustion of fossil fuels and other fuels releases carbon dioxide. This contributes to the *greenhouse effect* and leads to *global warming*. It also releases sulfur dioxide and nitrogen oxides which can cause acid rain. Air pollution can also be caused by tiny particulates from smoke which can cause *smog*.

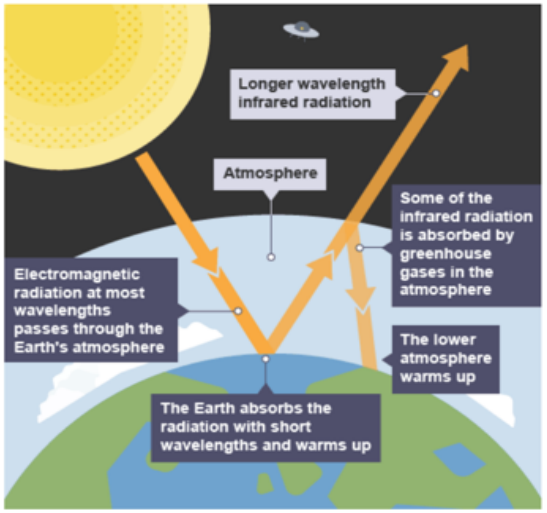
Land pollution

The rubbish we throw out that is not *recycled* goes into a land fill. These are huge holes in the ground into which our rubbish is dumped. Some things like batteries cannot be put into *landfill sites* because of the toxic chemicals they contain. They must be recycled..

Deforestation :

Land use change , infrastructure , farming , cattle ranching, land fill , mining , HEP, building
Peat bog destruction: Very wet area of land without trees and low level of nutrients
Peat taken as a fuel and compost

The greenhouse effect



Maintaining biodiversity: The increase in the human *population* and waste it produces, *deforestation*, *peat bog* destruction and *global warming* are all reducing biodiversity. *Conservation* helps reverse this. Conservation is the preservation of *ecosystems* and the organisms that live within them.

- breeding programs to help preserve *endangered species*, like the panda
- protection and development of new endangered *habitats*, often by making National Parks
- replanting hedgerows because there is higher biodiversity in them than the fields they surround
- reducing deforestation and the release of *greenhouse gases*
- *recycling* rather than dumping waste in *landfill sites*

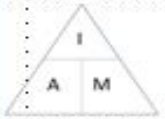
Year 11 Biology paper 1

Key words: organ system enzyme lock and key model biological catalyst denature benedicts biuret lipid emulsion starch iodine amylase bile emulsify pancreas

Light microscope



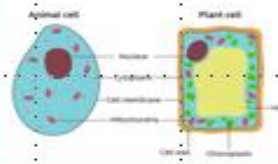
Magnification



M= A/I
I= A X M
A= I/M



Plant and animal cells



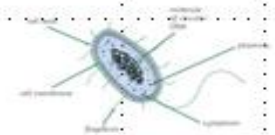
Parts of the cell

Structure	Function	Plant/animal
Cell membrane	Movement of substances in and out of cell	Both
Cytoplasm	Cell reactions	Both
Nucleus	Hold DNA	Both
Mitochondria	Site of aerobic respiration	Both
Ribosomes	Protein synthesis	Both
Cell wall	Structure and support	Plant
Permanent vacuole	Holds sap	Plant
Chloroplast	Photosynthesis	Plant

Prokaryote

Key features :

- NO NUCLEUS
- Smaller than eukaryotic cells
- Has a plasmid (ring of DNA which is used in genetic engineering)
- Divide by binary fission



Specialised cells

Specialised Cell	Function	Adaptations
sperm	To get the male DNA to the female DNA	Streamlined head, long tail, lots of mitochondria to provide energy
nerve	To send electrical impulses around the body	Long to cover more distance, has branched connections to connect to a network
muscle	To contract quickly	Long and contain lots of mitochondria for energy
root hair	To absorb water from the soil	A large surface area to absorb more water
phloem	Transports substances around the plant	Pores to allow cell sap to flow. Cells are long and joined end-to-end.
xylem	Transports water through the plant	Hollow in the centre. Tubes are joined end-to-end.

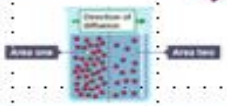
Cell division (the cell cycle) – Asexual reproduction or growth and repair

Stage 1: DNA replicates , ribosomes, and mitochondria replicate
Stage 2: Mitosis – the nucleus divides into 2
Each of the new nuclei move to opposite ends of the cell
Stage 3: Cytokinesis – the cell divides into 2
End result – 2 identical diploid cells
Different types of cells have different length . Embryonic cells have a very quick cell cycle



Cell transport: Diffusion

The movement of a substance from a high to low concentration
Carbon dioxide and Oxygen move by diffusion



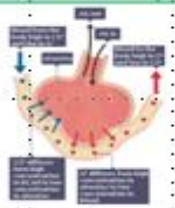
Changing the rate of diffusion:

- Increase the temperature
- Increase the surface area
- Movement
- Thin barrier
- Good blood supply

Diffusion in living organisms



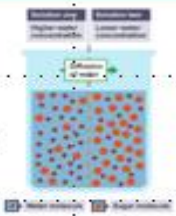
The leaf- CO_2 moves in through the stomata and into the palisade cells to use in photosynthesis



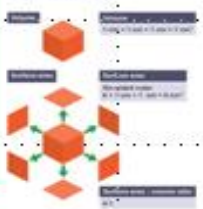
The alveoli: CO_2 diffuses out of the blood and into the alveoli and is then exhaled.
Oxygen diffuses into red blood cells from the air

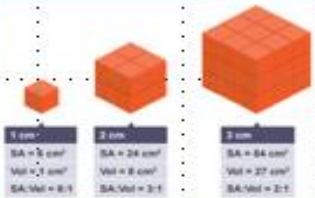
Osmosis: The movement of water from a high to low concentration through a partially permeable membrane

Strong/concentrated solution: low water and high solute concentration
Weak/dilute solution: high water concentration and low solute concentration
water moves down the concentration gradient , not the volume gradient
Plant cells : the cell wall prevents bursting
Animal cells : may burst when water moves in by osmosis



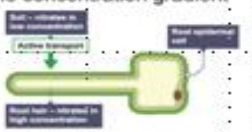
Surface area to volume ratio



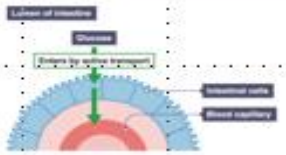


Organism	Surface area (m2)	Volume (m3)	Surface area : volume
Bacterium	5×10^{-12}	1×10^{-18}	6 000 000 : 1
Blow fly	6×10^{-4}	1×10^{-6}	600 : 1
Whale	6×10^{2}	1×10^{3}	0.06 : 1

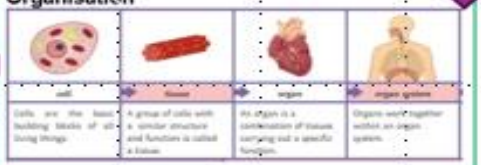
Active transport – The movement of a substance from a low to high concentration against the concentration gradient



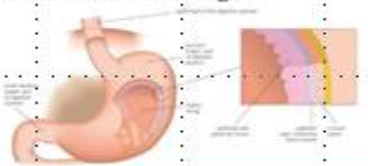
This requires energy from the cell
The energy is released from respiration
Cells will have many mitochondria



Organisation



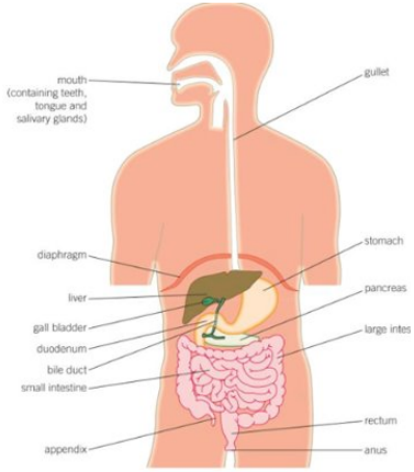
The stomach as an organ



Year 11 Biology paper 1

Key words: organ system enzyme lock and key model biological catalyst denature benedicts biuret lipid emulsion starch iodine amylase bile emulsify pancreas

The digestive system – large insoluble food molecules are broken down into small soluble molecules

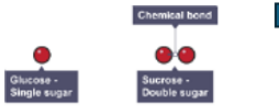


Region	Function
Mouth	Begins the **digestion** of carbohydrates
Stomach	Begins the **digestion** of protein; small molecules such as alcohol absorbed
Small intestine -Duodenum	Continues the **digestion** of carbohydrate and protein; begins the **digestion** of lipids
Small intestine -Ileum	Completes the **digestion** of carbohydrates and proteins into single sugars and amino acids; **absorption** of single sugars, amino acids and fatty acids and glycerol
Large intestine	**Absorption** of water; **egestion** of undigested food

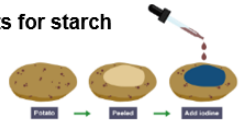
Breaking down food

Protein – amino acids – used for growth and repair – proteases
Carbohydrates – sugars – used for respiration - carbohydrases
Lipids – Glycerol and 3 fatty acids – used as energy store – lipase
Bile - emulsifies fats
Salivary amylase – in the mouth - starch to glucose
Pancreatic amylase – in the small intestine – starch to glucose

Food tests
Starch and glucose



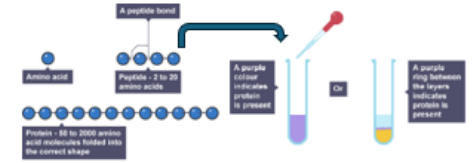
Iodine tests for starch



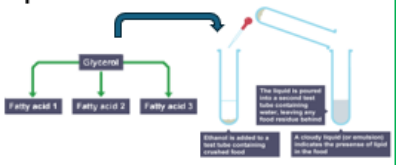
Benedicts tests for glucose



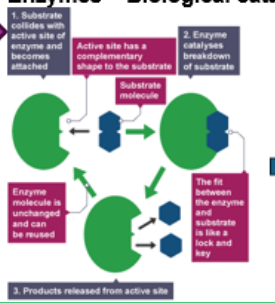
Biuret tests for proteins



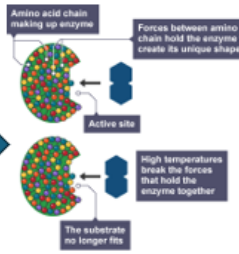
Lipid emulsion test for fats



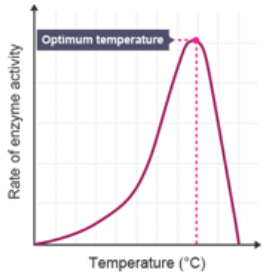
Enzymes – Biological catalysts



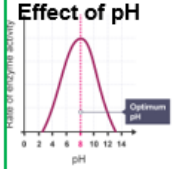
Denaturing



Effect of temperature



Effect of pH

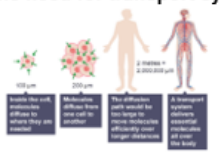


Optimum pH for the enzyme depends on where the enzyme functions in the digestive system

Enzyme	Optimum pH
Salivary amylase	6.8
Stomach protease (pepsin)	1.5 - 2.0
Pancreatic protease (trypsin)	7.5 - 8.0

Bile: Produced by the liver
-Emulsifies fat giving a larger surface area for lipase
-Alkali which neutralizes food for pancreatic enzymes to digest

The need for transport systems



Substances transport by blood
Oxygen
Carbon dioxide
Glucose
Urea
Antibodies
Hormones

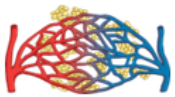
The blood vessels

Artery



Carry oxygenated blood away from the heart at high pressure
Thick muscular and elastic walls and a small lumen to withstand and maintain high pressure

Capillary



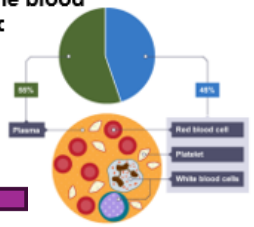
Site of exchange between the blood and tissues , walls are thin and one cell thick for fast diffusion

Vein



Bring deoxygenated blood back to the heart at low pressure , large lumen , thinner walls and valves

The blood
Cc

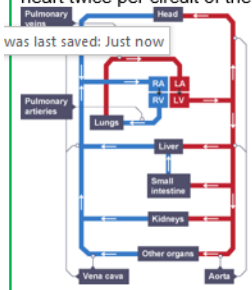


Component	Function	Feature
Red blood cell	Carry oxygen	Small , flexible, no nucleus only hemoglobin
White blood cell	Destroy bacteria make antibodies	Change shape , multi lobed nucleus
Platelet	Small cell fragments	Clotting of blood
Plasma	Carries dissolved glucose , carbon dioxide , urea , hormones, and antibodies	

Year 11 Biology paper 1

Key words: Double circulation cardiac muscle alveoli gaseous exchange transpiration

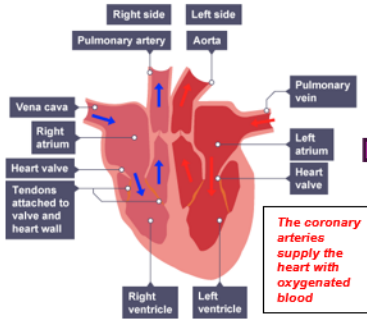
Double circulation – blood returns to the heart twice per circuit of the body



Double circulation results in oxygenated blood reaching cells at high pressure which allows rapid diffusion of oxygen to respiring cells

The heart – made from **cardiac muscle tissue**

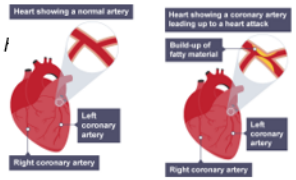
Right side of heart – deoxygenated blood pumped to the lungs
Left side of the heart – Oxygenated blood pumped to the body



The coronary arteries supply the heart with oxygenated blood

Control of the heart
-The pacemaker in the wall of the right atrium initiates the heart beat
-Betablockers – slow the heart
-Digitalis – strengthens the heart beat

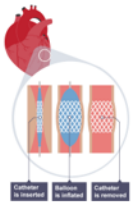
Problems with the heart
Coronary heart disease



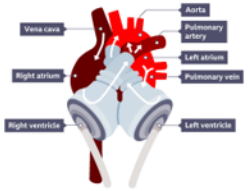
Ways to treat problems with the heart

Statins – reduce cholesterol in the blood and reduce Fatty deposits

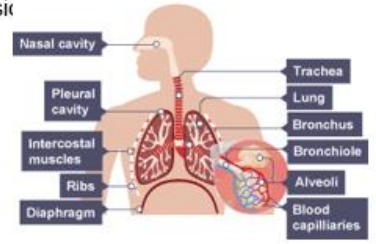
Stents



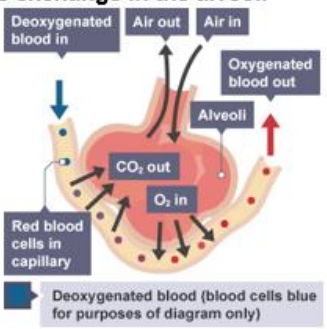
Heart transplant – *artificial*



The gaseous exchange system - exchange of oxygen into the blood by diffusion and carbon dioxide out of the blood into the alveoli by diffusi



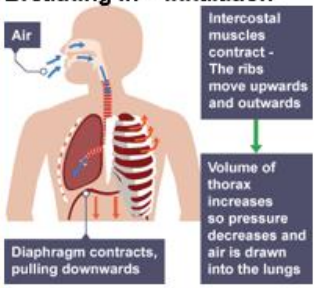
Gaseous exchange in the alveoli



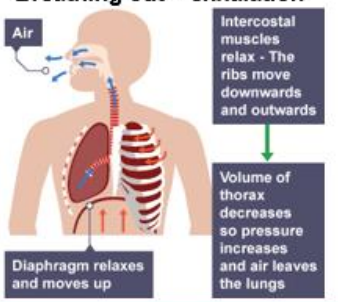
Features of the gaseous exchange system

- Small numerous alveoli increase the total surface area for gaseous exchange
- Good blood supply maintains the concentration gradient for diffusion
- Ventilation of the lungs supply oxygen rich air to the alveoli
- Short diffusion path for gases results in quicker diffusion

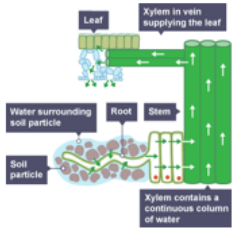
Breathing in – inhalation

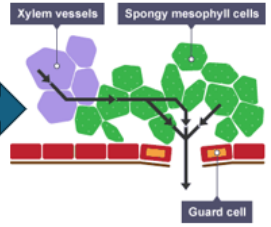


Breathing out – exhalation



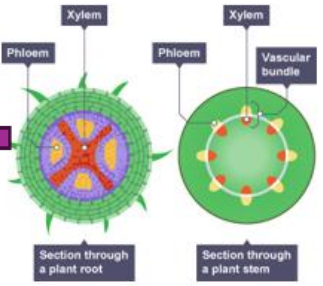
Transpiration – The evaporation of water vapour through the stomata of the leaf
Movement of water through the plant ⟶ Transpiration from the leaf

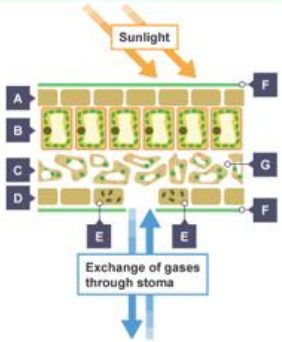




Factors effecting the rate of transpiration
Temperature – increases the rate of transpiration
Humidity – high humidity decreases transpiration
Air movement – increases transpiration
Light intensity – increases rate of transpiration

Plant transport systems – plant tissues





Year 11 Biology paper 1

Keywords: respiration photosynthesis vaccination communicable non communicable disease antibiotics painkillers placebo clinical trial cancer benign pathogen immune system white blood cell

Respiration – A chemical reaction in every living cell which releases energy
An exothermic reaction which releases energy to the environment
The energy is used for cell division, homeostasis, active transport and nervous transmission
Aerobic respiration: Controlled by enzymes which are found in the mitochondria
Word equation : glucose + oxygen → carbon dioxide + water + energy released
Symbol equation : $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$ + energy released
Anaerobic respiration: Occurs without oxygen in the cytoplasm
In animal cells: glucose → lactic acid + energy released (lactic acid builds up causing cramps , it is broken down in the liver by oxidation)
In plant cells and yeast: glucose → ethanol + carbon dioxide + energy released.– This is the process of fermentation and is used in brewing and baking

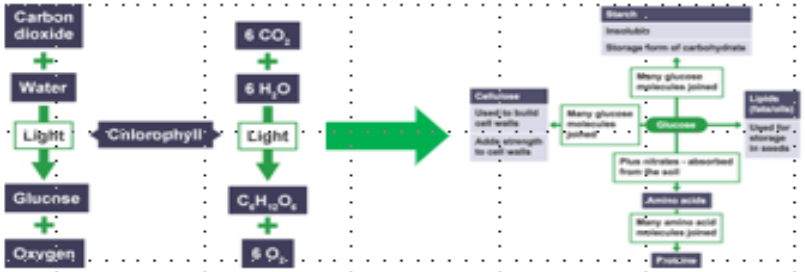
The response to exercise :
Muscles contract energy required from respiration (heart beats faster to supply more blood carrying oxygen to respiring muscle cells, breathing rate increases)
If insufficient oxygen is available cells will respire anaerobically which produces lactic acid
The lactic acid builds up causing cramps and sores
The lactic acid is broken down in the liver by oxygen, the amount of oxygen required to do this is the **oxygen debt**

Metabolism: All the chemical reactions in an organism
Animals : building up **Animals :breaking down molecules**

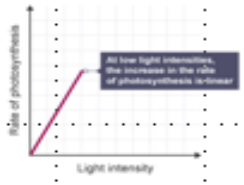


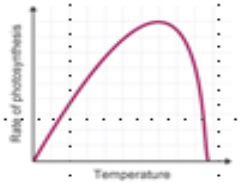


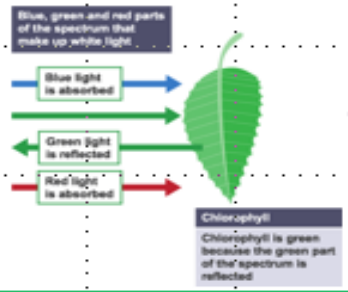
Photosynthesis : Endothermic reaction in all green plants



Factors effecting the rate of photosynthesis
Light **Carbon dioxide** **Chlorophyll**







Metabolism: All the chemical reactions in an organism
Plants: Building up **Plants: Breaking down**

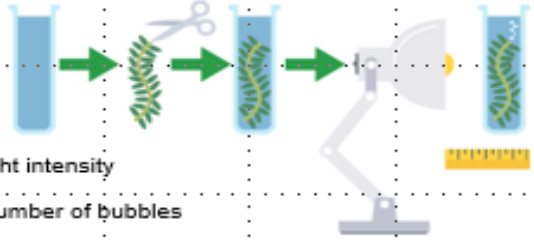




Year 11 Biology Paper 1

Keywords: respiration photosynthesis vaccination communicable non communicable disease antibiotics painkillers placebo clinical trial cancer benign pathogen immune system white blood cell

Required practical : Investigating the effect of light intensity on photosynthesis



IV: Light intensity

DV: Number of bubbles

Control : Temperature, bulb , time , CO2 concentration

To increase the light intensity, move the lamp towards the light – the rate of photosynthesis can be measured by the number of bubbles released over a given time

The light intensity can be changed by moving the lamp

Communicable Disease – caused by pathogens (diease causing micro organisms)

Pathogen	Example in animals	Example in plants
Viruses	HIV potentially leading to AIDS	Tobacco mosaic virus
Bacteria	Salmonella	Agrobacterium
Fungi	Athlete's foot	Rose black spot
Protists	Malaria	Downy mildew

Communicable disease

Type of disease	Name	Symptoms
Bacterial	Gonorrhoea	STD. yellow/ green discharge from penis or vagin a, pain urinating. Treated with antibiotics . Condoms prevent transmission
	Salmonella	Uncooked food and undercooked chicken , uncooked poultry . All poultry are vaccinated against it , cook food throughly
Protist	Malaria	A palumodium protist is passed by mosquitos feeding from infected to uninfected person. No vaccination. Avoiding insect bites is the best form of prevention
Virus	TMV	Reduces groth of tobacco plants , transmitted by farmers. No cure
	HIV/AIDS	Transmitted through body fluids , attacks the immune system until a secondary infection kills you. No cure.
	Measles	Highly infectious disease . Often kills children. Can cause infertility on adults , people are vaccinated against it
Fungal	Athletes foot	Found between peoples toes, spread in swimmingh pools or infected surfaces . Treated with antifungal medications
	Rose black spot	Causes blackening of leaves and then reduces photosynthesis and growth. Transmitted by direct contact . remove infected plants

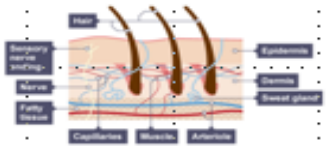
Type	Examples
Direct contact	This can be sexual contact during intercourse or non-sexual contact, like shaking hands.
Water	Dirty water can transmit many diseases, such as the cholera bacterium.
Air	When a person who is infected by the common cold sneezes, they can spray thousands of tiny droplets containing virus particles to infect others.
Unhygienic food preparation	Undercooked or reheated food can cause bacterial diseases like Escherichia coli which is a cause of food poisoning.
Vector	Any organism that can spread a disease is called a vector. Many farmers think tuberculosis in their cattle can be spread by badgers.

Preventing the spread of disease

Method	Example	How it works
Sterilising water	Cholera	Chemicals or UV light kill pathogens in unclean water.
Suitable hygiene - food	Salmonella	Cooking food thoroughly and preparing them in hygienic conditions kills pathogens.
Suitable hygiene - personal	Athlete's foot	Washing surfaces with disinfectants kills pathogens.Treating existing cases of infection kills pathogens.
Vaccination	Measles	Vaccinations introduce a small or weakened version of a pathogen into your body,and the immune system learns how to defend itself.
Isolation	Measles	Keeping infected people away from others stops the transfer of bodily fluids and sexually transmitted diseases.

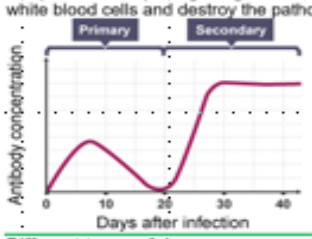
Defence against pathogens

Defence	Works by
Skin	Waterproof physical barrier, forms scabs , antimicrobial enzymes
Nose	Hairs which trap pathogens
Airways	Ciliated cells move mucus (made by goblet cells) which has trapped pathogens , out of the lungs
Stomach	Stomach acid (hydroichloric) kills pathogens in food or water



The skin
The immune system: White blood cells Phagocytosis , produce antibodies, produce Anti toxins

Devloping drugs – A drug is a substnace which physically or mentally alter the organism
Vaccination : 1. Inject inactive/dead pathogen **2.** White blood cells recognise the pathogenic antigen **3.** The body produces antibodies to destroy the pathogen and memory cells
If exposed to the pathogen again the ,the memory cells quickly produce antibody producing white blood cells and destroy the pathogen

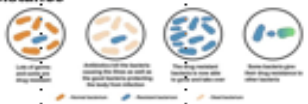




Herd immunity: Enough of the population is immune or vaccinated which reduces the risk of coming onto contact with infection

Different types of drugs
Painkillers : Remove symptoms Aspirin ibruprofen paracetamol
Antibiotics: Stop or slow the rate of Growth of bacteria, penicillin is an example

Antibiotic resistance



All viruses cause illness



Antibiotic resistance has arisen because of
Overuse ,Failing to comlete courses of antibiotics on farms
Ways to reduce antibiotic resistance
Only prescribe antibiotics when needed ,Use specific antibiotics
Specific infectiosn, isolate patients, clean hospitals

Discovering new drugs – safety , effectiveness , dosage
Placebo : fake drug
Preclinical: cells , tissues , animals and computer models
Clinical trial 1: Test on healthy people to see if it is safe
Clinical trial 2: Test on patients to see if it works
Clinical trial 3: Dosage

Non communicable disease – Cannot be spread from another source. Not caused by a pathogen
Cancer : Uncontrolled cell division results in the growth of a tumour. Benign tumours do not spread , malignant can spread . Treated by chemotherapy , radio therapy and surgery
Risk factors
Obesity – Blood sugar is unregulated – leads to type II diabetes
Alcohol – Scar tissue forms in the liver which stops it working – leads to liver cirrhosis
Smoking – damages lungs and increased risk of premature babies – lung cancer

The Periodic Table of Elements

1	2											3	4	5	6	7	0
							1 **H** hydrogen 1										4 **He** helium 2
7 **Li** lithium 3	9 **Be** beryllium 4											11 **B** boron 5	12 **C** carbon 6	14 **N** nitrogen 7	16 **O** oxygen 8	19 **F** fluorine 9	20 **Ne** neon 10
23 **Na** sodium 11	24 **Mg** magnesium 12											27 **Al** aluminium 13	28 **Si** silicon 14	31 **P** phosphorus 15	32 **S** sulfur 16	35.5 **Cl** chlorine 17	40 **Ar** argon 18
39 **K** potassium 19	40 **Ca** calcium 20	45 **Sc** scandium 21	48 **Ti** titanium 22	51 **V** vanadium 23	52 **Cr** chromium 24	55 **Mn** manganese 25	56 **Fe** iron 26	59 **Co** cobalt 27	59 **Ni** nickel 28	63.5 **Cu** copper 29	65 **Zn** zinc 30	70 **Ga** gallium 31	73 **Ge** germanium 32	75 **As** arsenic 33	79 **Se** selenium 34	80 **Br** bromine 35	84 **Kr** krypton 36
85 **Rb** rubidium 37	88 **Sr** strontium 38	89 **Y** yttrium 39	91 **Zr** zirconium 40	93 **Nb** niobium 41	96 **Mo** molybdenum 42	[98] **Tc** technetium 43	101 **Ru** ruthenium 44	103 **Rh** rhodium 45	106 **Pd** palladium 46	108 **Ag** silver 47	112 **Cd** cadmium 48	115 **In** indium 49	119 **Sn** tin 50	122 **Sb** antimony 51	128 **Te** tellurium 52	127 **I** iodine 53	131 **Xe** xenon 54
133 **Cs** caesium 55	137 **Ba** barium 56	139 **La*** lanthanum 57	178 **Hf** hafnium 72	181 **Ta** tantalum 73	184 **W** tungsten 74	186 **Re** rhenium 75	190 **Os** osmium 76	192 **Ir** iridium 77	195 **Pt** platinum 78	197 **Au** gold 79	201 **Hg** mercury 80	204 **Tl** thallium 81	207 **Pb** lead 82	209 **Bi** bismuth 83	[209] **Po** polonium 84	[210] **At** astatine 85	[222] **Rn** radon 86
[223] **Fr** francium 87	[226] **Ra** radium 88	[227] **Ac*** actinium 89	[261] **Rf** rutherfordium 104	[262] **Db** dubnium 105	[266] **Sg** seaborgium 106	[264] **Bh** bohrium 107	[277] **Hs** hassium 108	[268] **Mt** meitnerium 109	[271] **Ds** darmstadtium 110	[272] **Rg** roentgenium 111	[285] **Cn** copernicium 112	[286] **Nh** nihonium 113	[289] **Fl** flerovium 114	[289] **Mc** moscovium 115	[293] **Lv** livermorium 116	[294] **Ts** tennessine 117	[294] **Og** oganesson 118

Key

relative atomic mass
atomic symbol
name
atomic (proton) number

Year 11 Chemistry Knowledge organiser Atoms

Key words

Atom-Smallest part of an element that can exist

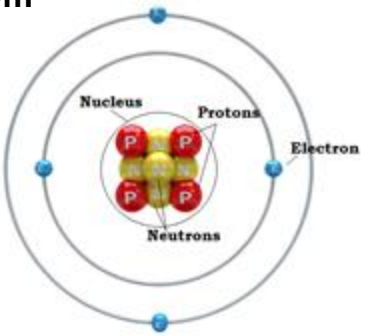
Element- Found on the periodic table only contains 1 type of atom

Compound-Two or more elements chemically bonded

Mixture- Two or more different substances not chemically bonded together

Molecule- Single part of a substance

The Atom

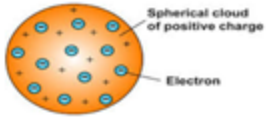


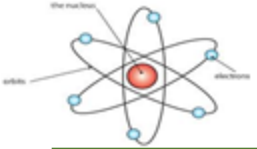
	Mass	Charge	Location
Proton	1	+	nucleus
Neutron	1	0	nucleus
Electron	Very small	-	shells

History of the atom

Dalton – atoms can't be divided

JJ Thompson discovered electrons – Plum pudding model

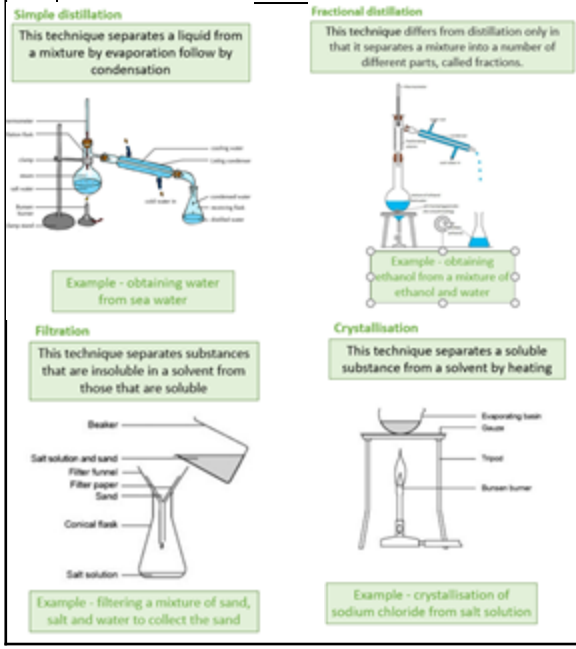




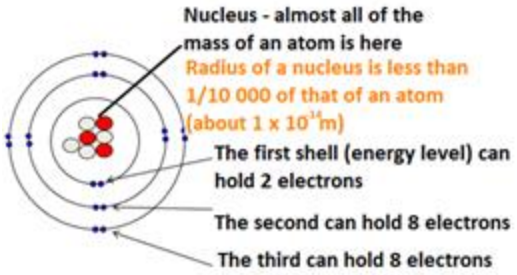
Geiger-Marsden The Nuclear Model of the Atom

Bohr – electrons in shells

Separating mixtures



Electron shells



Shells are filled in from the inner shell onwards

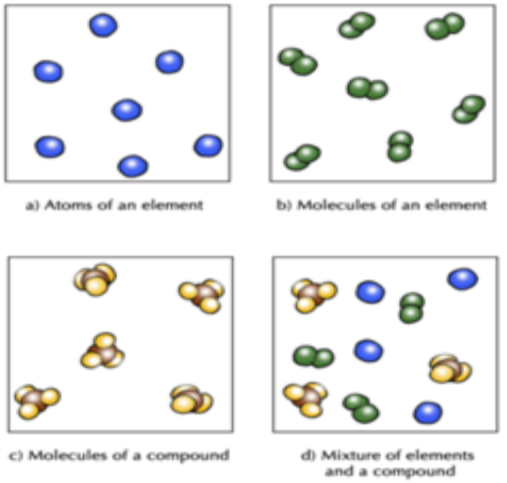
Eg. Na has 11 electrons

First shell=2

Second shell=8

Third shell= 1

Elements, Compounds and Mixtures



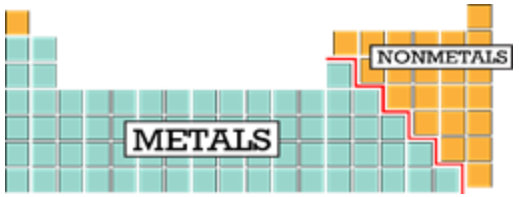
Year 11 Chemistry Knowledge organiser Bonding

Key words

Ion- Atom that has gained or lost electrons to become charged
Ionic bonding- Bonding between a metal and nonmetal through transfer of electrons
Covalent bonding- Bonding between nonmetals where electrons are shared
Metallic bonding- Bonding within metals where outer shell electrons are delocalised

Types of bonding

Using the periodic table to select the correct type of bonding
Ionic = Metal and nonmetal
Covalent = Just non metals
Metallic = Just metals

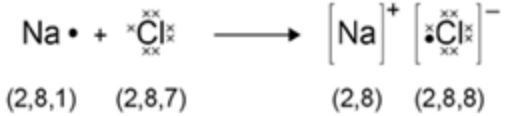


Atoms into ions

Metals LOSE ELECTRONS to form POSITIVE IONS
Non-metals GAIN ELECTRONS to form NEGATIVE IONS

Group	Electrons in outer shell	Charge on ion
1	1	1+
2	2	2+
6	6	2-
7	7	1-

Ionic bonding

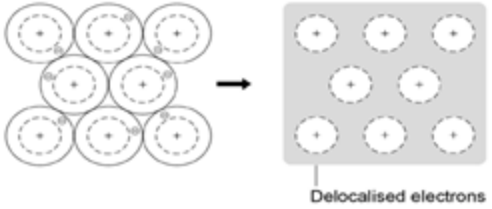


Ions have electronic structure of a noble gas

What is an ionic bond?
STRONG electrostatic force of attraction between **oppositely charged ions**

Metallic bonding

Metals LOSE ELECTRONS to form POSITIVE IONS



GIANT structures of atoms in a REGULAR pattern

Delocalised electrons are free to move.

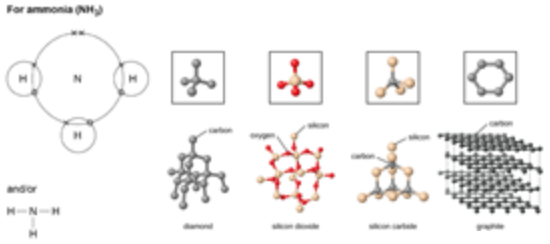
Covalent bonding

Small molecules

A small group of atoms sharing electrons

Giant Structures

Many atoms sharing electrons



Vocabulary: salt metal soluble dissolve saturated solution crystallise evaporation crystal strong weak acid complete disassociation partial dissociation reversible electrolysis aqueous solutions negative cathode positive anode electrons oxidation cryolite bromide exothermic endothermic temperature energy changes

Year 10 Chemistry
AUT1 Chemical and energy changes
Knowledge Organiser

The Reactivity Series

Here's a mnemonic to help you learn the order:

purple (potassium)
shine (sodium)
can (calcium)
make (magnesium)
a (aluminium)
careless (carbon)
zebra (zinc)
insane (iron)
try (tin)
learning (lead)
how (hydrogen)
camels (copper)
surprise (silver)
gorillas (gold)
platinum

potassium
sodium
calcium
magnesium
aluminium
carbon
zinc
iron
tin
lead
hydrogen
copper
silver
gold
platinum

The reactivity series is a league table for metals. The more reactive metals are near the top of the table with the least reactive near the bottom. In chemical reactions, a more reactive metal will displace a less reactive metal.

Reactions of Metals with Water

Metals, when reacted with water, produce a metal hydroxide and hydrogen.

lithium + water → lithium hydroxide + hydrogen

$2Li + 2H_2O \rightarrow 2LiOH + H_2$

The more reactive a metal is, the faster the reaction.

Reactions of Metals with Dilute Acid

Metals, when reacted with acids, produce a salt and hydrogen.

Sodium + hydrochloric acid → sodium chloride + hydrogen

$2Na + 2HCl \rightarrow 2NaCl + H_2$

Metals that are below hydrogen in the reactivity series **do not** react with dilute acids.

Reactions of Acids

The general formula for the reaction between an acid and a metal is:

acid + metal → salt + hydrogen

For example: hydrochloric acid + sodium → sodium chloride + hydrogen

$2HCl + 2Na \rightarrow 2NaCl + H_2$

When an acid reacts with an alkali, a neutralisation reaction takes place and a salt and water are produced.

The general formula for this kind of reaction is as follows:

acid + alkali → salt + water

hydrochloric acid + sodium hydroxide → sodium chloride + water

$HCl + NaOH \rightarrow NaCl + H_2O$

Naming Salts

The first part comes from the metal in the metal carbonate, oxide or hydroxide. The second part of the name comes from the acid that was used to make it.

For example, sodium chloride.

Acid Used	Salt Produced
hydrochloric	chloride
nitric	nitrate
sulfuric	sulfate

Redox Reactions (Higher Tier Only)

When metals react with acids, they undergo a redox reaction. A **redox reaction** occurs when both **oxidation** and **reduction** take place at the **same time.**

For example:

$2H^+ + Ca \rightarrow Ca^{2+} + H_2$

The ionic equation can be further split into two half equations.

$Ca \rightarrow Ca^{2+} + 2e^-$

Oxidation is loss of electrons.

$2H^+ + 2e^- \rightarrow H_2$

Reduction is gaining of electrons.

Reactions with Bases

The general formula for the reaction between an acid and a metal oxide is:

acid + metal oxide → salt + water

sulfuric acid + copper oxide → copper sulfate + water

$H_2SO_4 + CuO \rightarrow CuSO_4 + H_2O$

Reactions with Carbonates

The general formula for the reaction between an acid and a carbonate is:

acid + carbonate → salt + water + carbon dioxide

hydrochloric acid + calcium carbonate → calcium chloride + water + carbon dioxide

pH Scale



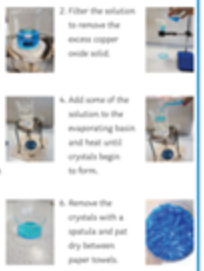
In aqueous solutions, acids produce H^+ ions and alkalis produce OH^- ions. Neutral solutions are pH7 and are neither acids or alkalis.

For example, in neutralisation reactions, hydrogen ions from an acid react with hydroxide ions from an alkali to produce water:

$H^+ + OH^- \rightarrow H_2O$

Making Soluble Salts

1. Make a saturated solution by stirring copper oxide into the sulfuric acid until no more will dissolve.
2. Filter the solution to remove the excess copper oxide solid.
3. Half fill a beaker with water and set this over a Bunsen burner to heat the water. Place an evaporating dish on top of the beaker.
4. Add some of the solution to the evaporating basin and heat until crystals begin to form.
5. Once cooled, pour the remaining liquid into a crystallising dish and leave to cool for 24 hours.
6. Remove the crystals with a spatula and pat dry between paper towels.



Strong and Weak Acids (Higher Tier Only)

A **strong** acid **completely dissociates** in a solution. For example: $HCl \rightarrow H^+ + Cl^-$

Hydrochloric acid is able to completely dissociate in solution to form hydrogen and chloride ions.

Examples of strong acids include nitric acid (HNO_3) and sulfuric acid (H_2SO_4).

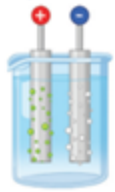
Weak acids in comparison only partially dissociate.

For example acetic acid **partially dissociates** to form a hydrogen and acetate ion.

$CH_3COOH \rightleftharpoons CH_3COO^- + H^+$

The **double arrow** symbol indicates that the reaction is **reversible**. Both the forward and reverse reaction occur at the same time and the reaction never goes to completion.

Electrolysis of Aqueous Solutions



Gases may be given off or metals deposited at the electrodes. This is dependent on the reactivity of the elements involved.

If the metal is **more reactive** than **hydrogen** in the reactivity series, then **hydrogen** will be **produced** at the **negative cathode.** At the **positive anode,** negatively charged ions **lose** electrons. This is called **oxidation** and you say that the ions have been oxidised.

Using Electrolysis to Extract Metals

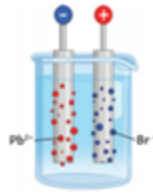
Metals are extracted by electrolysis if the metal in question reacts with carbon or if it is too reactive to be extracted by reduction with carbon. During the extraction process, large quantities of energy are used to melt the compounds.

Aluminium is manufactured by the process of electrolysis. Aluminium oxide has a high melting point and melting it would use large amounts of energy. This would increase the cost of the process, therefore molten **cryolite** is added to aluminium oxide to lower the melting point and thus reduce the cost.

Electrolysis of Molten Ionic Compounds – Lead Bromide

Lead bromide is an **ionic** substance. Ionic substances, when solid, are **not** able to conduct electricity. When molten or in solution, the ions are free to move and are able to carry a charge.

The **positive** lead ions are attracted toward the **negative cathode** at the same time as the **negative bromide** ions are attracted toward the **positive anode.**



Oxidation is the loss of electrons and reduction is the gaining of electrons. **OIL RIG** (Higher Tier Only).

We represent what is happening at the electrodes by using **half equations** (Higher Tier Only).

The lead ions are attracted towards the negative electrode. When the **lead ions** (Pb^{2+}) reach the cathode, each ion **gains two electrons** and becomes a neutral atom. We say that the lead ions have been **reduced.**

$Pb^{2+} + 2e^- \rightarrow Pb$

The bromide ions are attracted towards the positive electrode. When the **bromide ions** (Br^-) reach the anode, each ion **loses one electron** to become a neutral atom. Two bromine atoms are then able to bond together to form the covalent molecule Br_2.

$2Br^- \rightarrow Br_2 + 2e^-$

Exothermic and Endothermic Reactions

When a chemical reaction takes place, **energy** is involved. Energy is transferred when chemical **bonds are broken** and when new **bonds are made.**

Exothermic reactions are those which involve the transfer of energy **from the reacting chemicals to** the surroundings. During a practical investigation, an exothermic reaction would show an **increase in temperature** as the reaction takes place.

Examples of exothermic reactions include **combustion, respiration and neutralisation** reactions. Hand-warmers and self-heating cans are examples of everyday exothermic reactions.

Endothermic reactions are those which involve the transfer of energy **from the surroundings to** the reacting chemicals. During a practical investigation, an endothermic reaction would show a **decrease in temperature** as the reaction takes place.

Examples of endothermic reactions include the **thermal decomposition** of calcium carbonate.

Eating **sherbet** is an everyday example of an endothermic reaction. When the sherbet dissolves in the saliva in your mouth, it produces a cooling effect. Another example is **instant ice packs** that are used to treat sporting injuries.

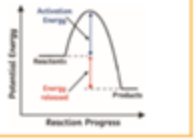


Reaction Profiles – Exothermic

Energy level diagrams show us what is happening in a particular chemical reaction. The diagram shows us the **difference in energy** between the reactants and the products.

In an exothermic reaction, the **reactants** are at a **higher** energy level than the products.

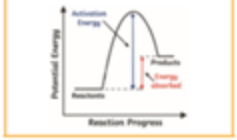
In an **exothermic** reaction, the difference in energy is **released** to the surroundings and so the **temperature** of the surroundings **increases.**



Reaction Profiles – Endothermic

In an **endothermic** reaction, the **reactants** are at a **lower** energy level than the products.

In an **endothermic** reaction, the difference in energy is **absorbed** from the surroundings and so the **temperature** of the surroundings **decreases.**



Vocabulary: acid metal salt soluble salts alkali copper oxide sulphuric acid electrolysis electricity anode cathode inert aqueous cryolite endothermic exothermic thermometer

Year 10 Chemistry
AUT 2 – Required practical revision
Knowledge Organiser

Reactions of Acids

The general formula for the reaction between an acid and a metal is:
acid + metal → salt + hydrogen

For example: hydrochloric acid + sodium → sodium chloride + hydrogen

$2HCl + 2Na \rightarrow 2NaCl + H_2$

When an acid reacts with an alkali, a neutralisation reaction takes place and a salt and water are produced.

The general formula for this kind of reaction is as follows:

acid + alkali → salt + water

hydrochloric acid + sodium hydroxide → sodium chloride + water

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Naming Salts

The first part comes from the metal in the metal carbonate, oxide or hydroxide. The second part of the name comes from the acid that was used to make it.

Acid Used	Salt Produced
hydrochloric	chloride
nitric	nitrate
sulfuric	sulfate

For example, sodium chloride.

Making Soluble Salts

1. Make a saturated solution by stirring copper oxide into the sulfuric acid until no more will dissolve.



2. Filter the solution to remove the excess copper oxide solid.



3. Half fill a beaker with water and set this over a Bunsen burner to heat the water. Place an evaporating dish on top of the beaker.



4. Add some of the solution to the evaporating basin and heat until crystals begin to form.



5. Once cooled, pour the remaining liquid into a crystallising dish and leave to cool for 24 hours.



6. Remove the crystals with a spatula and pat dry between paper towels.



The Process of Electrolysis

Electrolysis is the **splitting up** of an ionic substance using **electricity.**

On setting up an electrical circuit for electrolysis, two **electrodes** are required to be placed in the electrolyte. The electrodes are **conducting rods.** One of the rods is connected to the **positive** terminal and the other to the **negative** terminal.

The **electrodes** are **inert** (this means they do not react in the reaction) and are often made from **graphite** or platinum.

During the process of electrolysis, **opposites attract.** The positively charged ions will be attracted toward the negative electrode. The negatively charged ions will be attracted towards the positive electrode.

When ions reach the electrodes, the charges are lost and they become elements.

The **positive** electrode is called the **anode.**

The **negative** electrode is called the **cathode.**

Exothermic and endothermic reactions

Required Practical

Aim

To investigate the variables that affect temperature changes in reacting solutions, e.g. acid plus metals, acid plus carbonates, neutralisations and displacement of metals.

Equipment

- polystyrene cup
- measuring cylinder
- thermometer
- 250cm³ glass beaker
- measuring cylinder
- top pan balance



Method

1. Gather the equipment.
2. Place the polystyrene cup inside the beaker. This will prevent the cup from falling over.
3. Using a measuring cylinder, measure out 30cm³ of the acid. Different acids such as hydrochloric or sulfuric acid may be used. Pour this into the polystyrene cup.
4. Record the temperature of the acid using a thermometer.
5. Using a top pan balance, measure out an appropriate amount of the solid (for example, 10g) or use one strip of a metal such as magnesium.
6. Add the solid to the acid and record the temperature. You may choose to record the temperature of the acid and metal every minute for 10 minutes.

Electrolysis of Molten Ionic Compounds – Lead Bromide

Lead bromide is an **ionic** substance. Ionic substances, when solid, are **not** able to conduct electricity. When molten or in solution, the ions are free to move and are able to carry a charge.

The **positive** lead ions are attracted toward the **negative cathode** at the same time as the **negative bromide** ions are attracted toward the **positive anode.**



Oxidation is the loss of electrons and reduction is the gaining of electrons. **OIL RIG.** (Higher Tier Only).

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Electrolysis of Aqueous Solutions



Gases may be given off or metals deposited at the electrodes. This is dependent on the reactivity of the elements involved.

If the metal is **more reactive** than **hydrogen** in the reactivity series, then **hydrogen** will be **produced** at the **negative cathode.** At the **positive anode,** negatively charged ions **lose** electrons. This is called **oxidation** and you say that the ions have been oxidised.

Year 11 Physics

Students should be able to select and apply the following equations from the Physics equation sheet.

Equations required for Higher Tier papers only are indicated by HT in the left hand column.

Equation number	Word equation	Symbol equation
1 HT	pressure due to a column of liquid = height of column × density of liquid × gravitational field strength (g)	$p = h \rho g$
2	(final velocity)^2 – (initial velocity)^2 = 2 × acceleration × distance	$v^2 - u^2 = 2 a s$
3 HT	force = $\frac{\text{change in momentum}}{\text{time taken}}$	$F = \frac{m \Delta v}{\Delta t}$
4	elastic potential energy = 0.5 × spring constant × (extension)^2	$E_e = \frac{1}{2} k e^2$
5	change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = m c \Delta \theta$
6	period = $\frac{1}{\text{frequency}}$	
7	magnification = $\frac{\text{image height}}{\text{object height}}$	
8 HT	force on a conductor (at right angles to a magnetic field) carrying a current = magnetic flux density × current × length	$F = B I l$

Electromagnetism

Key Words

Pole - The places on a magnet where the magnetic forces are strongest

Magnetic Field - The area around a magnet where a force acts on another magnet or magnetic material.

Magnetic Material - There are four magnetic materials: iron, steel, cobalt and nickel.

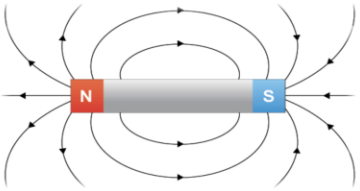
Compass - Compasses contain small bar magnets which points to the north pole of the Earth's magnetic field

Solenoid - A solenoid is a long coil of wire that produces a controlled magnetic field.

Electromagnet - A solenoid containing an iron core which increases its strength

Magnetic Fields

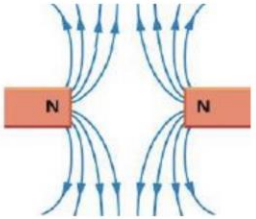
The magnetic field lines of a bar magnet curve around from the north pole of the bar magnet to the south pole. The field lines always go from north to south and never touch.



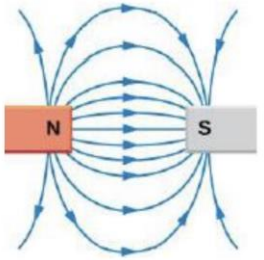
Induced magnetism is magnetism created in an unmagnetised magnetic material when the material is placed in a magnetic field. Steel is used instead of iron to make permanent magnets because steel does not lose its magnetism easily but iron does.

Repel & Attract

Like poles repel. When two north poles (or two south poles) are placed together, they will repel each other.



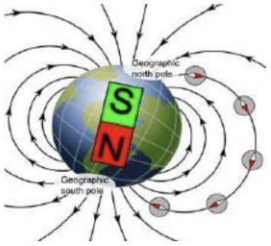
Unlike poles attract. When a north pole and a south pole are placed together, they will attract.



Attraction and repulsion between two magnetic poles are examples of non-contact forces.

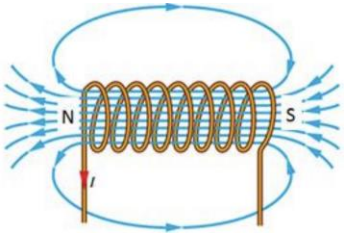
Earth as a magnet

The Earth behaves as if there is a bar magnet inside it. The geographic north pole is a magnetic south pole. A compass will point towards geographical north and is the north-seeking pole. We know it is the core of the Earth that is magnetic(not the whole thing) because a compass at the north pole points below your feet.



Magnetic Fields in Electric Currents

We can increase the strength of the magnetic field by putting a magnetic (e.g. iron) core in the solenoid (long coil of wire.) The magnetic field in a solenoid is concentrated inside the coil in a uniform direction, otherwise it acts in the same way as a bar magnet



Increasing Current

Increasing current makes the magnetic field stronger. Reversing the direction of the current reverses the magnetic field lines.

Electromagnets

An electromagnet is a solenoid that has an iron core. It consists of an insulated wire wrapped around an iron bar.

Increasing the force of a solenoid

• Add an iron core • Increase the number of coils of wire • Increase the current • Move the magnetic material closer to the solenoid.

Knowledge Organiser: Weimar and Nazi Germany 1918-45
Section 1: The Weimar Republic, 1918-29

The Weimar Republic	
1	This was the name given to Germany after the Kaiser had abdicated in November 1918. This was a time of despair and hope for Germany. At first, the country faced lots of chaos but under Gustav Stresemann, there was some stability.
Key events	
2	**1918** World War One ended. The Kaiser abdicated and Germany became a country without a monarch (a Republic).
3	**1919 January** Spartacist Uprising
4	**1919 June** Signing of the Treaty of Versailles
5	**1919 August** Weimar Constitution finalised
6	**1920** Kapp Putsch
7	**1923** French occupation of the Ruhr and hyperinflation, Munich Putsch
8	**1924** Dawes Plan
9	**1925** Locarno Pact
10	**1926** Germany joins League of Nations
11	**1928** Kellogg Briand Pact
12	**1929** Young Plan
Key Concepts	
13	**The Weimar Republic** faced much opposition, It was disliked by the left wing who wanted Germany to be like Communist Russia and it was disliked by the right wing who wanted the monarchy back.
14	**The Treaty of Versailles** caused many problems for Germany. The German people disliked the politicians for signing it and it caused political problems and economic problems.
15	**Gustav Stresemann** helped to bring about recovery in Germany after 1924. He solved economic problems by making friends with other countries. However, historians have very different views about the extent of this recovery.
16	**The Golden Age** was the period from 1924-29 and it saw significant changes in culture, the standard of living and the position of women.

Key Words		
17	**Abdication**	When a monarch leaves the throne
18	**Republic**	A country without a King or a Queen
19	**Ebert**	The first President of the Republic
20	**Stresemann**	The Chancellor of Germany from the Summer of 1923
21	**Article 48**	The President could use this to ignore the Reichstag and rule as he saw fit
22	**Kaiser**	King
23	**Armistice**	An agreement to end war
24	**Weimar**	The new government could not meet in Berlin as it was so dangerous, so they met here instead
25	**Constitution**	This is an agreement about how the country would be ruled
26	**Reichstag**	German parliament
27	**Gewaltfrieden**	An enforced peace
28	**Freikorps**	Ex military soldiers who wanted to overthrow the Republic
29	**Rentenmark**	The currency of Germany after November 1923
30	**Hyperinflation**	When money loses its value
31	**Dawes Plan**	An agreement where the USA would lend Germany money
32	**Young Plan**	This lowered the reparations payment and gave Germany longer to pay
33	**Treaty of Versailles**	This decided how Germany was going to be treated after WW1
34	**Locarno Pact**	An agreement on borders signed by Britain, France, Italy and Belgium
35	**Kellogg Briand Pact**	65 counties including Germany agreed to resolve conflict peacefully
36	**Coalition**	A government of two or more political parties

Knowledge Organiser: Weimar and Nazi Germany 1918-45
Section 2: The Nazi's Rise to Power, 1919-33

Hitler's Rise to Power	
1	Hitler sets up the Nazi Party in 1920 and becomes Chancellor in January 1933. This happens for a variety of reasons – Hitler's strengths, inbuilt problems of the Weimar Republic, and the weaknesses of others.
Key events	
2	**1919** Hitler joins the German Worker's Party
3	**1920** Hitler sets up the Nazi Party
4	**1921** Hitler introduces the SA
5	**1923** The Munich Putsch
6	**1925** Mein Kampf published
7	**1926** Bamberg Conference
8	**1928** Nazis win 12 seats in Reichstag
9	**1929** Death of Stresemann and Wall Street Crash
10	**1930** Nazis win 107 seats in Reichstag
11	**1932 July** Nazis win 230 seats in Reichstag
12	**1932 November** Nazis win 196 seats in Reichstag
13	**1933 January** Hitler becomes Chancellor
Key Concepts	
14	**The Munich Putsch** is a significant event. Although a failure, Hitler gained publicity, he wrote Mein Kampf and he realised that if he was to win power, he needed to do this by votes and not by force.
15	**Stable Stresemann** caused problems for the popularity of the Nazi Party. When times were good, voters were not attracted to the Nazi policies.
16	**The Wall Street Crash** was a major turning point in the fortunes of the Nazi Party. The Nazi message did not change but people were now prepared to hear it.
17	**The Backstairs Intrigue** - At a time when Nazi popularity at the polls was decreasing, Hitler was handed power by political elites who feared a Communist take over and Civil War.

Key Words		
18	**NSDAP**	The Nazis
19	**Iron Cross Award**	Given for bravery in war
20	**Volk**	The notion of pure German people
21	**25 Point Programme**	The political manifesto of the Nazi Party
22	**Volkischer Beobachter**	People's Observer, a Nazi newspaper
23	**Fuhrerprinzip**	Belief that one person should run a Party
24	**Swastika**	Emblem of the Nazi Party
25	**SA or Sturmabteilung**	Private army of the Nazi Party headed by Himmler
26	**Aryan**	Pure German people
27	**Anti-Semitism**	Hatred of the Jewish people
28	**Mein Kampf**	Hitler's autobiography
29	**Putsch**	An attempt to get power illegally
30	**Blood Martyrs**	16 Nazis who died at the Munich Putsch
31	**Gaue**	Local party branches
32	**SS or Schutzstaffel**	Hitler's bodyguards
33	**KPD**	German Communist Party
34	**Propaganda**	Goebbels attempted to make people think in a certain way
35	**Hindenburg**	The President of the Republic from 1925 to 1934
36	**Roter Frontkampferbund**	The Communist's own private army

Knowledge Organiser: Weimar and Nazi Germany 1918-45
Section 3: Nazi Control and Dictatorship 1933- 1945

Nazi Control and Dictatorship	
1	This was a time when Hitler formed a legal dictatorship and put in place methods of propaganda and censorship to persuade and encourage all Germany people to support Nazi ideals.
Key events	
2	**1933 January** Hitler becomes Chancellor
3	**1933 February** Reichstag Fire
4	**1933 March** Nazis win 288 seats
5	**1933 March** Enabling Act passed
6	**1933 July** Nazis become the only legal party in Germany
7	**1934 June** Night of the Long Knives
8	**1934 August** President Hindenburg dies
9	**1934 August** Hitler combines the post of Chancellor and President and becomes Fuhrer
10	**1934** August German army swears allegiance to Hitler
11	**1938** Over the course of the year, Hitler removes 16 army generals from their positions
Key Concepts	
12	**Removal –** From 1933 to 1934, Hitler removed all opposition and established himself as Fuhrer.
13	**Control –** There was an attempt to control and influence attitudes. This was done by propaganda and terror.
14	**Opposition –** The youth and the churches opposed the regime.

Key Words		
15	**Marinus van der Lubbe**	The Reichstag Fire was blamed on this Communist
16	**Enabling Act**	Gave the Nazis full power for the next 4 years
17	**Gleichschaltung**	Hitler's attempt to bring German society into line with Nazi philosophy
18	**German Labour Front (DAF)**	Set up to replace Trade Unions
19	**Dachau**	First concentration camp
20	**Centralisation**	Germany had been divided into districts called Lander. Now Germany was run from Belin alone
21	**Purge**	To get rid of opposition
22	**Gestapo**	Secret police headed by Goering.
23	**Night of the Long Knives**	Removal on internal and external opposition
24	**Sicherheitsdienst (SD)**	The intelligence body of the Nazi Party
25	**Concordat**	In July 1933 the Pope agreed to stay out of political matters if the Nazis did not interfere with Catholic affairs
26	**Eidelweiss Pirates and Swing Youth**	Groups who apposed the Hitler Youth
27	**Confessional Church**	Followed traditional German Protestantism and refused to allow the Nazification of religion. Led by Pastor Martin Niemoller
28	**Mit Brennender Sorge (With Burning Concern)**	The Pope wrote to priests in Germany about his concerns over the Nazi attempts to control religion

Knowledge Organiser: Weimar and Nazi Germany 1918-45
Section 4: Life in Nazi Germany, 1933-45

Life in Nazi Germany	
1	The lives of German citizens were changed after Hitler's appointment as Chancellor. For some, life was better under the Nazis but for others, it was much worse.
Key events	
2	**1933** Boycott of Jewish shops and businesses. Law for the Encouragement of Marriage. Sterilisation Law passed.
3	**1935** The Nuremberg Laws were passed.
4	**1935** Conscription introduced.
5	**1936** Membership of the Hitler Youth made compulsory.
6	**1938** Jewish children were not allowed to attend German schools. Lebensborn programme introduced. Kristallnacht.
7	**1939** The euthanasia campaign began. Designated Jewish ghettos established.
Key Concepts	
9	**Anti-Semitism** – Persecution of the Jews grew continuously after 1933.
10	**Young**– The Nazis placed much emphasis on controlling the young as only then could they secure a 'thousand year Reich'. Youth organisations and education indoctrinated the German youth.
11	**Women –** The Nazis had traditional family values but even these were tested by the needs of war and the desire to ensure a growing Aryan population.
12	**Living Standards** – The Nazis did reduce unemployment but they did this by banning Jews and women from the workplace and by putting Germany on a war footing. Workers had limited rights.

Key Words		
13	**Kinder, Kuche, Kirche**	Children, Kitchen, Church. This summed up the Nazi ideal of womanhood
14	**The Motherhood Cross Award**	Given to women for large families
15	**Lebensborn**	Where unmarried women were impregnated by SS men.
16	**Napola**	Schools intended to train the future leaders of Germany
17	**Nazi Teachers League**	All teachers had to swear an oath of loyalty to the Nazis
18	**Reich Labour Service**	A scheme to provide young men with manual labour jobs
19	**Invisible unemployment**	The Nazi unemployment figures did not include women, Jews, opponent and unmarried men under 25
20	**Autobahn**	Motorway
21	**Rearmament**	Building up the armed forces I readiness for war
22	**Volksgemeinshaft**	The Nazi community
23	**Strength Through Joy**	An attempt to improve the leisure time of German workers
24	**Beauty of Labour**	Tried to improve working conditions of German workers.
25	**Volkswagon**	People's car
26	**Eintopf**	A one pot dish
27	**Herrenvolk**	The master race or the Aryans
28	**Nuremberg Laws**	Jews were stripped of their citizenship rights and marriage between Jews and no Jews was forbidden
29	**Kristallnacht (Night of the Broken Glass)**	A Nazi sponsored event against the Jewish community

Knowledge Organiser – History
Topic 1: Medicine in Medieval Britain c.1250-Present

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

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

Knowledge Organiser – History
Topic 2: The Medical Renaissance in England 1500-1700

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

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

Knowledge Organiser – History

Topic 3: Medicine in 18th and 19th Century Britain

18th and 19th century Britain	
1	This was a time of breakthroughs in medicine in England. There were many scientific discoveries but also many Public Health problems.
Key events	
2	**1798** – Edward Jenner developed the first vaccine for Smallpox
3	**1847** – James Simpson developed chloroform as an anaesthetic
4	**1848 –** The First Public Health Act
5	**1854** – John Snow's maps proved the source of cholera
6	**1854 –** Florence Nightingale improves conditions in hospitals
7	**1861** – Louis Pasteur's germ theory was published
8	**1866 -** most of London was connected to a sewer network devised by Joseph Bazalgette
9	**1867-** Lister used antiseptic to prevent infection
10	**1875 –** The Second Public Health Act
11	**1882** Robert Koch identified bacteria that caused specific diseases
Key Concepts	
12	**Nursing** – Nurses are responsible for the care of patients in hospital. Before 1800, hospitals were dangerous places where death was very likely. The development of nursing changed that.
13	**Breakthrough –** a scientific discovery that dramatically alters the way people understood disease – e.g. the discovery of bacteria. This then helps the problem to be solved.
14	**Public Health –** when the government takes measures to prevent diseases spreading and to help the population become healthier. The government increasingly took on this role after the development of germ theory

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

Knowledge Organiser – History
Topic 4: Modern Medicine – 1900 - Present

Modern Britain	
1	From 1900-Present, there have been massive changes in medicine and treatment
Key events	
2	**1900 –** life expectancy was still below 50 years of age
3	**1909** – The first Magic Bullet – Salvarsan 606
4	**1911 –** National Insurance Bill introduced – gave help if workers were sick or unemployed
5	**1914-1918** World War One leads to developments in surgery and treatment
6	**1928** – Fleming discovered penicillin
7	**1932 –** The second Magic Bullet – Prontosil
8	**1938 –** Florey and Chain developed use of penicillin
9	**1948 –** The NHS begins following the Beveridge report (1942)
10	**1953** – Crick and Watson discovered the structure of DNA
Key Concepts	
11	**War** – World War One and World War Two forced developments in treatment and surgery – e.g. plastic surgery and the use of antibiotics in WW2.
12	**Technology** – huge improvements in technology greatly improved the understanding and treatment of disease – e.g. X-ray, DNA, Pacemakers, dialysis and keyhole surgery
13	**National Health Service** - After WW2, the government introduced the NHS in 1948. This offered free healthcare at the point of delivery. The expansion of who could vote and the shared experience of suffering in WW2 bought about this development.

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

Knowledge Organiser: Anglo-Saxon England and the Norman Conquest, 1060-66.

When Edward the Confessor died in 1066 without an heir to the throne a succession crisis ensued and led to the Norman Invasion of England.

Summarise your learning

Topic 1: Anglo-Saxon Society	Anglo-Saxon England was a Christian country which had developed a strong system of government and a prosperous economy. There was an established social system with the Monarch at the head.
Topic 2: The last years of Edward the Confessor and the succession crisis	In 1066, Edward the Confessor died without an heir to the throne. This created a succession and crisis and a competition for the throne. This was complicated by promised Edward made on his deathbed to the rival claimants.
Topic 3: The rival claimants for the throne	After the death of Edward the Confessor, Harold Godwinson was crowned King by the Witan. He defeated Harald Hardrada at the Battle of Stamford Bridge in 1066.
Topic 4: The Norman Invasion	The Normans invaded and defeated Harold Godwinson at the Battle of Hastings in 1066.

Chronology: what happened on these dates?

1064	**Harold's embassy to Normandy.**
1065	**Uprising against Earl Tostig**, led by Northumbrian Thegns. Tostig is later exiled from England.
5-6th Jan 1066	**Death of Edward the Confessor**. Harold Godwinson is chosen by the Witan to become the next King of England.
20th Sept 1066	**The Battle of Gate Fulford** – A crushing defeat for Earls Edwin and Morcar against Harald Hardrada.
25th Sept 1066	**The Battle of Stamford Bridge –** A battle between Harold Godwinson and Harald Hardrada near York. Hardrada is killed.
14th Oct 1066	**The Battle of Hastings –** A battle between Harold Godwinson and William of Normandy at Hastings. Harold Godwinson is killed. William becomes King of England.



Who were these people? What were these events?

Edward the Confessor	An Anglo-Saxon King of England from 1042-1066. He died without an heir to the throne causing a succession crisis in England.
Harold Godwinson	Son of Earl Godwin. Succeeded his father as Earl of Wessex in 1053 and was crowned King of England in 1066.
Tostig Godwinson	Brother of Harold Godwinson. Titled Earl of Northumbria in 1055 but was exiled after a revolt against his rule. He fought alongside Harald Hardrada at the Battle of Stamford Bridge.
Harald Hardrada	King of Norway. A fearsome Viking warrior feared across Europe. He was a rival claimant to the throne in 1066 but was killed by Harold Godwinson at the Battle of Stamford Bridge.
William of Normandy	Duke of Normandy and later King of England. He was a rival claimant to the throne in 1066 and defeated Harold Godwinson at the Battle of Hastings.
Edgar Aethling	Nephew of Edward the Confessor. He was a rival claimant to the throne in 1066 due to his royal blood but was not chosen by the Witan due to his young age.

Vocabulary: define these words

Anglo-Saxon	People who had settled in England after the Romans left Britain.
Aristocracy	The people in society who are seen as being important because of their wealth and power.
Ceorls	'Free' peasant farmers not tied to their land.
Hides	The measurement used for land. One hide was about 120 acres.
Earls	Highest Anglo-Saxon aristocracy.
Oath	A solemn promise to do something.
Shire Reeve	An official of the King: his Sheriff. Sheriffs managed the King's estates, collected revenue for him and were in charge of local courts.
Blood Feuds	A revenge system based on family loyalties and honour. If someone was killed then the family had the right to kill someone from the murderers family, who then had the right to revenge themselves, and so on.
Danelaw	The part of England where Danish (Viking) power had been the strongest and which kept some of its Danish laws instead of Anglo-Saxon ones.
Embassy	An official visit by representatives of one ruler to another ruler.
Housecarls	Highly-trained troops that stayed with their lord wherever he went.
Fyrd	The men of the Anglo-Saxon army and fleet. Every five hides provided one man for the Fyrd.
Tithings	An administrative unit that was a group of ten households.

Knowledge Organiser: William I in Power: Securing the Kingdom, 1066-1087.

William had won the Battle of Hastings in 1066 and destroyed the power of the Godwinsons. However, it would take many more years before William could feel secure as the King of England.

Summarise your learning

Topic 1: Establishing Control	To gain control of England, William needed to gain the support of important Anglo-Saxon Earls, reward the loyalty of the Normans and establish control of the borderlands from the threat of invasion.
Topic 2: Anglo-Saxon resistance, 1068-71.	Anglo-Saxon resistance to William's rule grew as many lost their power and land to the Normans. William faced many rebellions but was able to defeat them and imposed strict control over rebellious areas.
Topic 3: The legacy of resistance to 1087.	To prevent further resistance and rebellion William used a variety of economic, social, political and military methods to enforce Norman control.
Topic 4: Revolt of the Earls, 1075.	William's strict control of England caused even Norman Earls to Revolt against his rule in 1075. Although the rebellion was defeated, William needed to be mindful of the resentment of his own Earls.



Chronology: what happened on these dates?	
1066	William crowned King of England on 25th December 1066. All land forfeited to the new king.
1066-87	**Changes in Landownership –** A landholding revolution where the Normans replaced Anglo-Saxons as landholders.
1068	**Revolt of Earls Edwin and Morcar –** Anglo-Saxon Earls revolt against the tyranny of William I but are defeated in 1071.
1069	**Rebellions in the North –** A series of rebellions in the North supported by Edgar Aethling, Malcom III and King Sweyn of Denmark.
1069-70	**Harrying of the North –** A campaign of total destruction of the North including burning crops and killing livestock to make life impossible in the region and to prevent further rebellion.
1070-71	**Hereward the Wake and rebellion at Ely – A** rebellion by the Danish and rebel thegn Hereward the Wake in East Anglia.
1075	**Revolt of the Earls –** A rebellion against William by Norman and Anglo-Saxon Earls.
1085	William orders the Domesday Book survey to record all landholding in England and to compare land production to 1066.

Who were these people? What were these events?	
Edwin & Morcar	Edwin and Morcar were powerful Anglo-Saxon Earls. Edwin was the Earl of Northumbria from 1065-1071 and Morcar was the Earl of Mercia from 1062-71. The two brothers had fought against Harald Hardrada as the Battle of Gate Fulford in 1066. They were also part of the rebellions against William's Rule in the years 1066-71.
Robert Cumin	Supporter of William I and made Earl of Northumbria in 1069. Robert Cumin launched attacks as part of the Harrying of the North but was violently killed by a group of Northumbrians.
Roger de Breteuil	The son of a Norman who had been rewarded with the Marcher Earldom Hereford in 1066. Roger became Earl of Hereford in 1071 but resented the loss of land and privileges his father had once had and took part in the Revolt of the Earls in 1075.
Waltheof	An Anglo-Saxon and son of Lord Siward. Waltheof became Lord of Northamptonshire in 1065. After the Battle of Hastings, Waltheof was part of the rebellions in the North in 1069 and the Revolt of the Earls in 1075.
Ralph de Gael	Ralph was the son of an Anglo-Norman. He became Earl of East Anglia in 1069 and married the sister of Roger De Breteuil. He lead the Revolt of the Earls in 1075 and plotted to overthrow William I.

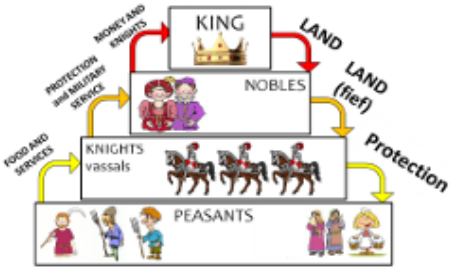
Vocabulary: define these words	
Submission	Formal acceptance of and surrender to authority.
March	An Anglo-Saxon term for border.
Colonisation	When one country encourages the migration of its people to another country.
Motte	The mound of earth that the castle stood on.
Bailey	The outer part of the castle surrounding the motte and protected by a fence or wall.
Castellan	The governor of a castle and its surrounding lands (castlery); its lord or a steward of the local lord.
Harrying	An archaic (old) word meaning to lay waste to something, to devastate it.
Genocide	A deliberate and organised attempt to exterminate an entire group of people.
Tenure	'To hold' in Latin. It is a short, but precise, way of talking about landholding and landownership.
Vassal	Someone who held their land in return for services to their Norman lord.
Reconciliation	To find ways for former enemies to forgive each other.
Magnate	The historical term for a great man, an important and influential figure.
Excommunication	Cutting off someone from the Church community so that they are unable to confess their sins before they die.

Knowledge Organiser: Norman England, 1066-88.

Following the Norman Conquest of 1066, William introduced many social, political, economic, military and religious changes to Anglo-Saxon England to secure his position on the throne.

Summarise your learning

Topic 1: The Feudal system	William I introduced a strict system of class hierarchy called Feudalism to England. This changed landholding in England and ensured all who held land were loyal to the King.
Topic 2: Lanfranc and The Church	Archbishop Lanfranc introduced many reforms to the Church of England to Normanise it and enhance the power of the King.
Topic 3: Norman Government	William I kept many of the sophisticated elements of the Anglo-Saxon government but also introduced new laws to centralise his own power.
Topic 4: Domesday Survey	William I ordered a survey of all landholding in England in order to levy taxes and raise an army.
Topic 5: Norman Aristocracy	The Norman aristocracy developed their own culture to demonstrate their wealth, power and superiority over the English.
Topic 6: William I and his sons	William I named Robert as heir despite their strained relationship, but it would be William who would become King.



Chronology: what happened on these dates?	
1070	Archbishop Stigand replaced Lanfranc as the Archbishop of Canterbury.
1082	Bishop Odo falls out of favour with William I and is imprisoned until 1087.
1085-6	Survey carried out to investigate and record landholding in England: who held what land, what taxes they owed the King and whether taxes should be raised. The results of the survey were completed by August 1086 and drafted into the Domesday Book.
9th Sept 1087	William I dies after sustaining internal injuries during a riding accident as part of a raid into France. William names Robert Curthose as heir to the Dukedom of Normandy.
Sept 1087	William Rufus crowned King of England at Westminster after showing a letter from his father to Archbishop Lanfranc which recommended him as the next King.
1088	Bishop Odo leads a rebellion against William II in support of Robert's claim to the throne but is eventually forced to surrender.





Who were these people? What were these events?	
Archbishop Stigand	The last Anglo-Saxon Archbishop of Canterbury, Stigand was appointed by Edward the Confessor in 1052 but deposed by William in 1072 and replaced by Lanfranc.
Archbishop Lanfranc	An Italian monk who replaced Archbishop Stigand as the Archbishop of Canterbury in 1072. Lanfranc was responsible for reforming the Church to strengthen Norman control of England.
Bishop Odo	William I's half brother by his mother, Herleva. Odo was a major supporter of William's invasion of England and acted as William's co-regent, where he exercised much power, until he fell out of favour with William in 1082.
Robert Curthose	The eldest son of William I and Matilda, born around 1051. Nicknamed Robert 'Curthose' for his dumpy legs, he had a strained relationship with his father who did not believe he was strong enough to rule. Robert succeeded his father as Duke of Normandy.
William Rufus	William I's favourite son, nicknamed William 'Rufus' for his red hair and cheeks. He succeeded his father as King of England after defeating the rebellion of Bishop Odo in 1088 and by sharing the rule Normandy with his brother Robert Curthose.

Vocabulary: define these words	
Barony	The lands held by a baron from the king.
Fief	Land held by a vassal in return for service to a lord.
Demesne	The land that the king or a tenant kept for his own use rather than granting it as a fief to an under-tenant.
Homage	To demonstrate allegiance to another person publically.
Labour Service	The duty to work the lord's land in return for the use of their own land.
Knight Service	The duty to provide a mounted knight to the king in exchange for a grant of land.
Forfeiture	The punishment for not providing service to the lord. Land could be confiscated or a fine would be imposed.
Domesday Book	A nationwide survey of landholdings in England.
Feudal System	The system of hierarchy in Norman society where the King held the most power.
Regent	Someone appointed to act for a king or queen when they are underage, unable to rule because illness or out of the country.
Normanisation	The act of process of making something Norman.





Measuring Development

Development measures how economically, socially, culturally or technologically advanced a country is. It suggests: advancement, evolution, expansion, growth, improvement, increase, maturity, progress, changes for the better.

Development Indicators

GNI	Gross National Income (Money earned by residents of a country including money earned abroad).
HDI	Human Development Index. Calculated using life expectancy, education, and per capita income.
Infant mortality	How many children per 1000 die before they are 1.
Literacy rate	The % of adults that read and write acceptably.

You must know advantages and disadvantages of each of these measures.

Classifying the World's Development



- An HIC has an GNI per capita of over $12,000.
- A NEE has an economy that is rapidly progressing.
- A LIC has a GNI per capita of below $800.

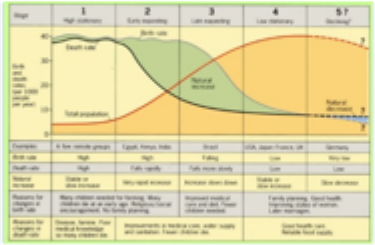
In the 1980's, Dr Brandt classified the world into the rich north and the poor south. He drew this line called the Brandt Line or the North-South Divide. However, over time countries in the south began to develop e.g. Singapore and China, and the line became outdated.

Key terms

Standard of living refers to the economic level of a person's daily life.
Quality of life is a social measure of wellbeing.

Measuring Population

The demographic transition model shows how a country's population changes as it becomes more developed, from subsistence farming cultures (LICs) to HICs.



Population pyramids change over time too – from having a lot of babies (a wide base), to good healthcare and more elderly people (a wide top).



Factors Causing Uneven Development

Physical Environment

- Soil erosion, desertification, climate (and climate change), overgrazing and infertile soils affect farming.
- Areas without fertile land, natural resources, water and energy suffer.
- Natural hazards make little progress with development e.g. Haiti.

Health

- Diseases can make people too weak to work or go to school.
- 80% of all developing world disease is water-related. 2 million die a year.
- LIC's are unable to invest in good quality health care

Trade

- Trade blocs favour member states.
- Primary products sold by LICs are sold for cheap prices that can fluctuate. HICs make more expensive products so earn more.
- Poor infrastructure or conflict means some people cannot sell their goods at all.

History

- Colonialism: Many countries in Asia, South America and Africa have spent a lot of time and money on civil wars and political struggles for power since being made separate from European superpowers.
- Many LICs haven't had time to develop fully.

Unit 2b
The Changing Economic World

AQA

Solutions to Uneven Development

TNC investment	Aid
Industrial Development	Intermediate Technology
Fair Trade	Debt Relief
Microfinance loans	Tourism

Tourism in Jamaica

Background: Jamaica is one of the largest islands in the west Indies. Population 2.7 million. Its economy is partly based on minerals, agriculture and some manufacturing. It has suffered slow growth, debt and high unemployment.

Attractions: Beach holidays with beautiful sandy beaches and clear seas. Warm sunny climate and rich cultural heritage. Jamaica is a hub for cruise ships

Positive Impacts

-Provides jobs for 200,000 people
- Helps further boosts the economy as people spend money in shops and on services
-Improves infrastructure. New port and cruise liner facilities
-Quality of life

Negative Impacts

- Not all areas improved in terms of infrastructure
-Inequality in standard of living in other parts of the island
- Mass tourism can create environmental problems

Sustainable Tourism

Sustainable tourism aims to support local communities socially and economically whilst causing no harm to the environment e.g. small-scale lodge developments employing local people and using local foods in Kenya.

UK Links

Ports

- The UK's port industry is the biggest in Europe due to our large coastline.
- There are 120 ports in the UK. Dover is the largest and Teesport is the 3rd biggest.
- 12 million people and 700,000 freight lorries travel from Dover a year.

Air

- Heathrow is the UK's busiest airport with 1 plane taking off every 45 seconds.
- 300,000 people are employed in UK aviation.
- As well as large international airports small centres e.g. Cambridge airfield allow internal flights.

Roads

- The first motorway the UK was opened in 1958.
- By 2008 there were 2,200 miles of motorways allowing rapid movement around the country.
- The A1 is the longest road in the UK and connects London and the north-east.

UK Global Links

Political



Commonwealth
- In 1922 Britain ruled over an empire of 458 million people (about 20% of the world's population and 53 countries).
- Many expats (Brits who live abroad) live in these ex-colonies.
- Many of these ex-colonies are part of the Commonwealth, choosing to keep close ties.

EU
- The UK joined the EU in 1973 with the aim of becoming part of the common market and improving trade between countries.
- The UK opted to leave in 2016. Brexit negotiations are ongoing and outcomes are unsure.
- About 50% of exports and imports are to the EU.

Other links
- The UK is a member of the G8, a group of 8 countries whose leaders meet to discuss important issues.
- The UK is a member of NATO (North Atlantic Treaty Organisation) a group of European countries and the USA. Leaders meet to keep peace.
- The UK is a member of the UN Security Council in which 15 countries meet to keep peace.

Trade



- 50% of the UK's exports go to EU countries, and 50% went to non-EU countries such as the USA and China. The USA takes the most.
- A lot of trade is now finance and communications following deindustrialisation.

Transport

- More than 750,000 international flights depart from the UK annually to 400 airports in 114 countries.
- Heathrow is the 4th busiest airport in the world.
- Eurotunnel links Britain to Europe.

Culture



- Spoken English has helped create strong links with countries.
- British exams can be sat abroad; recognised for their quality.
- UK TV productions have a global audience.
- We are a culture of immigration leading to a unique and multicultural society.

Technology

- The UK is a centre for submarine internet cables connecting the whole world.
- 18 million British businesses run from home.

Economic and Industrial Change in Nigeria

History and Landscape

- West Africa, North of the Equator
- Largest population of Africa – 184 million
- NEE – 3rd largest manufacturing economy in Africa
- Largest economy in Africa
- By 2020 should be one of the top economies
- Youthful educated population – skilled workforce for manufacturing and services



Changes in Employment Structure

- Today, 63% of people in Nigeria are employed in the tertiary sector.
- A large number of people in rural areas are still employed in the primary sector, although this sector is continuing to decrease.
- Secondary industry contributes greatly to the country's GNI.
- Increased investment in infrastructure has encouraged tourism and manufacturing.

- 60% live on less than US$1.25 a day. Growing inequality
- GDP 2006 – US$110 billion, GDP 2015 US$560 billion
- Money earned from Services 52%, Manufacturing 7%, Oil and gas 14%, Agriculture 22%, Other 5%
- Nollywood – 3rd largest film industry in the world
- 70% employed in agriculture
- Rapid increase in telecommunications and retail
- Manufacturing increasing – processed food, leather, textiles, soap, detergents

TNCs in Nigeria



- Niger delta – oil. Royal Dutch Shell, Exxon Mobil, Chevron, Total and Agip
- Platforms and pipelines installed. Oil shipped to Europe and USA to be refined. Most profit leaked
- Nigerian National Petroleum Corporation – joint ventures with TNCS
- 40 TNCS – mostly UK, Europe and USA
- Damage to wetland and coastal ecosystems which people rely on

Social issues:
- More that 50% of workers are able to afford their own home.
- Workers rights are sometimes breached in order to make greater profits.

Economic issues:
- New jobs mean more income and increased quality of life
- Oil wealth not used effectively.
- Overdependence on oil may become an issue as oil prices fall and new technology such as fracking develop

Environmental issues:
- Waste disposal - chemicals buried underground leak into water courses.

Aid to Nigeria



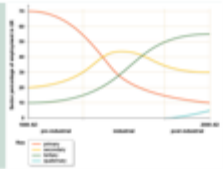
- ODA – Official Development Assistance – can be multilateral (World Bank / IMF) or bilateral (from one country)
- Voluntary aid – can be short term emergency relief or long-term development assistance
- 2009 – 2013 : 60 million mosquito nets distributed
- UK gives US$300 million year of aid
- Receives 4% of aid given to Africa
- Most successful projects are community based
- Problems include government corruption, government diverting money, donors have political influence, promoting commercial self interest

Impacts of Development in Nigeria

- Rated 152/187 countries in terms of HDI. Improving and is increasing quickly
- New jobs mean more income and increased quality of life
- Lack of access to safe water, sanitation and reliable electricity supply
- Overdependence on oil may become an issue as oil prices fall and new technology such as fracking develop
- Key challenges include continuing stable government, pollution of the Niger delta, tsetse fly affecting commercial livestock, desertification, religious conflict between north and south, Boko Harem extremist group

Economic and Industrial Change in the UK

Industrialisation took place in the UK during the 1800s. Most early manufacturing industry took place in areas with coal fields which provided energy. This was a break of bulk location, reducing transport costs.



De-industrialisation is the decline in secondary (manufacturing) industries, and the subsequent growth in tertiary and quaternary employment.

The UK has experienced de-industrialisation changing into a post-industrial economy; with more tertiary & quaternary industries. Secondary industries has moved to cheaper countries e.g. China.

Industry in the Northeast of England was characterised by heavy industry, including coal mines, iron and steel industry and ship building and petrochemicals. As raw materials were used up, and it became cheaper to produce steel and ships abroad, these heavy industries fell into decline.

The ICI plant in Middlesborough closed making 30,000 people redundant. The Easington colliery (coal mine) closed in 1993 making 1400 people in a town of 5,000 unemployed. A lack of transferable skills made it hard for these people to find jobs.



De-industrialisation has many socio-economic impacts.
High unemployment leads to the decline of services in affected areas. Reliance on benefits leads to a decline in housing quality. Life expectancy in de-industrialised areas is lower than the national average. Average GCSE grades are also lower in these areas.

Modern industrial developments in the UK

For years the UK thrived due to its secondary industries. However, it is now a post-industrial economy; one where most manufacturing jobs have been replaced by jobs in the service industries. A new sector that is growing rapidly is the quaternary industry. Quaternary jobs are those that involve highly skilled people who carry out research, provide information and give advice e.g. financial advisers, research scientists.

CAMBRIDGE SCIENCE PARK

Located to the north-east of Cambridge the site is home to over 1,500 IT and bio-technology (quaternary) companies. Location factors include closeness to a major junction of the A14 which provides rapid access to the M11, and thereafter Heathrow and London. It is on cheaper land at the edge of the city. This land is flat and there is room for expansion. The proximity to Cambridge University promotes strong working relationships and access to the best University graduates.

Toyota, Burnaston
1.5 million cars are manufactured in the UK by 7 large TNCs. Toyota are attempting to become more sustainable in a number of ways.
- They have installed 17,000 solar panels and introduced more efficient practices. They aim to reach zero carbon emissions at the plant by 2050.
- They are reducing water use, using rainwater harvesting methods and ensuring that all water used is purified before being returned to the environment.

The North-South Divide



Most areas affected by de-industrialisation are in the north and west of the UK. The areas of industrial growth tend to be in the south and west. The divide has led to social and economic differences. Unemployment in the northeast is 5.5% higher than the southeast. Average pay is £4,000 higher in the south and life expectancy is 2.5 years longer.
In attempt to reduce the differences between the north and south governments have supported a number of schemes.

HS2 / HS3
HS2 and 3 are High Speed rail links that will run from London to Birmingham, and then on to Manchester and Leeds.
Benefits - reduced travel times to the north will encourage the location of industry in the north. 100,000 jobs will be created.
Problems - The scheme will cost over £50 billion, lead to 600 homes being demolished, and 150 nature sites being affected.

Roads
£6 billion will be invested in northern roads to reduce congestion.
Benefit - This will encourage industrial location as it will reduce the cost associated with longer transport times.
Problem - We should be discouraging road use.



Other UK Transport Improvements

London Gateway
Only 30 miles from Central London. It should handle 3.5 million containers per year.
Benefit: It will reduce the need for over 2,000 lorries to collect and deliver from Southampton port.

Heathrow Expansion
Heathrow is operating at full capacity with 480,000 flights each year. A third runway, costing £20 billion will allow more flights.
Benefit - Encourage more industry to locate in the UK.
Problems - Cost, noise pollution and one village demolished.

What are Resources?

Key term	Definition
Resources	Materials that have value for people. They may be needed for basic survival e.g. water or appreciated as something that improves quality of life e.g. coffee.
Resource management	The control and monitoring of resources so they don't become depleted or exhausted.
Surplus	When there is more of a resource than is needed to meet demand.
Deficit	When there is not enough of a resource to meet demand.

Global inequalities in the supply and consumption of resources

Food



- Average UK calorie consumption is 3200 calories per person per day.
- Average calorie consumption in Mali is 2590 calories per person per day.
- Areas of greatest population growth have highest levels of undernourishment.
- Demand depends on changing diets and increasing population.
- Supply depends on climate, soil and level of technology.

Water



- Fresh water is unequally distributed.
- Water footprint is the amount of water used per day.
- Global average is 1240 litres per day
- Bangladesh is 896 litres per day; USA is 2483 litres per day.
- Water scarcity (where demand is greater than supply) can be physical e.g. reduction in rainfall or economic e.g. lack of money to enable access to water.
- 1 in 5 (more than 1.2 billion people) live in areas of water scarcity.
- 1 in 3 (2.4 billion people) have no access to clean drinking water.

Energy



- The richest 13% of people globally use 50% of the world's energy.
- The poorest 13% of people globally use 4% of the world's energy.
- Countries import and export energy.
- Some countries do not have their own sources of energy.

The significance of food, water and energy to economic and social well being

Water food and energy are key for human wellbeing. All lead to social and economic benefits, which all increase the standard of living and quality of life.

Food



- Calories provide energy.
- Availability of food depends on climate, soil and level of technology.
- Malnourishment leads to disease and death. In children it can lead to underperforming at school which decreases economic wellbeing in life. In adults they will be less productive (less able to work).
- Globally more than 1 billion people are malnourished.
- 2 billion are undernourished (poor diet).
- Obesity is an issue in some areas, mainly HICs.

Water



- Used for survival, washing, food production, industry.
- Clean, safe water enables development and allows people to break free from the cycle of poverty.
- Globally 2 billion people drink from contaminated water sources. Over 500,000 people a year die because of diarrhoeal diseases linked to contaminated water supplies.

Energy



- Traditionally we get energy from oil, coal and wood.
- Many different sources are generated by changing technology.
- Used for electricity production, heating, transport and for water supply (e.g. wells).
- Supports industrialisation and development.

Changing demand for Energy in the UK creates opportunities and challenges

The changing energy mix	UK Energy mix in 2015 : • Fossil fuels (65%) Coal 31%, Gas 25%, Nuclear 19%, Renewable sources 22%. In 1970 91% from fossil fuels. • The UK has invested in renewable energy e.g. solar energy and subsidies are given by the government.
Decreasing domestic supply of oil, coal and gas.	• Reserves of North Sea oil and gas are declining. • EU regulations on gas emissions has led to a decrease in fossil fuel use. • Energy efficient appliances and industry mean less energy is used in homes and industry.
Economic and environmental issues linked to energy use.	• It is cheaper to import coal into the UK than to mine it. • Nuclear Power Stations are being decommissioned, and all current plants will close by 2023 – there are issues of contamination and disposal of nuclear waste. • Economic issues – costs, jobs, set up costs, research, reliability. • Environmental costs – ecosystems, waste, noise, emissions, pollution, radiation leaks.

Changing demand for food in the UK creates opportunities and challenges

The growing demand for high value food exports from LICs and all year demands for seasonal food and organic produce.	• Food used to be seasonally and locally sourced. Now we eat globally sourced foods all year. • In 2013 47% of UK food was imported. • More disposable income has led to an increased demand for greater quantities and wider choice. • Not all foods can be grown the UK, and some foods can only be grown at certain times e.g. strawberries in July and August. • High quality products are five times the price of similar products e.g. Madagascan vanilla, gourmet coffee. • Positive impacts : Jobs and wages for those in LICs, more tax income leads to a better quality of life. • Negative impacts – less land for locals to farm for themselves, high water use and exposure to chemicals (pesticides and fertilisers). • Organic – no pesticides or fertilisers used. Since the 1990s there has been an increase in demand. Now worth £2 billion a year in the UK.
Larger carbon footprints due to the increased number of food miles travelled.	• Food can be grown more cheaply elsewhere. • Production and transport create a carbon footprint. • 17% of the UK's carbon footprint is due to food. • Tomatoes have less of a carbon footprint being grown in Spain and imported to the UK than if we grew them in the UK where greenhouses would have to be heated. • Annual food miles travelled by UK food imports is 18.8 billion miles. • 68% of food imported to the UK is from within the EU, 32% from the rest of the world. • UK are now encouraging buying local and having an allotment.
A trend towards agribusiness.	• Agribusiness is a farm run as a business with the main aim being profit. • Agribusiness has significant impacts on the environment as they are associated with heavy use of pesticides and fertilizers leading to reduction in wildlife and eutrophication. • East Anglia has a lot of agribusinesses.

Fracking – Opportunities and Challenges

Opportunities

- Shale gas is readily available in UK.
- Will act as a bridging fuel until alternative technologies are developed.
- Increased cost of fuel makes fracking now affordable.

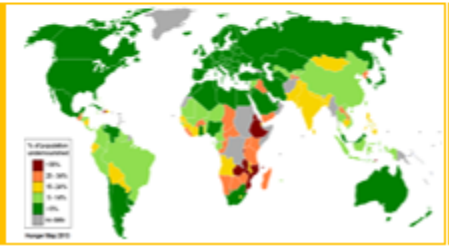
Challenges

- Contaminated water is pumped back into the ground and can affect water supplies.
- Fracking uses a lot of energy.
- 3% of gas extracted is lost to atmosphere; this is methane, a greenhouse gas.

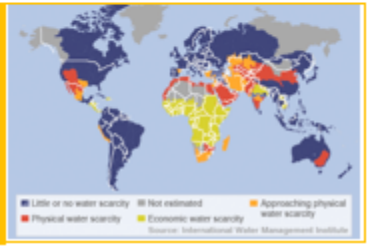
Unit 2c
The Challenge of Resource Management

AQA

Distribution of malnourishment

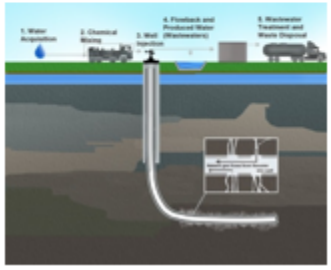


Distribution of water scarcity



Distribution of malnourishment

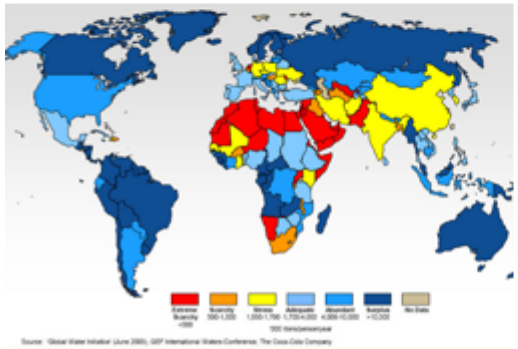




Resource Security

Key term	Definition
Water security	When the demand for water is lower than the supply of water there will be a surplus. This means that a location is water secure.
Water insecurity	When the demand for water is greater than the supply of water there will be a deficit. This means that the location is water insecure. This may also be referred to as **water scarcity.**
	Security and insecurity can be used to describe access to energy and food as well.

Global Per Capita Water Availability (2015)



Distribution
· North America, South America and Oceania have at least adequate supplies of water.
· Central Africa, northern Asia and western Europe have at least adequate supplies of water.
· Several countries in southern Asia suffer from water stress. · Most countries with extreme scarcity are in the far north of Africa and the Middle East.

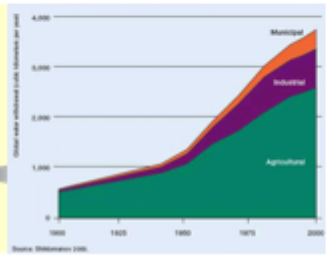
Explanation
· Areas along the equator receive high (convectional) rainfall.
· Areas between 45°N and 60°N receive high (frontal) rainfall and lower temperatures reduce evaporation.
· Extreme scarcity is associated with 30° N and S, where rainfall is low (associated with high pressure zones). Temperatures increase evaporation.

Water consumption

Rising population has been responsible for an increase in water use in all areas.

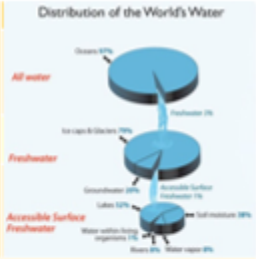
Wealthy countries use more water, associated with domestic goods, toilets and industry.

Industrial development requires water.



Water availability

- Only 3% of all the water on Earth is fresh water. The rest is saline (salt).
- Only 1% of the fresh water is readily available for use. The rest of it is stored in glaciers, and groundwater reserves.
- Fresh water is required for drinking, food production, and hygiene. In HICs it is also used for cleaning cars, watering gardens, golf courses and swimming pools,



Factors affecting water supply

Climate
· Levels of precipitation are affected by global circulation (if air is rising or falling) and proximity (closeness) to the sea.
· Areas with higher rates of precipitation are likely to have a higher supply.

Geology
· High infiltration of water (where water soaks into the soil) in places such as deserts means that water is not stored on the surfaces in lakes so is not able to be used by people easily.
· Percolation of water (water soaking into the bedrock) leads to water storage in permeable rock (aquifers).

Pollution of supply
· Waste from industry causes pollution of water supplies. This may affect places a long way from the source of pollution.
· HICs have laws preventing pollution of water supplies. Even if laws exist in LICs they are not always enforced.
· Where sanitation is poor, human waste enters rivers and lakes. This can cause a rapid spread of cholera and typhoid.

Over-abstraction
· When water is pumped from the ground at a rate which is faster than it recharges (fills again due to precipitation percolation) the ground water level drops and wells dry up.

Limited infrastructure
· LICs have limited money to provide the infrastructure needed for water (pumping stations and pipes). This is a particular problem in rural areas.

Poverty
· Nearly one billion people do not have access to clean, safe water; 1/8th of the population.
·If people do not have money, they are not able to buy clean water or filtration systems, this means they often have to walk for miles to collect water from unsafe sources.
· Unclean water leads to higher rates of illness and less time available for children to go to school and adults to work.
· An inability to work or become educated means that people cannot afford clean water. This becomes a vicious cycle.

Impacts of water insecurity

Water pollution
Too many chemicals from agriculture and industrial waste. Lack of water prevents chemicals being flushed away. Poor quality water affects aquatic ecosystem e.g. eutrophication.



Waterborne diseases
Chemicals, raw sewage, manufacturing waste, human and animal remains end up in the water supply. With limited flow the river can't remove it quick enough, and it becomes unfit for human consumption. Dirty water leads to waterborne diseases e.g. cholera, dysentery, typhoid.

Food production
Most agriculture relies on irrigation to maintain high crop yields. If there is insufficient water of a high quality, then crops can't be grown. Safe water is needed for livestock. Reduced yields can lead to social and economic issues.

Industrial output
Water is needed for cooling and other industrial processes. If less water is available, or the cost of water increases, the profitability of industry decreases.

Coal, gas and nuclear power need large quantities of water. Water insecurity can affect energy supplies.

Conflict
When water is limited it becomes a valuable commodity. International competition can lead to tension or even "water wars". Tensions are inevitable in large river basins which are shared by two or more countries e.g. India and Bangladesh share the Ganges.

Strategies to increase water supply

Diverting supplies - Rainwater can be used to recharge aquifers. This helps support a clean supply of water that has been filtered by percolation.

Dams and reservoirs - Damming a river allows water to be stored in a reservoir and controls river flow. This is a long-term solution, but very expensive.

Water transfer - Water from areas of surplus is transferred to areas of deficit through canals and pipes. The infrastructure required can be expensive and areas that previously had a surplus may go into deficit.

Desalination - saline (salt) water is taken from the sea. This passes through a desalination plant to create fresh water. Water supplies cannot run out, but it uses a lot of energy and is expensive.

A local scheme to increase sustainable water supplies

WaterAid in Mali

· WaterAid is an NGO that relies on charity.
· They provide small scale schemes, in Mali, using appropriate technology, to provide clean water, sanitation and hygiene education.

Clean water in villages:
· Improves health.
· Improves productivity.
· Improves education opportunities.
· Reduces time used in water collection.
· Increases crop yields.

Sustainable water management

Water conservation - Using less water. The use of more efficient white goods and toilets reduces water use. Water meters charge for the water used.

Groundwater management - water can become polluted by fracking and mining. Governments can safeguard groundwater by creating protection zones.

Grey water / Water recycling - Water that has either been lightly used (e.g. shower water or sink water) or it is untreated rainwater. After filtering it can be used for toilet flushes.

A large-scale water transfer scheme

South-North Water Transfer Project, China

The scheme will transfer 45 billion cubic meters of water a year from the Yangtze River in the south to the Yellow River basin in the arid (dry) north.

· 53 million people in the north benefit from access to better water supplies.
· Agricultural yields have improved.
· Water can be used for industry.



· Cost $62 billion.
· 330,000 people were relocated because of the project.
· Water loss is high due to evaporation from open channels.
· Vast amounts of concrete have been used.

Level 1/2 Hospitality and Catering: Unit 2-2.1.1 -
Understanding the importance of nutrition

The importance of nutrition

Listed below are the macro-nutrients and micro-nutrients. You need to know their function in the body and know examples of food items for each. You need to know why they are needed in the diet and why there is a need for a balanced/varied diet.

Macro-nutrients

Carbohydrates - Carbohydrates are mainly used in the body for energy. There are two types of carbohydrates which are:

- **Starch** - Examples include bread, pasta, rice, potatoes and cereals.
- **Sugar** - Examples include sweets, cakes, biscuits & fizzy drinks.

Fat - This is needed to insulate the body, for energy, to protect bones and arteries from physical damage and provides fat soluble vitamins. There are two main types of fat which are:

- **Saturated fat** - Examples include butter, lard, meat and cheese.
- **Unsaturated fat** - Examples include avocados, plant oils such as sunflower oil, seeds and oily fish.

Protein - Protein is mainly used for growth and repair in the body and cell maintenance. There are two types of protein which are:

- **High biological value (HBV) protein** - Includes meat, fish, poultry, eggs, milk, cheese, yogurt, soya and quinoa.
- **Low biological value (LBV) protein** - Includes cereals, nuts, seeds and pulses.

Micro-nutrients

Vitamins

- **Fat soluble vitamin A** - Main functions include keeping the skin healthy, helps vision in weak light and helps children grow. Examples include leafy vegetables, eggs, oily fish and orange/yellow fruits.
- **Fat soluble vitamin D** - The main function of this micro-nutrient is to help the body absorb calcium during digestion. Examples include eggs, oily fish, fortified cereals and margarine.
- **Water soluble vitamin B group** - Helps absorbs minerals in the body, release energy from nutrients and helps to create red blood cells. Examples include wholegrain foods, milk and eggs.
- **Water soluble vitamin C** - Helps absorb iron in the body during digestion, supports the immune system and helps support connective tissue in the body which bind cells in the body together. Examples include citrus fruits, kiwi fruit, cabbage, broccoli, potatoes and liver.

Minerals

- **Calcium** - Needed for strengthening teeth and bones. Examples include dairy products, soya and green leafy vegetables.
- **Iron** - To make haemoglobin in red blood cells to carry oxygen around the body. Examples include nuts, beans, red meat and green leafy vegetables.
- **Sodium** - Controls how much water is in the body and helps with the function of nerves and muscles. Examples include salt, processed foods and cured meats.
- **Potassium** - Helps the heart muscle to work correctly and regulates the balance of fluid in the body. Examples include bananas, broccoli, parsnips, beans, nuts and fish.
- **Magnesium** - Helps convert food into energy. Examples include wholemeal bread, nuts and spinach.
- **Dietary fibre (NSP)** - Helps digestion and prevents constipation. Examples include wholegrain foods (wholemeal pasta, bread and cereals), brown rice, lentils, beans and pulses.
- **Water** - Helps control temperature of the body, helps get rid of waste products from the body and prevents dehydration. Foods that contain water naturally include fruits and vegetables, milk and eggs.

Level 1/2 Hospitality and Catering: Unit 2-2.1.1 -
Nutrition at different life stages & special dietary needs

Nutrition at different life-stages

Adults:

- **Early** – Growth in regard to height of the body continues to develop until 21 years of age. Therefore, all micro-nutrients and macro-nutrients especially carbohydrates, protein, fats, vitamins, calcium and iron are needed for strength, to avoid diseases and to maintain being healthy.
- **Middle** – The metabolic rate starts to slow down at this stage, and it is very easy to gain weight if the energy intake is unbalanced and there isn't enough physical activity.
- **Elderly** – The body's systems start to slow down with age and a risk of blood pressure can increase as well as decrease in appetite, vision and long-term memory. Because of this, it is essential to keep the body strong and free from disease by continuing to eat a healthy, balanced diet.

Children:

- **Babies** – All nutrients are essential and important in babies, especially protein as growth and development of the body is very quick at this stage. Vitamins and minerals are also important. You should try to limit the amount of salt and free sugars in the diet.
- **Toddlers** – All nutrients remain very important in the diet at this stage as growth remains. A variety of foods are needed for toddlers to have all the micro-nutrients and macro-nutrients the body needs to develop.
- **Teenagers** – The body grows at a fast pace at different times at this stage as the body develops from a child to an adult, therefore all nutrients are essential within proportions. Girls start their menstruation which can sometimes lead to anaemia due to not having enough iron in the body.

Special Dietary needs

Different energy requirements based on:

- Lifestyles / Occupation / Age / Activity level

The amount of energy the body needs is determined with each of the above factors e.g. active lifestyle or physical activity level would need more energy compared to a person being sedentary.

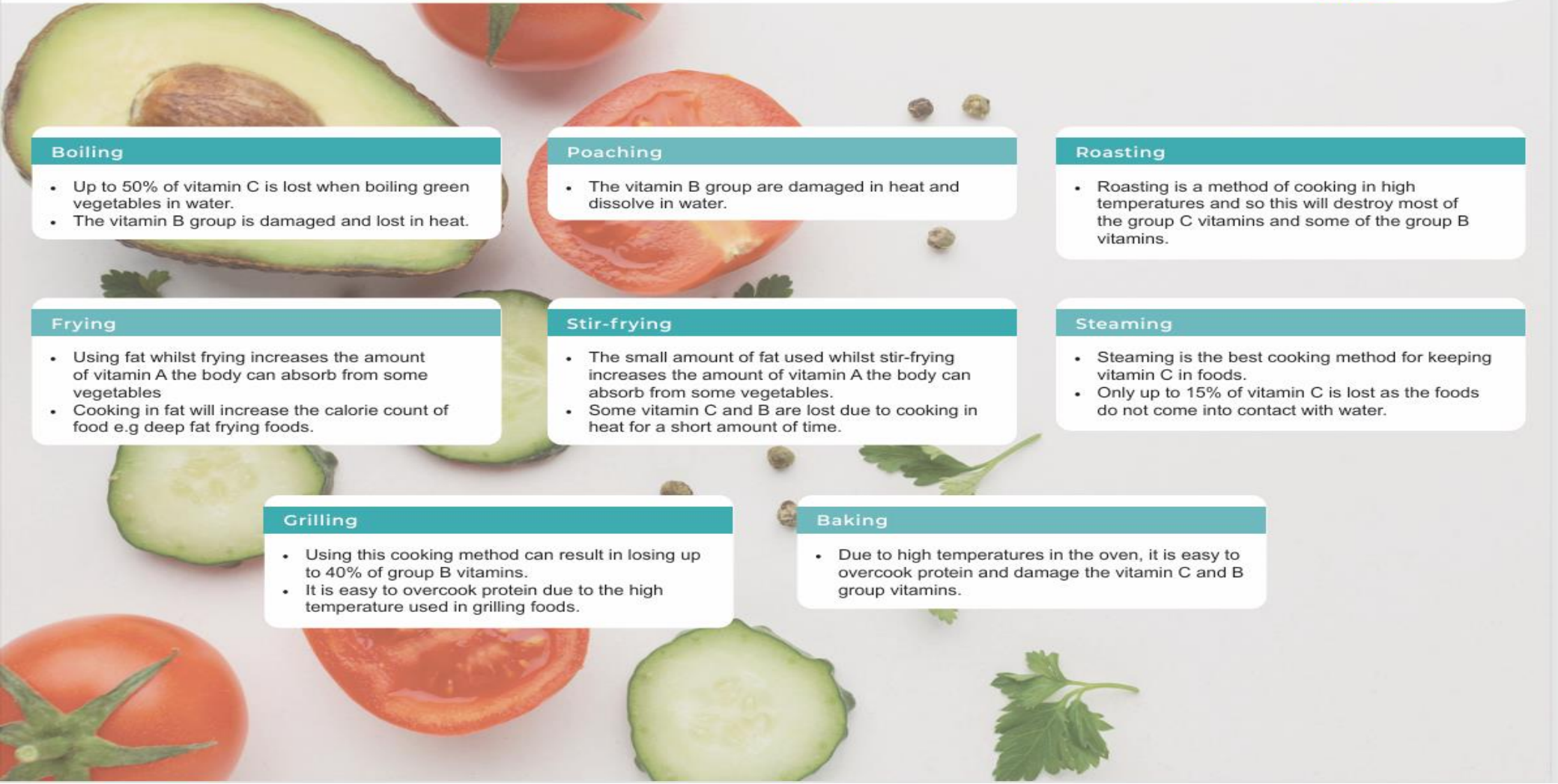
Medical conditions:

- **Allergens** – Examples of food allergies include milk, eggs, nuts and seafood.
- **Lactose intolerance** – Unable to digest lactose which is mainly found in milk and dairy products.
- **Gluten intolerance** – Follows a gluten free diet and eats alternatives to food containing wheat, barley and rye.
- **Diabetes (Type 2)** – High level of glucose in the blood, therefore changes include reducing the amount of fat, salt and sugar in the diet.
- **Cardiovascular disorder** – Needing a balanced, healthy diet with low levels of salt, sugar and fat.
- **Iron deficiency** – Needing to eat more dark green leafy vegetables, fortified cereals and dried fruit.

Dietary requirements:

- **Religious beliefs** – Different religions have different dietary requirements.
- **Vegetarian** – Avoids eating meats and fish but does eat dairy products and protein alternatives such as quorn and tofu.
- **Vegan** – Avoids all animal foods and products but can eat all plant-based foods and protein alternatives such as tofu and tempeh.
- **Pescatarian** – Follows a vegetarian diet but does eat fish products and seafood.

Level 1/2 Hospitality and Catering: Unit 2-2.1.2 -
How cooking methods can impact on nutritional value



Boiling

- Up to 50% of vitamin C is lost when boiling green vegetables in water.
- The vitamin B group are damaged and lost in heat.

Poaching

- The vitamin B group are damaged in heat and dissolve in water.

Roasting

- Roasting is a method of cooking in high temperatures and so this will destroy most of the group C vitamins and some of the group B vitamins.

Frying

- Using fat whilst frying increases the amount of vitamin A the body can absorb from some vegetables
- Cooking in fat will increase the calorie count of food e.g deep fat frying foods.

Stir-frying

- The small amount of fat used whilst stir-frying increases the amount of vitamin A the body can absorb from some vegetables.
- Some vitamin C and B are lost due to cooking in heat for a short amount of time.

Steaming

- Steaming is the best cooking method for keeping vitamin C in foods.
- Only up to 15% of vitamin C is lost as the foods do not come into contact with water.

Grilling

- Using this cooking method can result in losing up to 40% of group B vitamins.
- It is easy to overcook protein due to the high temperature used in grilling foods.

Baking

- Due to high temperatures in the oven, it is easy to overcook protein and damage the vitamin C and B group vitamins.

Level 1/2 Hospitality and Catering – Unit 2-2.2.2:
How to plan production

You need to be able to plan dishes for a menu as well as know, understand and include the following:

Commodity list with quantities
This means naming all the ingredients needed to make all dishes and how much of each one e.g. grams (g), ounces (oz), millilitres (ml), etc.

Contingencies
This means stating, in the plan, what you would do to deal with a problem if something were to go wrong.

Equipment list
Naming all pieces of equipment you would need to cook the dishes, which also includes specialist equipment such as pasta machines and ice cream makers as well as saucepans, chopping boards, knives, etc.

Health, safety and hygiene
Stating in the plan, points regarding the health, safety and hygiene. The use of temperature probes to ensure foods are cooked, correctly using colour coded chopping boards or washing hands after handling raw meat are a few examples.

Quality points
These include naming any quality points to consider in the preparation, cooking and serving stage of the plan. Examples could include checking foods are in use by/best before dates, dishes are cooked to minimum temperatures, ingredients stored in correct places and correct temperature, etc.

Sequencing or dovetailing
This means you fit together the different steps and activities in logical order when planning to cook more than one dish.

Timing
You need to state realistic timings of how long each step is likely to take throughout your plan to give accurate information of how long your dishes take to complete.

Mise en place
This is all the preparation you undertake before cooking. Examples of this include weighing out ingredients, collecting equipment and washing hands.

Cooking
Throughout your plan, you will need to state how you ensure food is cooked correctly, e.g. chicken is white in the middle, using a temperature probe, etc.

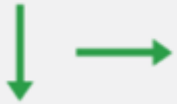
Cooling and hot holding
Cooling dishes correctly within 1.5hrs to 8 degrees and keeping hot dishes for service at 63 degrees should be mentioned in your plan for relevant dishes, as well as how you would ensure these temperatures are met, e.g. by using temperature probes.

Serving
Once you have finished cooking your dish or dishes, you need to state how you would present your dish/dishes, e.g. on plate, bowl, etc., as well as what decoration, garnishes and sauces you include before serving.

Storage
In your plan, you should state where different kinds of ingredients need to be stored, e.g. raw chicken in the fridge or frozen fruit in the freezer and at what temperatures these pieces of equipment need to be (fridge needs to be 0–5 degrees and freezer needs to be -18 degrees).

Year 11 Computer Science

Common flowchart symbols

Symbol	Name	Usage
	Line	Represents the flow from one component to the next
Process	Process	An action
Input/Output	Input/Output	An input or output
Decision	Decision	A yes/no/true/false decision
Start/Stop	Terminal	The start or end of the process

Selective Algorithm

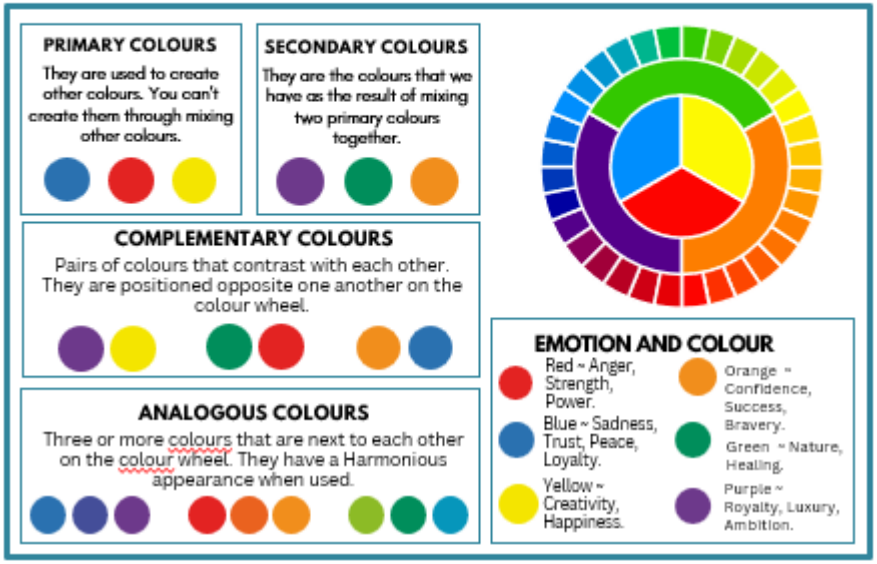
main.py ×

```
1  import turtle
2  Terry = turtle.Turtle()
3  Terry.color("Red")
4  Terry.shape("turtle")
5  Terry.speed(10)
6
7  shape = input("What shape would you like
8  if shape == "square":
9      for i in range(4):
10         Terry.forward(120)
11         Terry.right(90)
12 elif shape == "triangle":
13     for i in range(3):
14         Terry.forward(120)
15         Terry.right(120)
16 else:
17     for i in range(360):
18         Terry.forward(1)
19         Terry.right(1)
20         #Terry draws circles really slowly!
```

Art: Annotations

Checklist

What have you done? what techniques or materials have you used?
Why did you do this? what are you trying to achieve?
Do you think this was successful?
Do you think this Is unsuccessful? If so, why and what could you change or do differently?
What have you learnt from this? how can this Inform your next piece of work?
How would the work be different If you used different media?
How does this relate to the artist/ theme/Brief?



Sentence Starters

This is an observational drawing that I created of a ...
This is a series of photographs I took ...
This is a response to the artist ...
I looked at the artist's use of ...

I drew this using ...
I painted this image with ... I looked carefully at ...
I constructed this from ...
I built layers by using collage materials like ...
I drew directly from life the ... observing the ...

I have learnt about ...
By doing this experiment I have learnt ...
I began by ...
I have discovered ...
I improved my skills in ...
I feel more confident about ...
To build upon this idea I will ...
Next time I will try ...
In my opinion ...
I like how I have edited this image because ...

Final Checklist

- Used full sentences?
- Fully described the photograph?
- Said **HOW** and **WHY** you have created/ chose the image?
- Used Key Vocabulary?

Tints, Tones and Shades

In painting, everything has a colour. The word hue is used to describe a colour or the shade of a colour.

Tint

A tint is a colour mixed with white. The more white paint that is added to the original colour, the lighter the tint. A tint can range from slightly lighter than the original colour, to almost white. When mixing a tint, begin with the pure colour and add white paint a tiny bit at a time.



tints of red

Tone

A tone is a colour mixed with grey. Tones are less vibrant than the original colour. Using a tonal colour in a painting balances other intense colours and bright hues. When mixing a tone, begin with the pure colour and add grey paint a tiny bit at a time.



tones of red

How to mix Tints, Shades and Tones

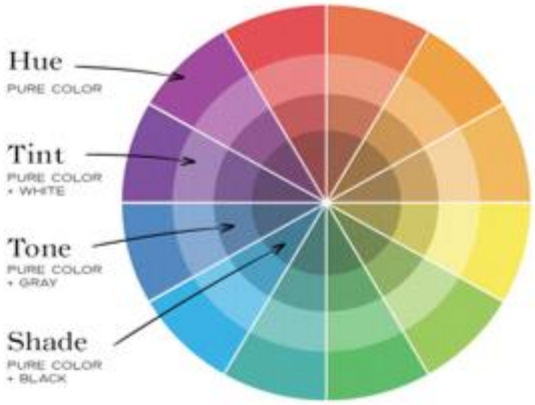


Shade

A shade is a colour mixed with black. The more black paint that is added to the original colour, the darker the shade. A shade can range from slightly darker than the original colour, to nearly black. When mixing a shade, begin with the pure colour and add black paint a tiny bit at a time.



shades of red



Oil Pastel Bone Study



Art: Artist Annotations

ANALYSING GRAPHC ARTIST WORK	ANALYSIS SENTENCE STARTERS	FORMAL ELEMENTS	PROVIDING EXAMPLES
Answer these questions to describe one image in detail.	**You could use any of these to begin describing.**	**Use these points in your descriptions.**	**Add more information by using these.**
What do you see? What materials have been used? What is the composition? Why have they used this composition? Do they use line, pattern, texture, tone, flat colour? How do they use this? What colours have been used? Why have they used these colours? How does this work link to your own work: ie use of colours, patterns, subject matter, objects used, composition? How will you use their ideas in your own work?	My first impressions of this piece are ... This artwork is about ... In this piece I can see ... I think the artist chose to use this media because ... I think the artist used... to show... The element of this image I find interesting is the artist's use of ... This piece makes me feel... I like ... I could use ... within my own work by ...	*Shape* Area enclosed by lines. Shapes can be outlines or shaded in. *Form* Three-Dimensional shape. *Texture* Is it smooth, rough or bumpy? *Pattern* A design that is repeated *Line* Can be bold, delicate, organic, controlled, free, thick, thin or loose. *Colour* Primary, Secondary, Tertiary. complementary, analogous, value. Can be used to create emotion. *Tone* Refers to Light and Dark.	For example ... Such as ... Which can be seen ... One way this is shown is... I have used this in my own work by ... I developed this idea further by ... This is shown in my experiment where I ... **CONNECTING POINTS** Additionally Similarly Also However Although On the other hand Alternatively

Badminton Year 11

Glossary of key terms for this unit:

- **Net Shot -** Shot hit from the fore court clearing the net and then falling rapidly
- **Officiating -** The process of overseeing the game and ensuring all of the rules and regulations are adhered by
- **Let -** A let is played by the umpire when something (usually distracting) happens and is beyond their control on court.
- **Shot tactics -** This is the process of building up a sequence of shots in order to set yourself up for an attacking shot
- **Anticipation -** In badminton this is the ability to quickly and accurately predict the outcome of your opponents shot and set yourself up for the return.

Tactics and strategies

Movement pressure - force your opponent move around around court by hitting the shuttle in different directions

Central base - return to the middle of the court after each shot to be ready for the next one

Hit the corners - aim for the corners of the court to make it difficult for your opponent

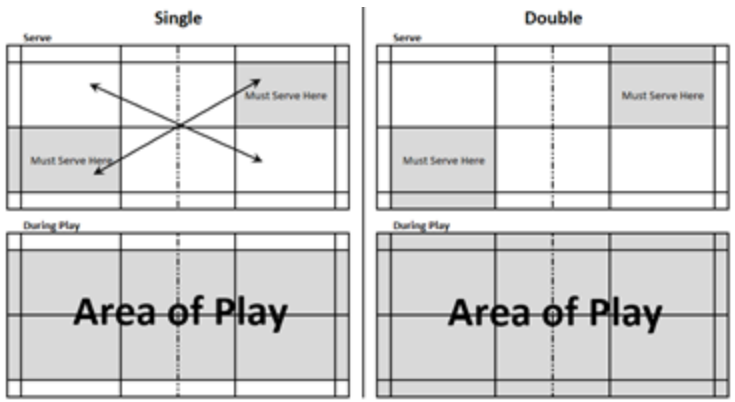
Building shots - Before trying to win the rally, try to gain an advantage

Winning shots - Aim to hit winning shots by aiming the shuttle towards the floor at speed

Use deception - By pretending to hit the shuttle in one directions or softer than the opponent anticipates

Officiating

The **umpire** must enforce all **badminton** rules on the court. The **umpire** makes rules calls regarding service faults, other player faults or lets. The **umpire** announces the match's score to the players throughout the match.



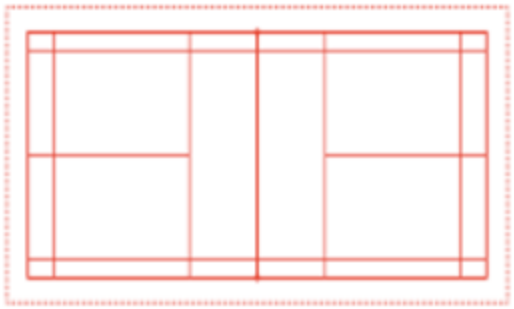
Components of fitness

Agility - Badminton players with need to change direction quickly without losing balance in order to reach the shuttle in time

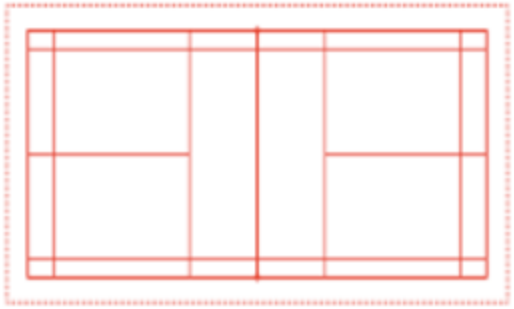
Coordination - It is important in order to successfully connect the racket with the shuttle in order to accurately place your shots

Reaction Time - Is important in badminton in order to respond quickly to the direction of the shuttle and get into a position to play the return shot

Identify on the image below where you are allowed the shuttle to land during a serve in singles?



Identify on the image below where you are
c
s



Identify three tactics you could use in order to win a point during game play;

Reason 1 -

Reason 2 -

Reason 3 -

Explain what is meant by the term anticipation' in badminton?

Knowledge Organiser: Year 9

Badminton

Name 3 components of fitness which are important for badminton players. Also state the definition definition of these components.

1.

2.

3.

OCR Sport Studies Knowledge Organiser

R184 TA1 Understand the issues which affect participation in Sport.

User Groups

People from different ethnic groups
A group within a community which have different national or cultural traditions from the main population
Retired people/people over 60
A person who has retired from working or a professional career/over the age of 60.
Gender
sometimes different genders have different needs, goals and requirements for sport
Families with young children
A group of one or more parents and their children living together as a unit.
Carers
Adults or children, caring for relatives, elderly, parents or siblings.
Young children
Ayoung human from birth to the end of primary school
Teenagers
A person aged between 13-19.
People with disabilities
A person with a physical/mental condition that may limit movement,senses or everyday activities (not just wheelchair users)
People with family commitments
A person who needs to do certain tasks for family.
Parents (singles or couples)
A person/people bringing up a child/children with or without a partner.
People who work
A person who works/has a professional career.
Unemployed/economically disadvantaged people
A person/people living in a less favourable social and economic circumstance.

Barriers to participation

- Lack of positive sporting role models - Lack of equal coverage in media in terms of gender & ethnicity by the media - Negative portrayal by the media	- Employment and unemployment - Lack of leisure time - Lack of disposable income	- Family commitments - Lack of childcare - Lack of positive family role models or family support	- Lack of transport - Lack of specialist equipment - Lack of appropriate activity/ awareness of provision

Possible solutions to the barriers which affect participation in sport

Provision strategies
- Appropriate programmes/sessions /activities
- Times for the different user groups

Promotion strategies:
- Use of targeted promotion
- Promotion using role models
- Initiatives (free/reduced costs)
- Inclusive schemes to get into sport

Access strategies:
- Increased and appropriate transport availability (free/car share)
- Availability of appropriate user group facilities and equipment (provide free equipment)
- Improved access to facilities for all user groups
- Appropriate pricing for all user groups (sensible pricing/concessions)

Factors that affect popularity of sport

Participation- Number of people participating in the sport compared to other sports. E.g football compared to hockey.
Acceptability -How people view the sport is it cruel/violent as people may be less likely to participate. E.g horse racing/boxing.
Media coverage- Not all sports have live, catch up sport views, coverage changes for different sports. E.g. football gets more live coverage than badminton.
Provision- certain types of sports have more available clubs than others. E.g more football clubs than basketball.
Environmental conditions - Specific environmental conditions needed for some sport. E.g. skiing requires snow/ mountainous terrain.
Role models- Performers who are positive in the media. E.g Marcus Rashford.
Success- Performers whose success has increased the popularity for their sport. E.g female football
Spectatorship opportunities-certain types of sports activities available for both watching and participating in sporting activities. E.g rugby.

Emerging sports in the UK

Korfball	Ultimate Frisbee	American Football
Futsal	Paddleball/Pickleball	Crossfit

OCR Sport Studies Knowledge Organiser: R184 TA2 The role of sport in promoting values

Sporting values that can be promoted through sport

Team Spirit working together to achieve the same goal E.g working together as a team to win a trophy.
Excellence Striving to be the best you can be. E.g. beating a personal best or representing your country.
National Pride A feeling of being united when watching/representing your country. E.g. wearing your country's strip to support.
Tolerance/Respect An understanding of different countries and cultures through sport. E.g shaking hands with opposition or calling the referee sir in rugby.
Fair Play The importance of adhering to rules and not cheating. E.g. helping up the opposition if they are injured.
Inclusion Initiatives/sessions aimed at giving equal opportunities to everyone to play sport. E.g wheelchair basketball, blind football, women only sessions.
Citizenship Taking an opportunity to get involved in the local community. E.g. helping at a local football club.

Local/Regional/National Sports Initiatives

Gallaghers Premier Rugby- Project Rugby (Local)
England Netball- Open Active (Local)
England Cricket Board-Chance to shine (regional)
FIFA- Football for hope (regional, 6 bases in UK)
UEFA-#Real scars (national)
Sport England- Sport Relief (national)
Sport England- This girl can (national)
England Basketball- Projectswish (national)

The Olympic Creed

"The most important thing in the Olympic Games is not to win but to take part, just as the most important thing in life is not the triumph but the struggle. The essential thing is not to have conquered but to have fought well."

Sporting etiquette and behaviour

Observing etiquette and sporting behaviour such as fairness, the safety of fellow participants or the reinforcement of positive sporting values.

Sportsmanship - playing within the spirit of sport should be reinforced when participating.
E.g. shaking hands with the opponent after the match
E.g kicking the ball out in football when a player is injured
E.g promoting tolerance and respect by trying to avoid disagreements/tension with the opposition

Spectator etiquette - spectators have a responsibility to each other and the players to view the action in a manner that does not jeopardise fellow spectators or players.
E.g Being quiet when a point is being played in tennis
E.g Being quiet when the kicker is kicking in rugby
E.g.Applauding fair play within a match.

The Olympic symbol

The 5 interlocking rings represent the closeness between the 5 continents
5 interlocking rings represent the closeness between the five continents

Olympic Values

Respect- This includes respect for yourself and your body, for other people, for rules and regulations, for sport and for the environment
Excellence- Giving your best, not only in sport but in life, and achieving your goals.
Friendship- Understanding each other through sport even though there may be differences.

Paralympic Values

Determination- The drive and motivation to overcome both physical and mental barriers in order to achieve your goals.
Inspiration- To be motivated by the achievements and actions of others and to be a positive example to others.
Courage- Having the self-belief and confidence to show what can be achieved when testing your body to the absolute limits.
Equality- Showing respect towards all those around you by being inclusive and breaking down social barriers and discrimination towards people with disabilities.

Component 2: Health and Social Care Services and Values Knowledge Organiser

Challenging texts



Scan the QR code for the specification document

Topic Content:

- You will learn a range of health and social care services, any barriers individuals face accessing them and how they can be overcome.
- You will learn about the skills, attributes and values required to give care.

Learning Objectives

A – Understand the different types of health and social care services and barriers to accessing them.
B – Understanding the skills, attributes and values required to give care.

LAA – Understand the different types of health and social care services and barriers to accessing them.

Health Conditions –

Type 2 Diabetes
- The Sugar levels (glucose) in the blood become too high (7 mmol/l +)
- Symptoms include – headaches, thirst, urinating a lot, blurred vision/tiredness

Arthritis
- Affects the joints.
- Symptoms include stiffness in joints, swelling around the joint, pain/tenderness, warmth around the joint.

Coronary Heart disease
- When fatty substances build up in the coronary arteries making them narrower and restricting blood flow to the heart.
- Symptoms include chest pain, feeling dizzy, nausea (sick) and shortness of breath

Dementia
- Reduced brain function resulting in memory loss.
- Symptoms include understanding and processing difficulties, difficulties in speech, loss of independence etc. these progressively get worse.
- 1 in 14 people over 65 have dementia

Cerebral Vascular Accident
- Interrupted flow of blood to the brain caused by either a stroke or brain injury.

Obesity
- Someone with a high level of body fat.

Asthma
- A chronic life threatening condition which affects the lungs.
- Symptoms include breathlessness, wheezing and coughing.

Chronic Obstructive Pulmonary Disease
- An inflammation of the lungs which obstructs (reduces) airflow.
- Symptoms include breathlessness, chesty cough, wheezing, frequent chest infections and tiredness.

Additional Needs - Extra support needed to ensure good standard of living and quality of life.

Sensory Impairment –
- Vision/Hearing difficulties which significantly impact communication and well-being.

Learning Disability
- Less able to understand complex information and learn new skills.

Physical Disability
- "A limitation on a persons' functioning, mobility, dexterity or stamina that has a substantial and long-term negative effect on an individual's ability to do normal daily activities" – ***Equality Act 2010***

Primary Care – First point of contact with the NHS. e.g. GPs, Walk-in Centres, Dentist etc.

Secondary Care – When you need more can than a primary service can provide. E.g. Cardiology, Endocrinology – they usually support diagnosis and treatment.

Tertiary Care - Advanced specialists who are highly skilled and experiences. E.g. complex surgeries i.e. Brain, etc.

Allied Health Professionals- They support people who are experiencing both mental and physical health problems. They must be registered with the Health and Care Professions Council (HCPC) e.g. Paramedics, dieticians, Art Therapists, Speech and Language Therapists etc.

Services for children and young people.

Foster Care – provides a safe environment for children who for whatever reasons can't be at home with their family. Can be short-term or long-term.

Residential Care – best for people with complex needs – provides high quality care.

Youth Work – Supports young people between 11-25. Helps with personal and social development.

Key terms –

Formal Support
Informal Support
Type 2 Diabetes
Arthritis
Coronary Heart Disease
Dementia
Cerebral vascular accident
Obesity
Asthma
Chronic Obstructive
Pulmonary Disease
Primary Care
Secondary Care
Tertiary Care
Allied Health Professionals
Respite Care
Domiciliary Care
Residential Care
Informal Carers
6 C's

Types of Care.

Respite – Short term care which provides relief to families who provide full time care. This can be at home or in a residential care home.
Residential – Living in a setting instead of your home. Accommodation, Laundry and meals are all provided. Staff are specifically trained to support individuals 24 hours a day.
Domiciliary – Care workers visiting the home of an individual to support them with daily living e.g. Personal Care.

Informal Social Care

Informal Carer – family or friends.
Charities - Voluntary organisations that support individuals and their families e.g.. Homestart.
Faith-based groups – Supporting Individuals who share religious or Spiritual beliefs e.g. Islamic relief.
Community groups – Support within the community. E.g. Food banks

Component 2: Health and Social Care Services and Values Knowledge Organiser

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Barriers – stop people being able to access a service. Meaning people miss appointments, treatments and support.

Barriers to accessing Services	Overcoming Barriers
Physical – something that stops someone physically accessing the service they need. E.g. Stairs into a GP surgery	Special adaptations which enable someone to access the service they need e.g. wider corridors to allow wheelchair access.
Sensory Barriers – something which reduces a persons' ability to access a service due to a sensory impairment. E.g. not being able to hear what is happening around you due to a deterioration in hearing.	Adaptions put in place to support sensory barriers e.g. large print for sight impairments.
Cultural barriers – something which reduced a persons' ability to access a service due to cultural beliefs, practices and needs. E.g. worrying they will be judged or not taken seriously because of their beliefs.	Proper training and collaborative approaches to understand cultures and beliefs to ensure that a persons' wishes/needs are fulfilled e.g. enabling a Muslim to pray regularly during the day in a quiet and private setting in a hospital.
Language Barriers – something which reduces a person's ability to access a service due to not understanding the words or language used. E.g. having English not as a first language.	Having adapted leaflets, translators etc to enable someone to access the information they need.
Geographical Barriers – Being unable to access a service due to location e.g. poor public transport in a village making it difficult to get to the local GP surgery.	Providing serviced which allow someone to access the service e.g. Phone Consultations with GP. Home visits.
Learning disabilities – being unable to fully understand complex information and make an informed decision without support.	Ensuring that adequate support is given to ensure that someone with a learning disability is supported to ensure that they are able to fully understand/make decisions e.g. Communication cards to help someone express emotions and preferences
Financial Barriers – Being unable to access a service due to money. E.g. not being able to afford care/therapies that will aid their condition.	Some charities and Local Authority provision can be put in place/claimed to help assist with reducing the financial burden that can be created.

LAB - Understanding the skills, attributes and values required to give care.

Skills and Attributes in Health and Social Care

- ✓ **Problem Solving**
- ✓ **Observation**
- ✓ **Dealing with difficult situations**
- ✓ **Organisation**
- ✓ **Empathy**
- ✓ **Patience**
- ✓ **Trustworthiness**
- ✓ **Honesty**

Values in Health and Social Care

Value	Definition
Communication	The exchange of information between two people that helps to provide care and support.
Care	Looking after and providing for the needs of a person.
Compassion	Working with empathy, respect, and dignity.
Competence	Skills and knowledge to understand a person's needs and to deliver effective care, based on research.
Courage	Doing the right thing for the people being cared for and speaking up when concerns arise.
Commitment	A determination to improve the quality of care.

Obstacles that individuals face

- Lack of motivation
- Self-esteem issues]
- Stress
- Previous bad experiences
- Anxiety
- Lack of support
- Time constraints
- Unachievable targets
- Lack of resources
- Disability
- Health Conditions
- Addiction

Benefits of skills, attributes and values.

- High quality care
- Person-Centred Care
- Respect
- Independence
- Involvement in care decisions
- Not discriminated against
- Protected from harm
- Able to raise complaints
- Protected dignity and privacy
- Rights promoted
- Confidentiality maintained

Voudrais-tu voyager? (pages 106–107)

Pourquoi voudrais-tu voyager?	*Why do you want to travel?*
Je voudrais / J'**aimerais** voyager pour ...	*I would like to travel to ...*
me reposer.	*relax.*
me faire de nouveaux amis.	*make new friends.*
découvrir une nouvelle culture.	*discover a new culture.*
sortir de la *routine.	*escape the routine.*
apprendre une nouvelle langue / un nouveau sport.	*learn a new language / sport.*
Ce **serait** (très) agréable.	*It would be (very) nice.*
Où voudrais-tu passer tes vacances?	*Where would you like to spend your holiday?*
Je voudrais passer mes vacances au camping / à l'hôtel / à la maison / dans le village.	*I would like to spend my holiday at a campsite / at a hotel / at home / in the village.*
C'est où?	*Where is it?*
C'est à 5 minutes de la côte.	*It is 5 minutes from the coast.*
Qu'est-ce que c'est?	*What is it?*
C'est ...	*It is ...*
un camping avec logements *insolites.	*a campsite with unusual accommodation.*
un hôtel-château au cœur d'une vieille ville.	*a castle hotel in the heart of an old town.*
un village calme sur l'eau avec des *cabanes *flottantes.	*a quiet village on the water with floating huts.*
une maison *troglodyte historique et confortable.	*a historic and comfortable cave house.*
Qu'est-ce qu'il y a là-bas?	*What is there?*
Il y a ...	*There is ...*
un grand choix de restaurants.	*a large choice of restaurants.*
un grand jardin.	*a big garden.*
une belle vue sur la **rivière** et la campagne / une piscine.	*a beautiful view of the river and the countryside / a swimming pool.*
des *balcons / des jeux pour enfants / des petits bateaux.	*balconies / games for children / small boats.*
des tentes / des terrains de sport / trois chambres.	*tents / sports grounds / three bedrooms.*
Qu'est-ce qu'on peut faire?	*What can you do?*
On peut ...	*You can ...*
découvrir une belle région.	*discover a beautiful region.*
profiter de la nature.	*make the most of nature.*
s'amuser en famille à la plage.	*have fun as a family on the beach.*
se couper du monde.	*switch off from the world.*
se faire plaisir.	*treat yourself.*
vivre une expérience unique.	*have a unique experience.*

Des vacances de rêve (pages 108–109)

Quel type de vacances aimerais-tu mieux?	*What type of holiday would you like best?*
J'**aimerais** mieux ...	*I would prefer ...*
des vacances reposantes.	*a relaxing holiday.*
des vacances *éco-responsables.	*an eco-friendly holiday.*
des vacances culturelles.	*a cultural holiday.*
des vacances *d'aventure.	*an adventure holiday.*
Où **passerais**-tu tes vacances idéales?	*Where would you spend your ideal holiday?*
Je **passerais** mes vacances ...	*I would spend my holiday ...*
à la montagne.	*in the mountains.*
sur une île ou sur la côte.	*on an island or at the coast.*
en ville.	*in a town.*
Comment **voyagerais**-tu?	*How would you travel?*
Je **voyagerais** ...	*I would travel ...*
en avion privé / en bateau.	*in a private plane / by boat.*
en train à grande *vitesse.	*by high-speed train.*
Où **logerais**-tu?	*Where would you stay?*
Je **logerais** ...	*I would stay ...*
sous une tente.	*in a tent.*
dans un hôtel de *luxe / une ferme / un château.	*in a luxury hotel / a farm / a castle.*
J'**achèterais** des vêtements.	*I would buy clothes.*
J'**irais** (avec mes **copains**) ...	*I would go (with my friends) ...*
Je **mangerais** de la nourriture locale délicieuse.	*I would eat delicious local food.*
Je **visiterais** de beaux sites.	*I would visit beautiful places.*
Nous **ferions** un **vol** en *hélicoptère au-dessus du *désert.	*We would take a helicopter flight over the desert.*

On part pour la Corse (pages 110–111)

Que faire en *Corse?	*What can you do in Corsica?*
Il vaut la peine de/d' ...	*It is worth ...*
Il vaut mieux ...	*It is better to ...*
Il faut ...	*You have to ...*
On peut ...	*You can ...*
goûter les **plats** locaux.	*taste the local dishes.*
découvrir la culture *corse.	*discover Corsican culture.*
faire une visite en bateau.	*go on a boat trip.*
pratiquer un sport extrême.	*practise an extreme sport.*
prendre le soleil à la plage.	*sunbathe at the beach.*
acheter des souvenirs et des **produits** *typiques.	*buy typical souvenirs and products.*
traverser le pont du *Vecchio en train.	*cross the Vecchio bridge by train.*
aller au marché.	*go to the market.*
louer une *trottinette électrique.	*hire an electric scooter.*
monter **jusqu'**au *sommet d'une montagne.	*climb to the summit of a mountain.*
réserver toutes les activités.	*book all the activities.*
visiter le musée de *Bastia.	*visit the Bastia museum.*
Le musée ferme à quelle heure?	*What time does the museum close?*
Le marché commence à quelle heure?	*What time does the market start?*
L'entrée pour la piscine coûte combien?	*How much does entry for the swimming pool cost?*
Où est-ce qu'on peut réserver des billets?	*Where can you book tickets?*
Pouvez-vous me recommander un bon restaurant?	*Can you recommend a good restaurant?*
Est-ce que vous pouvez me donner des **renseignements** sur les visites en bateau?	*Can you give me information on the boat trips?*
Est-ce que le château est accessible aux personnes handicapées?	*Is the castle accessible for disabled people?*
Est-ce que les chiens sont acceptés?	*Are dogs allowed?*
Peut-on **louer** un vélo électrique en ville?	*Can we hire an electric bike in town?*
Le cinéma, il est ouvert le lundi / le dimanche?	*Is the cinema open on Mondays / on Sundays?*

Le monde en fête (pages 112–113)

La fête de la mer, qui se passe en juillet, dure quatre jours.	*The festival of the sea, which happens in July, lasts four days.*
C'est une fête régionale.	*It is a regional festival.*
Tu es allé(e) à quel carnaval / festival?	*Which carnival / festival did you go to?*
Je suis allé(e) à la fête / au *carnaval.	*I went to the festival / the carnival.*
Il y avait des bateaux *decorés et *colorés.	*There were colourful decorated boats.*
Il y avait des *danseurs / de la musique.	*There were dancers. / There was music.*
J'ai **goûté** des **plats** locaux.	*I tasted local dishes.*
J'ai dansé avec la parade.	*I danced with the parade.*
En avril dernier, je suis allé(e) chez ma tante à Madagascar.	*Last April, I went to my aunt's house in Madagascar.*
On a **fêté** la fête du riz.	*We celebrated the Festival of Rice.*
On a entendu la musique dans la rue.	*We heard the music in the street.*
Un soir, nous avons mangé un grand repas en famille.	*One evening, we ate a big family meal.*
J'ai **goûté** sept **plats** avec du riz.	*I tasted seven dishes with rice.*

Guide de voyage (pages 114–115)

J'aime / Je n'aime pas l'hôtel car ...	*I like / don't like this hotel because ...*
il est ... / il n'est pas ...	*it is / it isn't ...*
il y a ... / il n'y a pas ...	*there is / there isn't ...*
À ton avis, comment était l'hôtel?	*In your opinion, what was the hotel like?*
Il **n'**y avait **aucun(e)** ...	*There was no ...*
Il n'y avait ni ... ni ...	*There was neither ... nor ...*
ascenseur / papier toilette.	*lift / toilet paper.*
salle de jeux / place dans le *parking / restaurant.	*games room / space in the car park / restaurant.*
Il **n'**y avait **que** une petite fenêtre.	*There was only a small window.*
La chambre / Le lit était ...	*The bedroom / bed was ...*
Le restaurant / La piscine était ...	*The restaurant / swimming pool was ...*
fermé(e) / propre.	*closed / clean.*
La *lampe / La carte d'**accès** ne marchait pas.	*The lamp / access card didn't work.*
J'ai **dû me plaindre** / aller en ville.	*I had to complain / go into town.*
Je n'ai pas **pu** faire de natation.	*I was not able to go swimming.*
J'**aimerais** (bien) / Je n'**aimerais** pas retourner à cet hôtel.	*I would (really) like / I would not like to go back to this hotel.*
Je peux vous aider?	*How can I help you?*
Nous avons une réservation pour une chambre pour deux personnes.	*We have a reservation for one room for two people.*
C'est pour combien de nuits?	*How many nights is it for?*
C'est pour une / trois nuit(s).	*It is for one / three night(s).*
Vous avez déjà **réglé** la réservation en ligne?	*Have you already paid for the booking online?*
Ça coûte combien?	*How much is it?*
Ça coûte soixante-dix euros **par** nuit.	*It is seventy euros per night.*
Vous voulez payer comment?	*How would you like to pay?*
Je voudrais payer en **espèces** / **par** carte.	*I would like to pay in cash / by card.*
Est-ce qu'il y a une vue sur la mer / une piscine dans l'hôtel?	*Is there a sea view / a swimming pool in the hotel?*
Oui, bien sûr.	*Yes, of course.*
Bonne **soirée**!	*Have a good evening!*

Vive les vacances! (pages 116–117)

Qu'est-ce qu'on **fera**?	*What will we do?*
Ce **sera** bientôt les vacances!	*It's almost the holidays!*
S'il fait beau / chaud, ...	*If it's nice / hot weather, ...*
S'il fait froid / mauvais, ...	*If it's cold / bad weather, ...*
S'il y a du soleil / du vent, ...	*If it's sunny / windy, ...*
S'il pleut, ...	*If it rains, ...*
Que feras-tu ce week-end?	*What will you do this weekend?*
Vendredi soir, / Samedi, ...	*On Friday evening, / On Saturday, ...*
J'**enregistrerai** une chanson.	*I will record a song.*
Je **louerai** un vélo.	*I will hire a bike.*
J'**organiserai** un concert.	*I will organise a concert.*
J'**irai** à la plage.	*I will go to the beach.*
Je **ferai** du camping / une *promenade.	*I will go camping / for a walk.*
Je **participerai** à une expérience **virtuelle**.	*I will take part in a virtual experience.*
Je **ferai** une appli.	*I will make an application.*

Normalement, / D'habitude, ...	*Normally, / Usually, ...*
Pendant les grandes vacances, ...	*During the summer holidays, ...*
je reste ... / je vais ...	*I stay ... / I go ...*
il/elle doit ... / il/elle veut ...	*he/she must ... / he/she wants (to) ...*
L'été dernier, ...	*Last summer, ...*
L'année dernière, ...	*Last year, ...*
j'ai passé du temps / mes vacances ...	*I spent time / my holiday ...*
j'ai décidé de ...	*I decided to ...*
je suis allé(e) ...	*I went ...*
il/elle a **loué** ... / a fait ...	*he/she hired ... / did ...*
nous avons **loué** ...	*we rented ...*
il faisait gris ... / il y avait du vent ... / il **pleuvait**.	*it was grey / windy / rainy.*
Cet été, j'**irai** ... / je **ferai** ... / ce **sera** ...	*This summer, I will go ... / I will do ... / it will be ...*

Madagascar: miroir du monde? (pages 134–135)

Les nombres	*Numbers*
vingt, vingt-huit	*twenty, twenty-eight*
trente, trente-et-un	*thirty, thirty-one*
quarante, quarante-neuf	*forty, forty-nine*
cinquante, cinquante-deux	*fifty, fifty-two*
soixante, soixante-et-un, soixante-quatre, soixante-cinq	*sixty, sixty-one, sixty-four, sixty-five*
soixante-dix, soixante-et-onze, soixante-seize	*seventy, seventy-one, seventy-six*
quatre-vingts, quatre-vingt-un, quatre-vingt-six	*eighty, eighty-one, eighty-six*
quatre-vingt-dix, quatre-vingt-treize, quatre-vingt-dix-huit	*ninety, ninety-three, ninety-eight*
trois-cent-cinquante-quatre	354
mille-six-cent-quatre-vingt-quinze	1695
pour cent	*per cent*
vingt-deux pour cent	*twenty-two per cent*
La *proportion d'énergie *solaire utilisée à Madagascar, c'est ...	*The proportion of solar power used in Madagascar is ...*
La *proportion de jeunes qui connaissent l'énergie *hydroélectrique, c'est ...	*The proportion of young people who know about hydroelectric power is ...*

Quel est le plus grand problème, à ton avis?	*Which is the biggest problem, in your opinion?*
Et pour toi, quel est le plus grand problème?	*And for you, which is the biggest problem?*
À mon avis, le plus grand problème, c'est ...	*In my opinion, the biggest problem is ...*
Je pense que le plus grand problème, c'est ...	*I think that the biggest problem is ...*
Une personne pense que le plus grand problème, c'est ...	*One person thinks that the biggest problem is ...*
Cinq personnes pensent que c'est ...	*Five people think that it is ...*
la *déforestation.	*deforestation.*
la pollution.	*pollution.*
*l'extinction des **espèces**.	*extinction of species.*
l'utilisation des ressources naturelles.	*the use of natural resources.*
les **déchets** *industriels / personnels.	*industrial / personal waste.*
les effets du changement **climatique**.	*the effects of climate change.*

Notre monde est beau (pages 136–137)

La moins grande forêt est la forêt *Sihlwald.	*The smallest forest is the Sihlwald forest.*
La forêt tropicale *congolaise est plus grande que la forêt *Sihlwald.	*The tropical Congolese forest is bigger than the Sihlwald forest.*
Le *Rhin est moins long que le *Mackenzie.	*The Rhine is not as long as the Mackenzie.*
la capitale	*capital city*
la population	*population*
la plus grande forêt	*the biggest forest*
la plus haute montagne	*the highest mountain*
la plus longue **rivière**	*the longest river*

Tu as raison / tort.	*You are right / wrong.*
C'est vrai / faux.	*It is true / false.*
au printemps	*in spring*
en été	*in summer*
en automne	*in autumn*
en hiver	*in winter*
il fait chaud / froid / **humide**	*it is hot / cold / humid*
il pleut	*it is rainy/raining*
il y a du brouillard	*it is foggy*

Planète en danger (pages 138–139)

Le *climat / Le monde naturel / L'environnement ...	*The climate / The natural world / The environment ...*
La planète / La population **humaine** ...	*The planet / The human population ...*
Les animaux / Les **espèces** ...	*Animals / Species ...*
Les humains / Les poissons ...	*Humans / Fish ...*
est/sont amélioré(e)(s) **par** ...	*is/are improved by ...*
est/sont **menacé**(e)(s) **par** ...	*is/are threatened by ...*
est/sont protégé(e)(s) **par** ...	*is/are protected by ...*
est/sont **touché**(e)(s) **par** ...	*is/are affected by ...*
le changement **climatique** / le *réchauffement de la planète	*climate change / global warming*
le niveau de la mer / le **taux** de *carbone	*the sea level / the carbon level*
la **circulation** / la destruction	*traffic / destruction*
la faim / la pollution	*hunger / pollution*
les **fleurs** / les forêts / les **inondations**	*flowers / forests / floods*

Quel temps **fera**-t-il à ...?	*What will the weather be like in ...?*
Il **fera** beau / chaud.	*It will be nice / hot weather.*
Il **fera** froid / mauvais.	*It will be cold / bad weather.*
Il y **aura** du soleil / du vent / du brouillard.	*It will be sunny / windy / foggy.*
Il **pleuvra**.	*It will rain.*
Il **neigera**.	*It will snow.*

Des grands gestes (pages 140–141)

Quelle est la chose la plus importante à faire pour protéger l'environnement?	*What is the most important thing to do to protect the environment?*
Il faut ...	*We must ...*
manifester pour des organisations vertes.	*demonstrate for green organisations.*
manifester contre ...	*protest against ...*
participer aux *élections / aux *débats *politiques / aux **manifestations** pour ...	*participate in elections / in political debates / in demonstrations for ...*
développer la *coopération globale.	*develop global cooperation.*
être *bénévole pour des projets verts.	*volunteer for green projects.*
arrêter de **créer** des **produits** en plastique.	*stop creating plastic products.*
voter pour un **gouvernement** qui *finance des recherches en énergies vertes.	*vote for a government which funds research into green energy.*

organiser des **manifestations** pour la protection des **espèces**.	*organise demonstrations for the protection of species.*
la nature	*nature*
le recyclage	*recycling*
la destruction des forêts	*destruction of forests*
la protection de la mer	*protection of the sea*
aux *élections	*at elections*
Il est *porte-parole pour la **lutte** contre *l'extinction des **espèces**.	*He is a spokesperson for the fight against the extinction of species.*
Elle a parlé à des conférences.	*She has spoken at conferences.*
il trouve que / il croit que ...	*he finds that / he thinks that ...*
régulièrement / l'année dernière	*regularly / last year*
*en plus	*also*

Des petits gestes (pages 142–143)

Qu'est-ce que tu fais pour protéger l'environnement?	*What do you do to protect the environment?*
J'utilise du papier recyclé.	*I use recycled paper.*
Je *trie mes **déchets**.	*I sort my rubbish.*
Je me *douche *au lieu de prendre un bain.	*I take a shower instead of having a bath.*
Je ne mange jamais de viande.	*I never eat meat.*
Je recycle le plastique.	*I recycle plastic.*
Je fais des petits *gestes.	*I take small actions.*
en achetant du papier recyclé	*by buying recycled paper*
en étant végétarien	*by being a vegetarian*
en mangeant moins de viande	*by eating less meat*
en recyclant	*by recycling*
en réutilisant les sacs en plastiques	*by reusing plastic bags*
en séparant le plastique, le papier et le **verre**	*by separating plastic, paper and glass*

Quand tu étais plus jeune, qu'est-ce que tu faisais pour protéger l'environnement?	*When you were younger, what did you do to protect the environment?*
Quand j'étais plus jeune, ... j'utilisais / je faisais / je prenais / j'allais ...	*When I was younger, ... I used / I did / I took / I went ...*
Et maintenant, qu'est-ce que tu fais pour protéger l'environnement?	*And now, what do you do to protect the environment?*
Maintenant, j'utilise / je fais / je prends / je vais ...	*Now, I use / I do / I take / I go ...*
Et la semaine dernière, qu'est-ce que tu as fait?	*And last week, what did you do?*
La semaine dernière, j'ai utilisé / j'ai fait / j'ai pris / je suis allé(e) ...	*Last week, I used / I did / I took / I went ...*

Innovation verte (pages 144–145)

Qu'est-ce que vous faites comme **métier**?	*What job do you do?*
Je suis *ingénieur(e).	*I am an engineer.*
Je suis **en train de** rechercher l'énergie *hydroélectrique.	*I am researching hydroelectric energy.*
Je recherche des nouvelles technologies.	*I research new technologies.*
Je suis **en train de développer** l'énergie *éolienne.	*I am developing wind power.*
Quand vous étiez jeune, qu'est-ce que vous faisiez pour protéger l'environnement?	*When you were yound, what did you do to protect the environment?*
Je *triais mes **déchets**.	*I sorted my rubbish.*
J'achetais des **produits** verts.	*I bought green products.*
Qu'est-ce qu'il faut faire pour lutter contre le *réchauffement de la planète?	*What do we need to do to fight against global warming?*
Il faut organiser des **manifestations** contre la pollution.	*We need to organise protests against pollution.*

Qu'est-ce que vous avez fait pour *l'innovation verte?	*What have you done for green innovation?*
J'ai recherché des technologies pour *purifier l'air.	*I have researched technologies to purify the air.*
Je **viens de développer** les *piles à *hydrogène.	*I have just developed hydrogen batteries.*
À l'avenir, qu'est-ce que vous **ferez** pour protéger l'environnement?	*In the future, what will you do to protect the environment?*
Je **continuerai** à rechercher les nouvelles technologies.	*I will continue to research new technologies.*
J'**améliorerai** la qualité des transports électriques.	*I will improve the quality of electric transport.*
On doit améliorer la qualité des transports électriques.	*We need to improve the quality of electric transport.*
On doit utiliser plus d'énergie *éolienne.	*We need to use more wind power.*
Récemment, j'ai organisé une **manifestation**.	*Recently, I organised a demonstration.*
Je **viens de** parler à une *conférence.	*I just spoke at a conference.*
À l'avenir, je **développerai** les transports verts.	*In the future, I will develop green transport.*

The present tense

Remove the 'en' to form the stem e.g. spielen – spiel

ich	_____e (I)	wir	_____en	(we)
du	_____st (you)	ihr	_____t	(you inf/pl)
er	_____t (he)	Sie	_____en	(you for/pl)
sie	_____t (she)	sie	_____en	(they)

Some verbs are irregular. They usually only change in the du & er/sie forms.

Ich / du / er/sie

esse / isst / isst
lese / liest / liest
sehe / siehst / sieht

The perfect tense

Start with the correct form of haben (below) and end with the past participle. Form the past participle by putting **ge___t** around the verb stem. E.g. spielen – **ge**spiel**t**.

ich habe	wir haben
du hast	ihr habt
er hat	Sie haben
sie hat	sie haben

Common irregular past participles:
gelesen, gesehen, gegessen, getrunken, gefunden

Verbs where there is movement or a change of state use sein instead of haben. The most common verbs are: gegangen (went), gefahren (travelled), geflogen (flew), geblieben (stayed)

ich bin	wir sind
du bist	ihr seid
er ist	Sie sind
sie ist	sie sind

The future tense

Start with the correct form of werden (below) and end with the infinitive. E.g. spielen

ich werde	wir werden
du wirst	ihr werdet
er wird	Sie werden
sie wird	sie werden

The conditional

Start with the correct form of the verb below and end with the infinitive. E.g. spielen

ich würde	wir würden
du würdest	ihr würdet
er würde	Sie würden
sie würde	sie würden

Some verbs have special forms:

I would have	ich hätte
I would be	ich wäre
There would be	es gäbe

The Case System

Year 10 German Summer 2

Definite articles (the)

	Masc.	Fem.	Neuter	Plural
Nominative	der	die	das	die
Accusative	den	die	das	die
Genitive	des	der	des	der
Dative	dem	der	dem	den

Indefinite articles (a/an)

	Masc.	Fem.	Neuter	Plural
Nominative	ein	eine	ein	-
Accusative	einen	eine	ein	-
Genitive	eines	einer	eines	-
Dative	einem	einer	einem	-

When to use each case

Case	Role	Description
nominative	subject	takes action
accusative	direct object	receives action
dative	indirect object	to/for whom action is taken
genitive	possessive	indicates owner of someone/something

How to figure out the gender of (most) German nouns without a dictionary!

← By word group

Usually Masculine (der)	Usually Feminine (die)	Usually Neuter (das)
Days, months, and seasons: **der Freitag** (*Friday*)	Many flowers: **die Rose** (*the rose*)	Colors (adjectives) used as nouns: **grün** (green) **das Grün** (*the green*)
Map locations: **der Süd(en)** (*the south*)	Many trees: **die Buche** (*the beech*)	Geographic place names: **das Europa** (*Europe*)
Names of cars and trains: **der Audi** (*the Audi*) and **der ICE** (*the Intercity Express*)	Names of aircraft and ships: **die Boeing 767** (*the Boeing 767*), **die Titanic** (*the Titanic*)	Infinitives used as nouns (gerunds): **schwimmen** (*to swim*) **das Schwimmen** (*swimming*)
Nationalities and words showing citizenship: **der Amerikaner** (*the American*)	Cardinal numbers: **eine Drei** (*a three*)	Young people and animals: **das Baby** (*the baby*)
Occupations: **der Arzt** (*the doctor*)		Almost all the chemical elements and most metals: **das Aluminium** (aluminum) and **das Blei** (*lead*)
Names of most mountains and lakes: **der Großglockner** (the highest mountain in Austria)		
Most rivers outside of Europe: **der Amazonas** (the Amazon)		

By prefix/suffix →

Usually Masculine (der)	Usually Feminine (die)	Usually Neuter (das)
-er (especially when referring to male people/jobs)	**-ade, -age, -anz, -enz, -ette, -ine, -ion, -tur** (if foreign/borrowed from another language)	**-chen**
-ich	**-e**	**-ium**
-ismus	**-ei**	**-lein**
-ist	**-heit**	**-ment** (if foreign/borrowed from another language)
-ner	**-ie**	**-o**
	-ik	**-tum** or **-um**
	-in (when referring to female people/occupations)	**Ge-**
	-keit	
	-schaft	
	-tät	
	-ung	

Wo spricht man Deutsch? (pages 104–105):

Die *deutschsprachigen Länder	*German-speaking countries*
Deutschland	*Germany*
Österreich	*Austria*
die Schweiz	*Switzerland*

der **Einwohner**	*inhabitant, resident*
der Fluss	*river*
der **höchste** *Punkt	*the highest point*
die **Hauptstadt**	*capital city*
das Land	*country, land , state*

Wo wohnst du? (pages 106–107):

Wo ich wohne	*Where I live*
Ich wohne ...	*I live ...*
in einem Dorf.	*in a village.*
in einer Kleinstadt.	*in a small town.*
in einer Großstadt.	*in a city.*
in der Stadtmitte.	*in the town / city centre.*
in den Bergen.	*in the mountains.*
am Stadt**rand**.	*on the outskirts.*
auf dem Land.	*in the countryside.*
an einem See.	*by a lake.*
an der Küste.	*on the coast.*
Das liegt ...	*It lies / is situated ...*
im Norden von ...	*in the north of ...*
im Osten von ...	*in the east of ...*
im Süden von	*in the south of ...*
im Westen von ...	*in the west of ...*
Der Ort ist ...	*The place/location/town is ...*
Der **Bereich** ist ...	*The area is ...*
Die Gegend ist ...	*The region, area is ...*
Die **Landschaft** ist ...	*The countryside/scenery/ landscape is ...*
Die Region ist ...	*The region is ...*
Die Umgebung ist ...	*The surroundings are ...*
besonders	*particularly, especially*
echt/extrem	*really/extremely*
ganz/relativ	*quite/relatively*

alt/neu.	*old/new.*
sauber/schmutzig.	*clean/dirty.*
schön.	*beautiful.*
historisch/modern.	*historic/modern.*
ruhig/laut.	*quiet/noisy.*
sicher.	*safe.*
Es gibt ...	*There is ...*
(k)einen Flughafen.	*no airport / an airport.*
(k)eine Bank.	*no bank / a bank.*
(k)eine Bibliothek.	*no library / a library.*
(k)eine Post.	*no post office / a post office.*
(k)eine Schule.	*no school / a school.*
(k)eine Universität.	*no university / a university.*
(k)ein Fitnesszentrum.	*no gym / a gym.*
(k)ein Geschäft.	*no shop / a shop.*
(k)ein Kino.	*no cinema / a cinema.*
(k)ein Krankenhaus.	*no hospital / a hospital.*
(k)ein Museum.	*no museum / a museum.*
(k)ein Schloss.	*no castle / a castle.*
(k)ein Schwimmbad.	*no swimming pool / a swimming pool.*
(k)ein Stadion.	*no stadium / a stadium.*
(k)ein Theater.	*no theatre / a theatre.*
viel **Verkehr**.	*a lot of traffic.*

Mein idealer Wohnort (pages 114–115)

Wo würdest du am **liebsten** wohnen?	*Where would you prefer to live?*
Wo würdest du gern leben?	*Where would you like to live?*
Wie wäre deine ideale Umgebung?	*What would be your ideal area be like?*
Was hätte dein idealer Wohnort?	*What would your ideal place to live have?*
grün	*green*
alt	*old*
hell	*light*

der Baum	*tree*
der Wohnort	*place to live, place of residence*
die Großstadt	*city*
die **Hauptstadt**	*capital city*
die Kleinstadt	*small town*
die Umgebung	*surroundings*
die Wohnung	*flat*
das Dorf	*village*
das Fitnesszentrum	*gym*
das Haus	*house*

German Kapitel 5 – Meine Ecke!

Wo gehst du gern einkaufen? (pages 112–113)

Einkaufen	*Shopping*
die Apotheke	*chemist, pharmacy*
die **Bäckerei**	*bakery*
die Bank	*bank*
das Käsegeschäft	*cheese shop*
das Kleidungsgeschäft	*clothes shop*
das *Schmuckgeschäft	*jewellery shop*
das Schreibwarengeschäft	*stationery shop*
das Uhrengeschäft	*watch/clock shop*
In meinem Dorf / In meiner Stadt gibt es ...	*In my village/town there is/are ...*
keine Geschäfte.	*no shops.*
einige *Second-Hand-Läden.	*some second-hand shops.*
viele Cafés.	*a lot of cafés.*
einen großen Supermarkt.	*a large supermarket.*
ein großes Einkaufszentrum.	*a large shopping centre.*
Ich kaufe (nicht) gern ... ein,	*I (don't) like shopping ...*
im Einkaufszentrum	*in the shopping centre,*
mit einer App	*with an app,*
online	*online,*
weil das ... ist.	*because it is ...*
einfach(er)	*easy (easier).*
praktisch(er)	*practical (more practical).*
teuer (teurer)	*expensive (more expensive).*
Man kann Zeit sparen.	*You can save time.*
Man kann schöne Sachen finden.	*You can find beautiful things.*
Man kann Kleidung anprobieren.	*You can try clothes on.*
Man kann Waren einfach zurückschicken.	*You can simply/easily return goods.*
Man kann Waren **sofort** zurückschicken.	*You can return goods immediately.*
Man bekommt bessere ...	*You get better ...*
Informationen.	*Information.*
*Rabatte.	*discounts.*
Preise.	*prices.*
Die Waren kommen direkt nach Hause.	*The goods come direct/straight to your house.*
Die Preise sind reduziert.	*The prices are reduced.*

Wie fährst du? (pages 108–109):

Das Verkehrsmittel	*Means of transport*
Man kann ...	*You can ...*
Man muss ...	*You have to, must ...*
Man soll ...	*You should, are supposed to, ought to ...*
fahren	*go (by transport), drive*
fliegen	*fly*
reisen	*travel*
Ich fahre / Wir fahren ..., ...	*I/we go ..., ...*
mit dem Auto/Wagen ...	*by car*
mit dem Boot/Schiff...	*by boat/ship*
mit dem Bus ...	*by bus*
mit dem *Elektroauto ...	*by electric car*
mit dem Fahrrad ...	*by bicycle, bike*
mit dem **Fahrzeug** ...	*by vehicle*
mit dem Flugzeug ...	*by aeroplane*
mit dem *Reisebus ...	*by coach*
mit dem Zug ...	*by train*
mit der Bahn ...	*by rail*
mit der **Straßenbahn** ...	*by tram*
in die *USA	*to the USA*
in die Stadtmitte	*to the town/city centre*
nach Hause	*home*
zum Bahnhof	*to the station*
zum Flughafen	*to the airport*
zur Schule	*to school*
weil ...	*because ...*
ich um die Ecke wohne.	*I live around the corner.*
wir weit weg von der Schule wohnen.	*we live far / a long way from (the) school.*
die Schule ganz nah ist.	*the school is quite near/close.*
es eine lange Fahrt ist.	*it is a long journey.*
die Fahrt nur zehn Minuten dauert.	*the journey only takes ten minutes.*
die Reise sehr lange dauert.	*the journey takes a long time.*
es am **schnellsten** geht.	*it is the quickest way.*

Ich komme zu Besuch (pages 110–111):

Nach Informationen fragen	*Asking for information*
Ich möchte eine Fahrkarte nach ..., bitte.	*I would like a ticket to ..., please.*
Einfach oder *hin und zurück?	*Single or return?*
Eine Rückfahrtkarte, bitte.	*A return ticket, please.*
Was kostet das?	*How much does it cost?*
Wann fährt der Zug **ab**?	*When does the train leave?*
Wann kommt der Zug an?	*When does the train arrive?*
Gibt es ... in der Nähe?	*Is there (a) ... nearby?*
Gehen Sie hier geradeaus.	*Go straight ahead here.*
Nehmen Sie die erste Straße links/rechts.	*Take the first street on the left/right.*
... **liegt** auf der linken/rechten Seite.	*... (it) is on the left/right-hand side.*
Ich brauche ...	*I need ...*
einen warmen Pullover.	*a warm pullover.*
eine schwarze Hose.	*black trousers.*
ein blaues Hemd.	*a blue shirt.*
ein tolles Kleid.	*a great/terrific dress.*
Schuhe.	*shoes.*
Er/Sie/Es ist ... / Sie sind ...	*It is ... / They are ...*
zu	*too*
ein **bisschen**	*a little*
nicht	*not*
ziemlich	*rather*
groß.	*big.*
klein.	*small.*
kurz.	*short.*
lang.	*long.*
billig.	*cheap.*
teuer.	*expensive.*
eng	*narrow/tight.*
weit.	*wide.*
Wo kann ich (ihn/sie/es) anprobieren?	*Where can I try (it) on?*
Wo kann ich (ihn/sie/es) zurückbringen?	*Where can I return (it)?*
Was kostet das?	*How much does it cost?*
Was kosten sie?	*How much do they cost?*
Das kostet (5) Euro.	*It costs (5) euros.*
Sie kosten (5) Franken.	*They cost (5) francs.*
Ich nehme ihn/sie/es (nicht).	*I will (not) take it.*
Wir nehmen ihn/sie/es (nicht).	*We will (not) take it.*

Bei mir zu Hause (pages 116–117)

Zimmer zu Hause	*Rooms at home*
Im Badezimmer wasche ich mir die Haare.	*I wash my hair in the bathroom.*
Im Büro / Im *Arbeitszimmer arbeite ich.	*I work in the office/study.*
Im Esszimmer / In der Essecke esse ich (zu Mittag / zu Abend).	*I eat (lunch/dinner) in the dining room / dining area.*
In der Garage *parken wir das Auto.	*We park the car in the garage.*
Im Garten lese ich.	*I read in the garden.*
In der Küche *frühstücke ich.	*I have breakfast in the kitchen.*
Im Schlafzimmer schlafe ich.	*In the bedroom I sleep.*
Im Wohnzimmer spiele ich auf der Spielkonsole.	*In the living room I play on the games console.*

Im Urlaub und unterwegs (pages 134–135):

*Reiseziele	*Travel destinations*
alt	*old*
bekannt	*well-known, famous*
beliebt	*popular*
berühmt	*famous*
*eindrucksvoll	*impressive*
historisch	*historic*
hoch	*high, tall*
lang	*long*
riesig	*huge, great*
schön	*lovely, beautiful*
spannend	*exciting, thrilling, tense*
traditionell	*traditional*
unglaublich	*incredible*
wunderbar	*wonderful*
bauen	*build*
wandern	*hike*
*klettern	*climb*
der Berg	*mountain*
der *Freizeitpark	*theme park*
der Wald	*forest, wood*
die *Burg	*castle*
das Schloss	*castle*

Wo fahren wir hin? (pages 136–137):

Vorteile and **Nachteile**	*Advantages and disadvantages*
Was denkst du?	*What do you think?*
Ich denke, dass ...	*I think that ...*
Du hast gesagt, dass ...	*You said that ...*
Auf der einen Seite ...	*On the one hand ...*
Auf der anderen Seite ...	*On the other hand ...*
Du hast Recht!	*You're right!*
Das stimmt!	*That's right!*
Genau!	*Exactly!*
Richtig!	*Correct!*
Ein **Vorteil**/Ein **Nachteil** davon ist, dass es ... ist.	*An advantage / A disadvantage of it/this is, that it is ...*
Meiner Meinung nach ist das ...	*In my opinion that is ...*
Ich finde das ...	*I think that is ...*
... eine gute/schlechte Idee, ...	*... a good/bad idea, ...*
... einen guten/schlechten **Vorschlag**, ...	*... a good/bad suggestion, ...*

weil/**da** es ... ist.	*because/since it is ...*
äußerst	*extremely*
besonders	*particularly*
ein **bisschen**	*a little*
echt	*really*
ganz	*quite*
(gar) nicht	*not (at all)*
wirklich	*really*
günstig	*cheap, good*
interessant	*interesting*
langweilig	*boring*
schön	*lovely, beautiful*
spannend	*exciting, thrilling, tense*
wunderbar	*wonderful*
weil/**da** man ... kann.	*because/since you can ...*
leckeres Essen probieren	*try delicious food.*
(nicht) (Tennis) spielen	*(not) play (tennis).*
in den Seen schwimmen	*swim in lakes.*
in den Bergen wandern	*hike in the mountains.*
am Strand **liegen**	*lie on the beach.*

Probleme, Probleme (pages 140–141):

Probleme im Urlaub	*Problems on holiday*
Was ist das Problem?	*What is the problem?*
Ich habe ...	*I have ...*
meinen Pass/*Schlüssel/Koffer	*my passport/key/suitcase*
meine Fahrkarte/**Kreditkarte**/Tasche	*my ticket/credit card/bag*
mein **Gepäck**/Handy/Tablet	*luggage/mobile phone/tablet*
meine **Ohrhörer**	*earbuds*
... vergessen/verloren.	*... forgotten/lost.*
Ich möchte mich **beschweren**.	*I would like to complain.*
Mein *Fernseher / Meine Tür ist kaputt.	*My TV/door is broken.*
Mein Bett ist unbequem.	*My bed is uncomfortable.*
Mein Zimmer ist schmutzig.	*My room is dirty.*
Die **Mitarbeiter** sind *unhöflich.	*The employees are rude.*

Ich möchte eine Reservierung machen! (pages 138–139):

Reservierungen	*Reservations*
Für wen ist die Reservierung?	*Who is the reservation for?*
Die Reservierung ist für ...	*The reservation is for ...*
meine Familie	*my family.*
meine Kollegen.	*my colleagues.*
mich.	*me.*
Was für ein Zimmer möchten Sie?	*What kind of room would you like?*
Ich möchte ein/zwei/drei ... reservieren.	*I would like to reserve one/two/three ...*
Einzelzimmer ...	*single room(s).*
Doppelzimmer ...	*double/twin room(s).*
mit Bad	*with a bath.*
mit WLAN	*with wifi.*
Mit wem reisen Sie?	*Who are you travelling with?*
Ich reise ...	*I'm travelling ...*
mit meiner Familie.	*with my family.*
mit meinen Freunden.	*with my friends.*
mit meinen Kollegen.	*with my colleagues.*
mit meinen Eltern.	*with my parents.*
Und noch eine Frage: was kostet (das WLAN)?	*And another question: how much does (the Wi-Fi) cost?*
Mit oder ohne Frühstück?	*With or without breakfast?*
Mit/Ohne/**Inklusive** Frühstück, bitte.	*With/Without/Including breakfast, please.*
Wie lange möchten Sie bleiben?	*How long would you like to stay?*
Ich möchte ... lang bleiben.	*I would like to stay ...*
eine Nacht / drei Nächte.	*one night / three nights.*
eine Woche / zwei Wochen	*one week / two weeks.*
Wann kommen Sie an?	*When will you arrive?*
Ich komme um (10:00 Uhr) an.	*I will arrive at (10:00) o'clock.*
Wann **fahren** Sie **ab**?	*When will you leave?*
Ich **fahre** am (fünften Juli) **ab**.	*I will leave on (5th July).*
Wie möchten Sie bezahlen?	*How would you like to pay?*
Kann ich mit **Kreditkarte** / online bezahlen?	*Can I pay by credit card / online?*

Ich möchte um die Welt reisen! (pages 144–145):

Urlaube	*Holidays*
Was wirst du in den Ferien machen?	*What will you do in the holidays?*
Wie **wäre** dein Traumurlaub?	*What would your dream holiday be?*
Ich werde...	*I will ...*
Wir werden...	*We will ...*
Ich **würde** ...	*I would ...*
Wir **würden** ...	*We would ...*
in den (Sommer)ferien	*in the (summer) holidays*
in der Zukunft	*in future*
nach den Prüfungen	*after the exams*
nächstes Jahr	*next year*
zu Hause bleiben	*stay at home*
mit dem Boot	*by boat*
mit dem Flugzeug	*by aeroplane*
mit dem Zug	*by train*
nach ... fahren/reisen	*go/travel to ...*
Afrika	*Africa*
Amerika	*America*
Asien	*Asia*
Deutschland	*Germany*

Welche Aktivitäten wirst/**würdest** du dort machen?	*What activities will/would you do there?*
Was wirst/**würdest** du dort machen?	*What will/would you do there?*
Ich werde/**würde** ...	*I will/would ...*
mit meinem Partner / meiner Partnerin	*with my partner*
mit meinem Freund / meiner Freundin	*with my friend*
mit meiner Familie	*with my family*
mit meinen Eltern	*with my parents*
mit meinen Freunden / meinen Freundinnen	*with my friends*
(zehn) Tage in (Köln) sein.	*be in (Cologne) for (ten) days.*
(zehn) Tage in (Köln) verbringen.	*spend (ten) days in (Cologne).*
durch (Asien) fahren/reisen/ wandern.	*go/travel/hike through (Asia).*
diese Schlösser **besichtigen.**	*view these castles.*
diese Museen besuchen.	*visit these museums.*
die Kultur **entdecken/erleben**.	*discover/experience the culture.*
im Meer/See schwimmen.	*swim in the sea/lake.*
einkaufen gehen.	*go shopping.*
spazieren gehen.	*go for a walk.*
Ausflüge / Fotos / einen Kurs machen.	*go on excursions / take photos / do a course.*
Tennis/Handball spielen.	*play tennis/handball.*
in der Sonne **liegen**.	*lie in the sun.*

Wie waren die Schulferien? (pages 142–143):

Schulferien	*School holidays*
Wo hast du **übernachtet**?	*Where did you stay?*
Ich habe / Er hat / Sie hat / Wir haben ... **übernachtet**.	*I/He/She/We spent the night ...*
auf einem Campingplatz	*at a campsite*
mit der Familie	*with the family*
in einem Ferienhaus	*in a holiday home*
in einem Hotel	*in a hotel*
in einem Zelt	*in a tent*
in einer Ferienwohnung	*in a holiday apartment*
auf einer Insel	*on an island*
an der Küste	*on the coast*
am Meer	*at the seaside*
an einem See	*at/by a lake*
Ich bin zu Hause geblieben.	*I stayed at home.*
Was hast du gemacht?	*What did you do?*
Ich habe / Er hat / Sie hat / Wir haben ...	*I/He/She/We ...*
einen **Ausflug** gemacht.	*went on an excursion.*
*Volleyball gespielt.	*played volleyball.*
das Schloss **besichtigt**.	*visited the castle.*
die Museen besucht.	*visited the museums.*
leckeres Essen gegessen.	*ate some delicious food.*
Bücher gelesen.	*read some books.*
Das Wetter war...	*The weather was ...*
heiß	*hot*
kalt	*cold*
neblig	*foggy*
Es gab Regen.	*There was rain.*
Es gab Schnee.	*There was snow.*
Es gab Wind.	*There was wind.*
Es gab viel Sonne.	*There was a lot of sun.*
Es hat geregnet.	*It rained.*
Es hat geschneit.	*It snowed.*

KS4 Spanish Grammar

Present Tense

The present tense is used to describe what you're doing at the present moment in time, e.g: "I am eating breakfast" or what you do routinely, e.g: "I eat breakfast every day".

hablar *to speak*	**comer** *to eat*	**vivir** *to live*
habl-o	com-o	viv-o
habl-as	com-es	viv-es
habl-a	com-e	viv-e
habl-amos	com-emos	viv-imos
habl-áis	com-éis	viv-ís
habl-an	com-en	viv-en

Preterite Tense

The preterite is sometimes known as the simple past. It's used to talk about completed events in the past, e.g. I asked, I ate, I wrote. (TARDIS tense)

preguntar *to ask*	**comer** *to eat*	**escribir** *to write*
pregunt-**é**	com-**í**	escrib-**í**
pregunt-**aste**	com-**iste**	escrib-**iste**
pregunt-**ó**	com-**ió**	escrib-**ió**
pregunt-**amos**	com-**imos**	escrib-**imos**
pregunt-**ásteis**	com-**ísteis**	escrib-**ísteis**
pregunt-**aron**	com-**ieron**	escrib-**ieron**

Near Future Tense

The near future tense can be used to express what is going to happen in the future. E.g. I am going to work, I am going to study, I am going to drink, I am going to eat....

voy	a	trabajar	*I am going*
vas	a	*to work*	
va	a	estudiar	
vamos	a	beber	
vais	a	comer	
van	a	abrir	
		vivir	

Present Continuous Tense

The present continuous tense is used to indicate what is happening at the time of speaking/writing e.g. I am writing/I am talking. Estar + gerund

hablar *to speak*	**comer** *to eat*	**vivir** *to live*
estoy hablando	**estoy** comiendo	**estoy** viviendo
estás hablando	**estás** comiendo	**estás** viviendo
está hablando	**está** comiendo	**está** viviendo
estamos hablando	**estamos** comiendo	**estamos** viviendo
estáis hablando	**estáis** comiendo	**estáis** viviendo
están hablando	**están** comiendo	**están** viviendo

Imperfect Tense

The imperfect tense is used for things that 'used to happen' e.g.I worked, I used to work or for descriptions in the past e.g. the food was bad, the hotel was nice

trabajar *to work*	**comer** *to eat*	**escribir** *to write*
trabaj-**aba**	com-**ía**	escrib-**ía**
trabaj-**abas**	com-**ías**	escrib-**ías**
trabaj-**aba**	com-**ía**	escrib-**ía**
trabaj-**ábamos**	com-**íamos**	escrib-**íamos**
trabaj-**ábais**	com-**íais**	escrib-**íais**
trabaj-**aban**	com-**ían**	escrib-**ían**

Conditional Tense

The conditional is recognised in English by the use of the word "would" or sometimes "should", e.g. "I would swim".

nadar *to swim*	**beber** *to drink*	**abrir** *to open*
nadar-**ía**	beber-**ía**	abrir-**ía**
nadar-**ías**	beber-**ías**	abrir-**ías**
nadar-**ía**	beber-**ía**	abrir-**ía**
nadar-**íamos**	beber-**íamos**	abrir-**íamos**
nadar-**íais**	beber-**íais**	abrir-**íais**
nadar-**ían**	beber-**ían**	abrir-**ían**

How do you conjugate verbs in Spanish?

Most verbs in Spanish have **six** forms which correspond to their respective pronouns and which will be listed in the following order:

1) **yo** (I)

2) **tú** (you-familiar a person you know well, a familiar relationship)

3) **él/ella/usted** (he/she/you-formal a person you don't know, a formal relationship)

4) **nosotros/nosotras** (we)

5) **vosotros/vosotras** (you-plural-familiar [only used in Spain])

6) **ellos/ellas/ustedes** (they/you-plural-formal [Spain]/you-plural [L. America])

For most tenses you remove the verb ending (AR/ER/IR) and replace it with the correct new ending.

It's **essential** that you get the **correct ending** for the person you're talking about in Spanish because **pronouns don't tend to be used in Spanish.**

Nouns and Adjectives

Nouns can be either masculine or feminine and singular or plural.

	masculine	feminine
singular	el / un (the/a)	la / una (the/a)
plural	los / unos (the/some)	las / unas (the/some)

Feminine	Masculine
Nouns ending with: -a -ión -dad -tad Irregulars: la foto, la mano, la moto, la radio	Nouns ending with: -o -l -n -aje -e -r -or -ma -ta -pa

To figure out if a noun is masculine or feminine use this table:

Adjectives in Spanish must match the gender and number of the nouns they are describing. See below:

ENDING	MASCULINE SINGULAR	MASCULINE PLURAL	FEMININE SINGULAR	FEMININE PLURAL
O	pequeño	pequeños	pequeña	pequeñas
OTHER VOWELS	naranja	naranjas	←	
	fuerte	fuertes	←	
CONSONANTS	azul	azules	←	
	marrón	marrones	←	
	veloz	veloces	←	

¡Qué rico! (pages 80–81):

Para ...	*For ...*
el desayuno / la comida	*breakfast / lunch*
la merienda / la cena	*afternoon snack / dinner*
una comida típica	*a typical meal*
un **plato** popular	*a popular dish*
¿De qué país es cada plato?	*What country is each dish from?*
El/La ... es de ...	*... is from ...*
Los/Las ... son de ...	*... are from ...*
México / España / Perú	*Mexico / Spain / Peru*
Chile / Argentina / Cuba	*Chile / Argentina / Cuba*
argentino/a / chileno/a	*Argentinian / Chilean*
colombiano/a / cubano/a	*Colombian / Cuban*
español(a) / inglés/inglesa	*Spanish / English*
mexicano/a / peruano/a	*Mexican / Peruvian*
venezolano/a	*Venezuelan*
¿En qué consiste(n)?	*What is it / are they made of?*
Está hecho/a con ...	*It is made with ...*
Están hechos/as con ...	*They are made with ...*
Consiste(n) en ...	*It consists / They consist of ...*
verdura/carne/*pollo	*vegetables/meat/chicken*
pescado/arroz	*fish/rice*
¿Qué comida o bebida te gustaría probar?	*What food or drink would you like to try?*
Me gustaría **probar** (la paella).	*I would like to try (paella).*
¿Por qué te gustaría probarlo/la/los/las?	*Why would you like to try it/them?*
Porque ...	*Because ...*
parece/**suena** rico/a	*it looks/sounds tasty*
me gusta(n) ...	*I like ...*
es (muy) sano/a.	*it is (very) healthy.*
tiene muchos **beneficios** para la salud.	*it has lots of health benefits.*
¡A comer!	*Let's eat!*
¡Buen provecho!	*Enjoy your meal!*

¿Somos lo que comemos? (pages 84–85):

¿A qué hora tomas ...	*What time do you have ...*
el desayuno/almuerzo?	*breakfast/lunch?*
la merienda/cena?	*afternoon snack/dinner?*
Normalmente/Generalmente	*Normally/Generally*
lo/la tomo ...	*I have it ...*
entre las ... y las ...	*between ... and ...*
A veces como a las ...	*Sometimes I eat at ...*
¿Te gustaría probarlos/las?	*Would you like to try them?*
Te recomiendo ...	*I recommend ...*
Hay que probar ...	*You have to try ...*
Es un postre / una bebida ...	*It is a ... dessert/drink.*
rico/a / típico/a	*tasty / typical*
Me gustaría **probarlo/la/ probarlos/las** ...	*I would like to try it/them ...*
porque **parece**/**suena** ...	*because it looks/sounds ...*
porque **parecen**/suenan ...	*because they look/sound ...*
¿Cómo es tu dieta?	*What is your diet like?*
(No) Tengo una dieta sana porque ...	*I (don't) have a healthy diet because ...*
soy vegano/a / vegetariano/a	*I am vegan / vegetarian*
como comida sana/malsana	*I eat healthy/unhealthy food*
como demasiados *dulces/ pasteles	*I eat too many sweets/cakes*
¿Qué hay que hacer para tener una dieta sana?	*What do you have to do to have a healthy diet?*
Hay que / Se necesita ...	*You have to / need to ...*
Hace falta ...	*It is necessary to ...*
comer una dieta equilibrada	*eat a balanced diet*
tener **cuidado** con la cantidad de azúcar que tomas	*be careful with the amount of sugar you have*

¿Llevas una vida sana? (pages 82–83):

¿Cómo es tu *rutina?	*What is your routine like?*
Por la mañana/tarde/noche ...	*In the morning/afternoon/night ...*
Durante el día/la semana ...	*During the day/week ...*
El fin de semana ...	*At the weekend ...*
Los domingos ...	*On Sundays ...*
todos los días / fines de semana	*every day / weekend*
algunos días / fines de semana	*some days/weekends*
Primero / Luego ...	*First / Later/Afterwards ...*
Finalmente ...	*Finally ...*
Antes de / Después de ...	*Before / After ...*
hacer los deberes	*doing homework*
levantarme / vestirme	*getting up / getting dressed*
terminar las clases	*finishing classes*
tomar el desayuno	*having breakfast*
volver a casa / **acostarme**	*returning home / going to bed*
¿Qué costumbres sanas tienes?	*What healthy habits do you have?*
Duermo (bien) / *Entreno	*I sleep (well) / I train*
Hago diez minutos de ejercicio.	*I do ten minutes of exercise.*
Llevo una botella de agua.	*I carry a bottle of water.*
Me levanto / Me acuesto ...	*I get up / I go to bed ...*
a las ... / a la misma hora	*at ... (o'clock) / at the same time*
tarde / temprano	*late / early*
Tomo un descanso / **Me relajo**	*I have a rest / I relax*
Suelo comer / hacer *meditación	*I usually eat / do meditation*
Tengo / Tienes / Tiene ...	*I am / you are / he/she is ...*
sed/hambre	*thirsty/hungry*
sueño/calor	*sleepy/hot*
¿Tienes costumbres malsanas?	*Do you have any unhealthy habits?*
Si tengo hambre/sed, ...	*If I'm hungry/thirsty, ...*
tomo / como / bebo ...	*I have / I eat / I drink ...*
mucha agua	*lots of water*
algunos/muchos *dulces	*some/lots of sweets*
algunas/muchas verduras	*some/lots of vegetables*
chocolate/fruta/pasta	*chocolate/fruit/pasta*

¡Los tiempos cambian! (pages 86–87):

¿Cómo eras antes?	*What were you like before?*
Cuando era pequeño/a ...	*When I was little*
Cuando era más joven ...	*When I was younger ...*
Antes / Cuando tenía ... años, ...	*Before / When I was ... years old, ...*
dormía bien/mal	*I slept well/badly*
me levantaba / **me acostaba** ...	*I got up / I went to bed ...*
temprano, pronto / tarde	*early / late*
(no) era muy activo/a.	*I was (not) very active.*
(no) tenía ...	*I had / I didn't have ...*
(mucha) energía	*(lots of) energy*
una vida sana	*a healthy life*
(nunca) iba al **gimnasio**	*I (never) went to the gym*

¿Qué te gustaba comer y beber?	*What did you like to eat and drink?*
Solía comer/beber ...	*I usually ate/drank ...*
(No) Comía ...	*I ate / I didn't eat ...*
Bebía demasiado café.	*I drank too much coffee.*
Me encantaban los postres.	*I loved desserts.*
Me gustaba comer *dulces.	*I liked eating sweets.*

¿Qué hacías en tu tiempo libre cuando eras pequeño/a?	*What did you do in your free time when you were little?*
(No) Hacía (mucho/suficiente) ejercicio/deporte.	*I did / didn't do (lots of/enough) exercise/sports.*
(No) Iba a la piscina (tres veces a la semana).	*I went / didn't go to the pool (three times a week).*
(No) Montaba en *bici (cada día).	*I rode / didn't ride my bike (every day).*
(No) Jugaba ...	*I played / didn't play ...*
(Siempre) Estaba cansado/a y enfermo/a.	*I was (always) tired and sick.*

¿Cómo es tu *rutina ahora?	What is your routine like now?
Cuido más mi dieta.	*I look after my diet more.*

¿Cómo eres ahora?	*What are you like now?*
Me siento mucho mejor.	*I feel a lot better.*
Soy bastante activo/a.	*I am quite active.*
No / **Ya no** ...	*I don't / no longer ...*
hago (mucho) ejercicio/ deporte	*do (lots of) exercise/sports*
hago nada para **mantenerme** en forma	*do anything to stay in shape*
me levanto temprano como antes	*get up early like before*

¿Qué te gusta comer y beber?	*What do you like to eat and drink?*
(No) Como comida rápida/ malsana.	*I (don't) eat fast/unhealthy food.*
(**Ya no**) Bebo/Como ...	*I (no longer) eat/drink ...*
Prefiero las bebidas con azúcar.	*I prefer sugary drinks.*
Me gusta comer comida sana.	*I like to eat healthy food.*

¿Qué haces en tu tiempo libre?	*What do you do in your free time?*
(No) Hago ejercicio/deporte.	*I (don't) do exercise/sports.*
(No) **Voy** al **gimnasio**/cine.	*I (don't) go to the gym/cinema.*
(No) Juego a *los videojuegos.	*I (don't) play video games.*

¡Qué mal estoy! (pages 88–89):

¿Qué te pasa?	*What's the matter with you?*
Me / te / le duele(n) ...	*My / your / his/her ... hurt(s)*
el brazo / el estomago	*arm / stomach*
el pie / la boca / la mano	*foot / mouth / hand*
la cabeza / la espalda	*head / back*
la garganta / la nariz	*throat / nose*
la rodilla / la pierna	*knee / leg*
los oídos / los ojos / los dedos	*ears / eyes / fingers*
los dientes / (todo) el cuerpo	teeth / *(whole) body*
Estoy (muy) enfermo/a.	*I am (very) sick.*
Me siento (muy) mal.	*I feel (very) unwell.*
No **me siento** bien porque tengo ...	*I don't feel well because I have ...*
fiebre / **dolor de cabeza**	a fever / *a headache*
una **herida**	*an injury*
Ayer / La semana pasada ...	*Yesterday / Last week ...*
me rompí / me corté ...	*I broke my / I cut my ...*
me quemé ...	*I burned my ...*
la pierna/**piel**	*leg/skin*

¿Desde cuándo estás así?	*Since when have you been like this?*
desde (ayer)	*since (yesterday)*
desde hace una hora / más de (dos días)	*for an hour / more than (two days)*

Debes / Necesitas ...	*You must / You need to ...*
Tienes que ...	*You have to ...*
quedarte en la cama / en casa	*stay in bed / at home*
descansar/dormir	*rest/sleep*
comprar medicinas (en la farmacia)	*buy medicine (at the chemist's)*
evitar el sol	*avoid the sun*
recuperarte/**relajarte**	*recover/relax*
ir al **médico**/hospital	*go to the doctor's/hospital*
Voy a pedir cita con el **médico**.	*I am going to ask for a doctor's appointment.*

Mi salud, de la cabeza a los pies (pages 90–91):

¿Cómo cambiarás tu estilo de vida?	*How will you change your lifestyle?*
Si dejo de comer/beber/ fumar, ...	*If I stop eating/drinking/ smoking, ...*
Si duermo (al menos ocho horas), ...	*If I sleep (at least eight hours), ...*
Si practico más deporte, ...	*If I practise more sport, ...*
Si tengo (una vida más activa), ...	*If I have (a more active life), ...*
me sentiré más feliz	*I will be happier*
mi salud física/mental mejorará	*my physical/mental health will improve*
dormiré mejor	*I will sleep better*
me levantaré con más energía	*I will wake up with more energy*

¿Qué harás para mejorar tu salud en el futuro?	*What will you do to improve your health in the future?*
Para cambiar esta mala costumbre, ...	*To change this bad habit, ...*
Para mejorar mi dieta/salud ...	*To improve my diet/health ...*
dormiré más tiempo / beberé agua	*I will sleep longer / I will drink water*
no usaré el móvil (después de las nueve)	*I won't use my mobile (after nine o'clock)*
iré (al **gimnasio**)	*I will go (to the gym)*
evitaré beber alcohol y fumar	*I will avoid drinking alcohol and smoking*
empezaré a practicar deporte	*I will start practising sport*

La vida escolar en España (pages 104–105):

¿Cómo es tu instituto?	*What's your high school like?*
el **curso**/día escolar	*school year/day*
el instituto / la escuela *primaria	*secondary school / primary school*
la escuela pública/privada	*state/private school*
los alumnos/estudios	*students/studies*
la formación **profesional** / *el bachillerato	*vocational training / baccalaureate (equivalent to A Levels)*
¿Qué ropa llevas en el insti?	*What clothes do you wear at school?*
Llevo ...	*I wear ...*
ropa deportiva / un jersey	*sports clothes / a jumper*
un pantalón/uniforme	*trousers / a uniform*
una camisa/camiseta	*a shirt/T-shirt*
un vestido / una falda	*a dress/shirt*
una chaqueta/corbata	*a jacket/tie*
unos zapatos	*some shoes*
unas zapatillas de deporte	*some trainers*

¿Cómo son las instalaciones?	*What are the facilities like?*
el edificio / la biblioteca	*building / library*
los campos deportivos	*sports grounds*
el gimnasio	*gym*
*los laboratorios / *las aulas	*laboratories / classrooms*
caro/a(s) / barato/a(s)	*expensive / cheap*
cómodo/a(s) / incómodo/a(s)	*comfortable / uncomfortable*
bonito/a(s) / feo/a(s)	*beautiful, nice / ugly*
divertido/a(s) / excelente(s)	*funny, amusing / excellent*
viejo/a(s) / **decepcionante(s)**	*old / disappointing*
¿Cómo es el director / la directora?	*What is the headteacher like?*
En mi opinión, el director / la directora ...	*In my opinion, the headteacher ...*
es alegre / buenísimo/a	*is happy/cheerful / very good*
tiene buen **sentido** del **humor**	*has a good sense of humour*

Un día en el insti (pages 106–107):

¿Cómo vas al instituto?	*How do you go to school?*
Voy (al insti) ...	*I go (to school) ...*
a pie / en coche/tren	*on foot / by car/train*
en autobús/bici	*by bus/bike*
¿Cómo es tu día escolar?	*What is your school day like?*
Las clases empiezan/terminan a las ...	*Classes start/end at ...*
Cada clase dura una hora.	*Each class lasts an hour.*
Hay un descanso a las ...	*There is a break at ...*
¿Qué sueles hacer a la hora de comer?	*What do you usually do at lunchtime?*
Salgo al patio.	*I go out to the playground.*
Traigo un bocadillo.	*I bring a sandwich.*
Voy a la biblioteca/cantina.	*I go to the library/canteen.*
¿Qué día de la semana prefieres?	*Which day of the week do you prefer?*
Prefiero los martes cuando tengo/tenemos ...	*I prefer Tuesdays when I/we have ...*
actividades *extraescolares.	*extracurricular activities.*
todas mis asignaturas favoritas.	*all my favourite subjects.*
¿Qué haces después del insti?	*What do you do after school?*
Soy miembro de un club.	*I am a member of a club.*
Soy **capitán/capitana** del equipo.	*I am captain of the team.*

Ayudo con la radio escolar.	*I help with the school radio.*
Toco en la orquesta.	*I play in the orchestra.*
¿Cuánto tiempo llevas ...?	*How long have you been ...?*
Llevo/**Llevamos** dos años ...	*I/We have been ... for two years.*
participando en el proyecto	*participating in the project*
asistiendo a clases de baile	*attending dance classes*
jugando al voleibol	*playing volleyball*
¿Por qué te gusta esta actividad?	*Why do you like this activity?*
Me encanta porque ...	*I love it because it...*
te ayuda a ...	*helps you to ...*
te da **la oportunidad** de ...	*gives you the opportunity to ...*
te anima a ... / **te permite** ...	*encourages/allows you to ...*
aprender cosas nuevas	*learn new things*
desarrollar tus talentos	*develop your talents*
hacer nuevos amigos	*make new friends*
ser *creativo/a	*be creative*
te da ...	*gives you ...*
más confianza	*more confidence*
un **sentimiento** de éxito	*a sense of accomplishment*
te hace **sentir orgulloso/a**	*makes you feel proud*
¿Qué hiciste recientemente con el club/equipo?	*What did you do recently with the club/team?*
Organizamos una competición ...	*We organised a competition ...*
Hicimos un espectáculo de ...	*We did a ... show*
Acabo de ...	*I have just ...*

¿Qué tal tus estudios? (pages 108–109):

¿Cuál es tu asignatura favorita?	*What is your favourite subject?*
Mi asignatura favorita es ...	*My favourite subject is ...*
Lo que más/menos me gusta es ...	*What I like the most/least is ...*
Se me da(n) bien/mal ...	*I am good/bad at ...*
el dibujo/teatro	*Art/Drama*
el español/inglés	*Spanish/English*
la geografía/historia	*Geography/History*
la *literatura/música	*Literature/Music*
la religión/educación física	*Religion/PE*
la tecnología/*informática	*Technology/IT*
las ciencias/matemáticas	*Science(s)/Maths*
los idiomas	*languages*
porque / ya que es/son ...	*because it is / they are ...*
aburrido/a(s) / difícil(es)	*boring / difficult*
divertido/a(s) / duro/a(s)	*fun/amusing / hard*
fácil(es) / importante(s)	*easy / important*
imposible(s) / interesante(s)	*impossible / interesting*
útil(es) / **práctico/a(s)**	*useful / practical*
complejo/a(s)	*complex*
pesado/a(s)	*annoying, boring*

Me cuesta (mucho) ...	*I find it very difficult to ...*
Es difícil ...	*It is difficult ...*
recordar todas las fechas	*to remember all the dates*
resolver los problemas	*to resolve problems*
¿Qué vas a hacer para tener éxito?	*What are you going to do to be successful?*
Para aprobar mis exámenes, ...	*To pass my exams, ...*
Para mejorar mi **nivel**, ...	*To improve my level, ...*
Para sacar buenas/mejores notas, ...	*To get good/better marks, ...*
Para tener éxito en la **prueba**, ...	*To be successful in the test, ...*
aprenderé de mis errores	*I will learn from my mistakes*
participaré más en clase	*I will participate more in class*
preguntaré al profesor si no entiendo	*I will ask the teacher if I don't understand*
pasaré más tiempo *repasando	*I will spend more time revising*
asistiré a clases de *repaso	*I will attend revision classes*

¿Cómo cambiarías tu instituto? (pages 110–111):

¿Qué harías para mejorar tu instituto?	*What would you do to improve your school?*
Mejoraría la calidad de la comida.	*I would improve the quality of the food.*
Reduciría el precio del uniforme.	*I would reduce the price of the uniform.*
Permitiría el uso de los móviles en clase.	*I would allow the use of mobiles in class.*
Construiría un nuevo **gimnasio**.	*I would build a new gym.*
Ofrecería más actividades *extraescolares.	*I would offer more extracurricular activities.*
¿Qué es lo malo de tu instituto?	***What is the bad thing about your school?***
Lo malo de mi instituto es **que** ...	*The bad thing about my school is that ...*
las instalaciones deportivas son viejas / están en mal **estado**	*the sports facilities are old / are in a bad state*
las reglas son demasiado estrictas	*the rules are too strict*
los teléfonos están prohibidos	*telephones are prohibited*
tenemos que **gastar** dinero en ...	*we have to spend money on ...*
muchos alumnos ... tienen miedo / **sufren** *amenazas.	*many students ... are scared / suffer threats.*
Hay que ...	*You have to ...*
llegar a tiempo	*arrive on time*
respetar a los alumnos/ profesores	*respect students/teachers*
mantener limpio el patio	*keep the playground clean*
quedarse sentado durante la clase	*stay seated during class*
No **se** debe ...	*You must (not) ...*
No **se permite** / Está prohibido ...	*You are (not) allowed to ...*
traer aparatos **electrónicos** personales	*bring personal electronic devices*
tirar **basura** al suelo	*throw rubbish on the floor*
comer/beber en *las aulas	*eat/drink in classrooms*
ir al servicio sin *el permiso del profesor	*go to the toilet without the teacher's permission*
(No) Estoy de acuerdo con esta norma porque ...	*I (don't) agree with this rule because ...*

La gente de mi insti (pages 112–113):

¿Qué tipo de alumno eres?	*What type of student are you?*
Soy muy/bastante/demasiado ... responsable / trabajador(a) independiente / *perezoso/a	*I am very/quite/too ... responsible / hard-working independent / lazy*
Tengo ganas de tener éxito.	*I am keen to be successful.*
(No) Quiero / (No) Me gusta ... aprender / aprobar estudiar / *repasar	*I (don't) want / I (don't) like ... to learn / to pass to study / to revise*
¿Cómo te preparas para el día escolar?	***How do you prepare for a school day?***
(No/Nunca) Llego temprano / a tiempo.	*I (don't/never) arrive early / on time.*
¿Dónde sueles hacer los deberes?	***Where do you usually do your homework?***
Los hago en casa o en la biblioteca.	*I do it at home or in the library.*
No los hago **jamás**.	*I never do it.*
¿Aprendes mucho en clase?	***Do you learn a lot in class?***
(No) Escucho al profe / a nadie.	*I (don't) listen to the teacher / to anyone.*
(No) Hago todas **las tareas**.	*I (don't) do all the homework.*
Suelo ...	*I usually ...*
sacar buenas notas	*get good marks*
recordar lo que necesito	*remember what I need*
¿Cómo sería tu profesor(a) *ideal?	***What would your ideal teacher be like?***
Mi profesor(a) *ideal ...	*My ideal teacher ...*
haría mucho esfuerzo para ...	*would make a lot of effort to ...*
no **gritaría** nada	*wouldn't shout at all*
no **nos** pondría demasiados deberes	*wouldn't give us too much homework*
no sería demasiado estricto/a	*wouldn't be too strict*
nos dejaría usar el móvil	*would let up use our mobile*
nunca llegaría tarde a clase	*would never arrive late to class*
tendría un buen **sentido** del **humor**	*would have a good sense of humour*
sería *comprensivo/a	*would be understanding*

El viaje de fin de curso (pages 114–115):

¿Cómo fue el viaje?	*How was the trip?*
(des)afortunadamente	*(un)fortunately*
especialmente / generalmente	*especially / generally*
inmediatamente / rápidamente	*immediately / quickly*
recientemente / **actualmente**	*recently / currently*
seguramente / **verdaderamente**	*surely / truly*
Hicimos un **viaje** de fin de **curso**.	*We went on an end-of-year trip.*
El primer/segundo/tercer día ...	*The first/second/third day ...*
¿Visitaste algún lugar de interés?	***Did you visit any place of interest?***
Visitamos el parque nacional ...	*We visited the ... national park.*
Fuimos al parque temático ...	*We went to the ... theme park.*
¿Qué otras actividades hiciste?	***What other activities did you do?***
Cada día hicimos actividades distintas.	*We did different activities each day.*
Asistimos a una clase de cocina.	*We attended a cookery class.*

Medellín, ciudad inteligente (pages 134-135):

¿Has visitado ...?	*Have you visited ...?*
(Ya) He/Has/Hemos ...	*I/You/We have (already)...*
También he/has/hemos ...	*I/You/We have also ...*
Todavía no he/has/hemos ...	*I/You/We haven't ... yet.*
alquilado / probado...	*rented / tried ...*
bebido / comido ...	*drunk / eaten ...*
ido (al museo)	*been (to the museum)*
subido / visto ...	*gone up / seen ...*
descubierto ...	*discovered ...*
viajado (en metro)	*travelled (by underground)*
visitado (el parque famoso)	*visited (the famous park)*

¿Dónde está el centro comercial más cercano?	*Where is the nearest shopping centre?*
Está ...	*It is ...*
al lado de ...	*next to ...*
delante de / detrás de ...	*in front of / behind ...*
cerca de / lejos de ...	*close to / far from ...*
la estación (de metro)	*the (underground) station*
el banco	*the bank*
Mira el plano.	*Look at the map.*
Pasa / Cruza ...	*Go past / Cross ...*
el puente / la plaza	*the bridge/square*
Toma la primera/segunda/ tercera calle ...	*Take the first/second/third street ...*
a la derecha/izquierda	*on the right/left*
Está a la derecha/izquierda.	*It is on the right/left.*

¿Qué hacemos mañana?	*What are we doing tomorrow?*
Me encantaría / Quiero ...	*I would love to / I want to ...*
Podemos ...	*We could ...*
Voy/Vamos a ...	*I am / We are going to ...*
ir de excursion / en autobús	*go on an outing / by bus*
tomar el metro	*take the underground*

En Colombia todo es posible (pages 132–133):

¿Qué hay en tu país/región?	*What is there in your country/ region?*
En (el norte de) mi país/ región ...	*In (the north of) my country/ region ...*
(no) hay ...	*there are / there aren't ...*
(no) tenemos ...	*we (don't) have ...*
mucho campo	*lots of countryside*
muchos lagos	*lots of lakes*
unos bosques / unas playas	*some forests / beaches*
un **paisaje** / **río** espectacular	*a spectacular landscape/ river*
comunidades *indígenas	*indigenous communities*
mucha *diversidad	*lots of diversity*
*selva tropical / *volcanes	*rainforest / volcanoes*
Se encuentra(n) en ...	*It is / They are found in ...*
Está(n) en ...	*It is / They are in ...*
el norte/sur	*the north/south*
el este/oeste	*the east/west*
el centro	*the centre*

Medellín ahora y antes (pages 136–137):

¿Cómo es?	*What is it like?*
este lugar / esta calle	*this place/street*
estos árboles / estas tiendas	*these trees/shops*
ese espacio (público)	*that (public) space*
esa carretera	*that road*
esos parques / esas zonas	*those parks/areas*
aquel barrio	*that neighbourhood (over there)*
aquella bibioteca	*that library (over there)*
aquellos castillos	*those castles (over there)*
aquellas vistas	*those views (over there)*
En **aquellos** tiempos ...	*In those days ...*

Ahora, ¿cómo es?	*What is it like now?*
Ahora ...	*Now ...*
está limpio/a / sucio/a	*it is clean / dirty*
hay / tiene ...	*there is/are / it has ...*
más árboles / menos violencia	*more trees / less violence*
tanto/a cultura/arte	*so much culture/art*
tantos problemas	*so many problems*
es ...	*it is ...*
más **sostenible** / **seguro/a**	*more sustainable / safer*
completamente diferente	*completely different*
tan cara/o	*so expensive*

Antes, ¿cómo era?	*What was it like before?*
Antes había ...	*Before there was/were ...*
muchos **delitos**	*lots of criminal offences*
menos edificios modernos	*fewer modern buildings*
mucha/tanta **basura**	*lots of/so much rubbish*
Antes era ...	*it was ...*
más pequeño/a / tranquilo/a	*smaller / quieter*
menos moderno/a	*less modern*
más *industrial / peligroso/a	*more industrial/dangerous*
Ha cambiado mucho porque...	*It has changed a lot because ...*
han abierto/creado ...	*they have opened/created ...*
han limpiado/mejorado ...	*they have cleaned/improved ...*
han construido ...	*they have built ...*
*han plantado ...	*they have planted ...*
*han renovado ...	*they have renovated ...*

Medellín, ciudad inteligente (pages 134-135):

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han limpiado/mejorado ...	*they have cleaned/improved ...*
han construido ...	*they have built ...*
*han plantado ...	*they have planted ...*
*han renovado ...	*they have renovated ...*

Year 10 - MUSIC - Component 1

Compositional Features	
Melody (the tune)	**Ascending** (rising) and **descending** (falling) **Repetition** (repeating with no changes) and **contrast** (something different) **Imitation** (repeating with some changes) **Ostinato** (A short repeated idea) **Chromatic** (using notes not in the original key - extra sharps and flats) **Conjunct** (moving in step) **disjunct** (moving in leaps) **Sequence** (repeating, but at a different pitch)
Harmony (chords)	**Triad** (a chord with three notes) **Power Chord** (Only playing the root and fifth note of a chord) **Dissonance** (clashing notes played at the same time) **Consonance** (notes that fit and sound nice together) **Chord sequence** (the order of a pattern of chords following each other) **Tierce de Picardie** (when the piece is in a minor key, but ends with the very last chord being a major chord unexpectedly)
Tonality (the key)	**Tonal** (in a major or minor key) **Atonal** (no sense of key) **Modal** (old fashioned scales) **Pentatonic** (only uses the five note scale) **Diatonic** (only uses notes found in the key of the piece) **Chromatic** (Adds extra notes other than those found in the key – sharps/flats) **Modulation** (changing the key of the piece)
Rhythm (the pattern and lengths of notes and silences)	**On the beat** (playing on one of the beats you would tap your toe to. **Off-beat** (Playing in between the beats you would tap your toe to) **Syncopation** (playing off or in between the beat) **Tempo** (the speed of the beat) **Rubato** (not sticking strictly to the beat to add emotion) **Swing /swung rhythms** (played differently to give a swinging feeling)
Structure (the order in which the music is set out)	**Binary Form** (Music in two parts – section A and section B) **Ternary Form** (Music in three parts – section A, section B, Section A) **Strophic** (same music for each section - A,A,A – like a hymn or carol) **Theme and Variations** (A theme, followed by changes to the theme) **Song Form**)Intro, verse, chorus, verse chorus, bridge, chorus, outro)

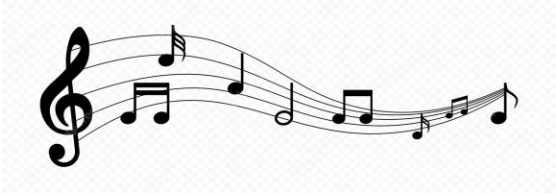
Sonic Features	
Instrumentation (the instruments playing and what they are doing)	**Solo** (1 performer) **Duet** (2 performers) **Trio** (three performers) **Quartet** (4 performers) **Voice ranges - Soprano, alto, tenor, bass, falsetto, treble.** **Acapella** (singing without any accompaniment) **Backing vocals** (support singer, harmonies) **Chorus** (music written for a choir) **Orchestra** **Brass section** (trumpet, trombone, french horn, tuba) **String section** (violin, viola, cello, double bass, harp) **Woodwind** (flute, clarinet, oboe, saxophone, bassoon) **Percussion section** (timpani, triangle, tambourine, cymbals, xylophone, glockenspiel)
Timbre and techniques (the way instruments are played)	**Stringed instruments** **Pizzicato** (plucking the strings) **Arco** (using the bow on strings) **Double stopping** (playing two strings at once) **Tremelo** (quickly repeating the same note like trembling) **Brass instruments** **Mute** (putting a cork shaped object in the bell to dampen the sound) **General** **Glissando** (sliding) **Pedal** (on piano used to sustain the sound) notes **Vibrato** (making the sound waver up and down to add emotion) **Strumming, picking, hammer on** and **hammer off.** (guitar)
Texture	**Monophonic** (only one part playing on its own) **Melody and Accompaniment** (melody plus some chords or ideas with it) **Call and Response** (one idea played/sung and another responds) **Homophonic** (all parts move at the same time) **Polyphonic** (Several lines of music at the same time) **Unison** (everyone playing the same melody)

Year 11 MUSIC – Component 2

Music Skills Development

Learning Aim A: Professional and skills for the music industry.

Professional Skills
Time management
Self-discipline
Working with others
Correct and safe use of equipment
Identifying resources
Auditing existing skills
Planning Music Skills Development
Planning targets for development
Organised approach
Managing equipment
Capturing musical development
Sharing and commenting on work



1. Music Performance

2. Creating Original Music

3. Music Production

Compositional Features	
Elements of music and techniques that are used to create a piece.	
Melody	Features of the melody/ tune.
Harmony	Different features that make up the accompaniment.
Tonality	The key the piece is in – major, minor, sharps an flats.
Rhythm	Features that can be heard in the rhythms of the piece.
Structure	The way the music is laid out.

Sonic Features	
Features to do with how the music sounds.	
Instrumentation	The instruments used to create a piece of music.
timbre	Instrumental tone and playing techniques/effects.
texture	Focusing on the number of musical lines being played.
Production	How music is produced – digital software and recording.

Learning Aim B: Apply skills and techniques in development.

Music Performance
Tuning
Learning repertoire
Physical preparation and exercises
Instrumental/vocal techniques
Practice routines – warm-ups/scales
Following accompaniment
Composing/Creating Original Music
Exploring and Extending Ideas
Using structure effectively
Rhythmic and melodic patterns
Development of harmony
Music Production
Using software and audio tools
Using software instruments
Inputting and editing audio
Using effects
Structuring music

Year 11 BTEC Dance Knowledge Organiser – Component 2

What is a stimulus?

A stimulus is the starting point/theme of a dance. Anything can be used as a stimulus if it allows the choreographer to generate ideas for movement. The stimulus of a dance can be communicated to the audience through movement or through constituent features.

Who creates briefs for choreographers?

- Producers/artists for a music videos
- Local Councils
- Directors of a theatre productions or films
- Funding organisations
- Theatres
- Marketing companies
- An individual (for example wedding dance choreography)
- Dance Companies or choreographers

Physical Skills: Aspects enabling effective performance, that can be trained and developed through technique.

Posture: The way the body is held.

Alignment: Correct placement of body parts in relation to each other.

Strength: Muscular power.

Stamina: Ability to maintain physical and mental energy over periods of time.

Balance: A steady or held position achieved by an even distribution of weight.

Coordination: The efficient combination of body parts

Flexibility: The range of movement in the joints (involving muscles, tendons and ligaments).

Control: The ability to start and stop movement, change direction and hold a shape efficiently.

Extension: Lengthening one or more muscles or limbs

Mobility: The range of movement in a joint; the ability to move fluently from action to action

Interpretive skills: Aspects that contribute to performance artistry and that engage the audience. You have to actively think about applying these skills.

Facial expressions: Use of the face to show mood, feeling or character.

Projection: The energy the dancer uses to connect with and draw in the audience

Musicality: The ability to make the unique qualities of the accompaniment evident in performance.

Sense of style: Characteristic way of dancing.

Dynamic Awareness: Applying variation of qualities of movement, considering speed, strength and flow

Focus: Use of the eyes to enhance performance or interpretative qualities.

Timing: The use of time or counts when matching movements to sound and/or other dancers.

Key words for choreography:

- **Stimulus** – The starting point for a dance
- **Motif** – A short phrase of movement
- **5 basic dance actions** – 5 basic movements that must be included in all pieces of choreography
- **Motif development** – Developing an original motif using choreographic devices and RADS.
- **Structure** – How the dance is pieced together to communicate the stimulus
- **Target Audience** – a particular group that the performance is aimed at

Technical Skills: These include accuracy of action, timing, dynamic, rhythmic and spatial content and the reproduction of movement in a stylistically accurate way

Rhythm: Repeated patterns of sound or movement

Spatial Awareness: Consciousness of the surrounding space and its effective use.

Action: What a dancer does e.g. travelling, turning, elevation, gesture, stillness, use of body parts, floor-work and the transference of weight

Dynamic: The qualities of movement based upon variations in speed, strength and flow

Stylistic Qualities: Qualities which define a dance style/practitioner

Mental Skills:

Confidence: A measure of domain-specific self-esteem as applied to how a person feels about their social and recreational dance ability.

Movement Memory: The automatic recall of learned movement material, without conscious thought.

Commitment: The state or quality of being dedicated.

Concentration: The action or power of focusing all one's attention

Discipline: Learning, practicing, and demonstrating expected behaviors specifically associated with dance. Discipline comes from the desire to meet and obtain the desired results in class, that is, learning and perfecting the steps taught.

Responding to feedback: Acting upon advice from teacher and peers, using this to improve performance.

Constituent features:

Constituent features refer to anything that you see in the performance space. These include the characteristics of choreography, the physical and the aural setting. Constituent features are used to enhance a performance and to communicate the stimulus/choreographic intention with the audience.

Personal Plan – Smart Targets:

- **Specific**

What is your specific target and why?

- **Measurable-** Is it measurable?

How will you measure your target?

Roles, Responsibilities & Skills:

When creating a piece of choreography, you will take on both the role of a choreographer and a dancer.

Choreographer - A choreographer's responsibility it to develop ideas from the stimulus or brief and use this to create movement. They have to develop the movement using choreographic devices and then teach it to the dancers. Choreographer's choose the dance style for the piece and give feedback to the dancers throughout the rehearsal process. Skills needed to do this include the following:

- Choreography skills
- Creativity



- **Characteristics of choreography** - Dance style, stimulus, subject matter, number/gender of dancers, action content, choreographic principles, form, and structure.
- **Lighting -** The use of light in a performance, this can include coloured washes, spotlights, blackouts, and natural light.
- **Sound/Aural Setting** - Aural setting includes the music, sound, any spoken words, any audible aspects of the dance and silence.
- **Set/Physical Setting/Performance Environment** - The set for a performance includes the type of stage, use of props, any raised platforms, backdrops, and special effects.
- **Costume -** What the dancers wear when they perform. This can include jewellery or accessories depending on the piece.

Filming yourself over a period of time to measure the progression.

Take photos of my progression each lesson. Timing the amount you can do.

Asking your peer to provide feedback over a period of time.

- **Achievable-** is it achievable?

Is there going to be big distractions to prevent you from reaching your smart target?
Are you motivated enough to achieve them?
Is there enough time for you to achieve this goal?

- **Relevant -** how is it relevant and realistic to the course?

- **Time-** How long are you going to give yourself till what date? E.G 27.11.23

- Communication skills
- Organisation skills
- Leadership skills
- Technical & performance skills

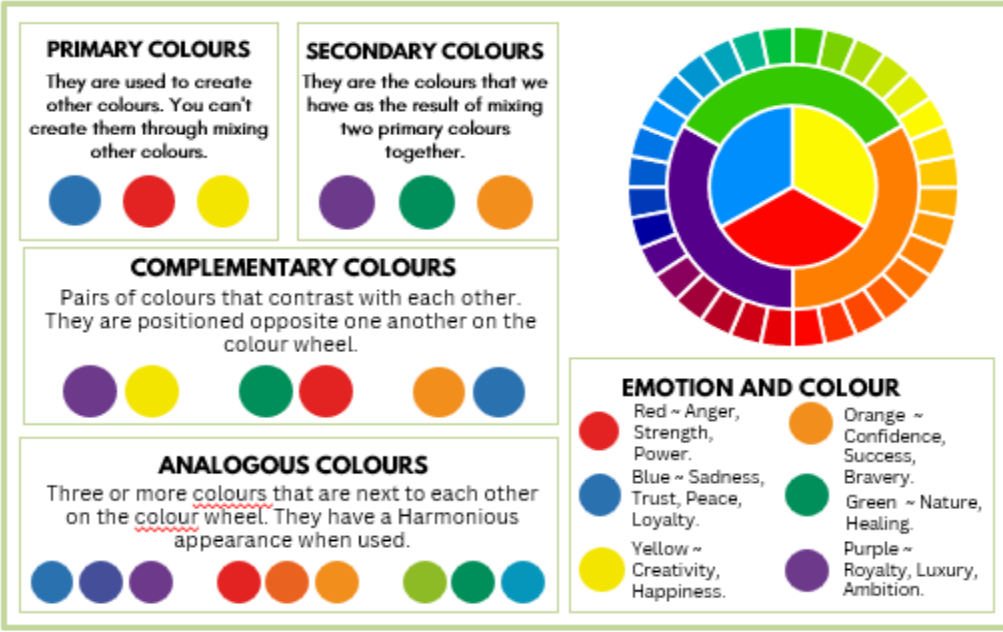
Dancer - A dancer's responsibility it to continuously develop their performance and technical skills so that they are able to learn and perform new movements. They should learn and remember the choreography as well as contributing to any choreography tasks that are set. They must attend all rehearsals and apply any feedback given by the choreographer. Skills needed to do this include the following:

- Creativity
- Communication skills
- Organisation skills
- Time management skills
- Technical & performance skill

Graphics: Annotations

Checklist

What have you done? what techniques or materials have you used?
Why did you do this? what are you trying to achieve?
Do you think this was successful?
Do you think this Is unsuccessful? If so, why and what could you change or do differently?
What have you learnt from this? how can this Inform your next piece of work?
How would the work be different If you used different media?
How does this relate to the artist/ theme/Brief?



Sentence Starters

This is an observational drawing that I created of a ...
This is a series of photographs I took ...
This is a response to the artist ...
I looked at the artist's use of ...

I drew this using ...
I painted this image with ... I looked carefully at ...
I constructed this from ...
I built layers by using collage materials like ...
I drew directly from life the ... observing the ...

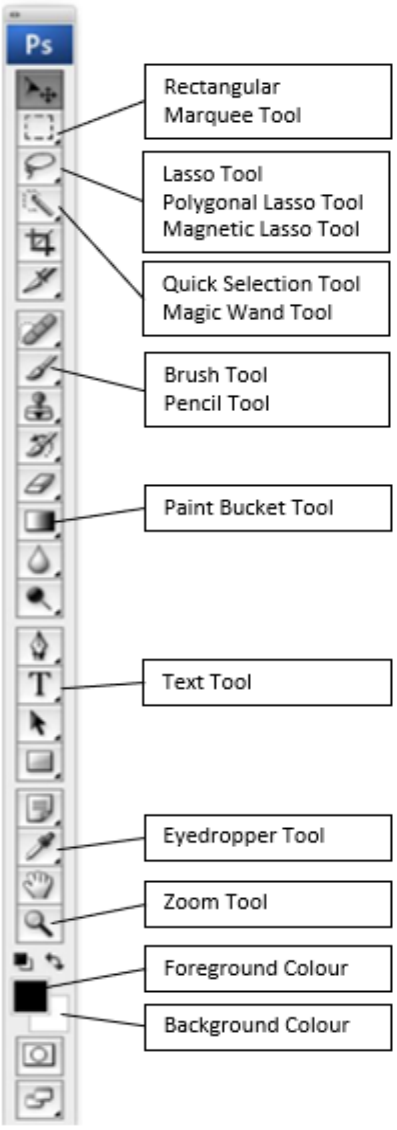
I have learnt about ...
By doing this experiment I have learnt ...
I began by ...
I have discovered ...
I improved my skills in ...
I feel more confident about ...
To build upon this idea I will ...
Next time I will try ...
In my opinion ...
I like how I have edited this image because ...

Final Checklist

- Used full sentences?
- Fully described the photograph?
- Said **HOW** and **WHY** you have created/ chose the image?
- Used Key Vocabulary?

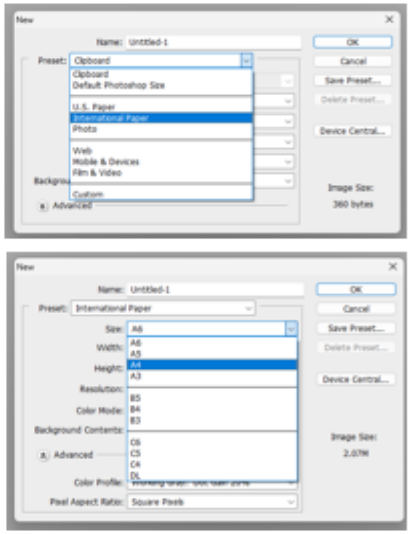
Photoshop

Photoshop Tools



New Page

1. Click File
2. Select New
3. Select Preset – International Paper
4. A4

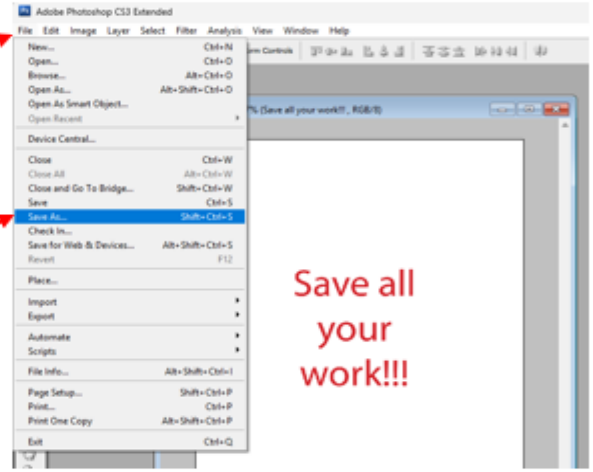


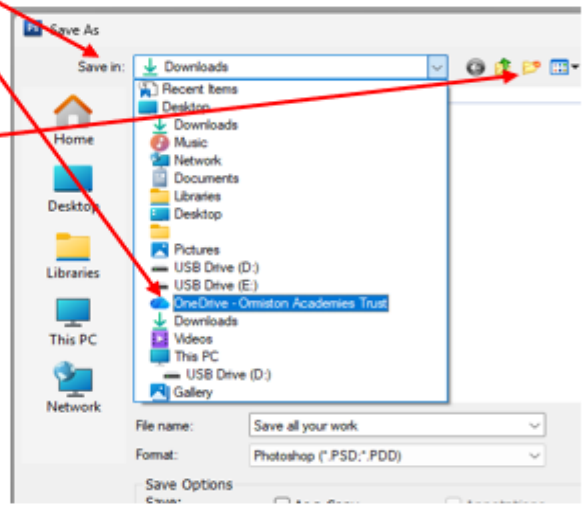
Commands

Ctrl + C	**Copy**
Ctrl + V	**Paste**
Ctrl + T	**Transform**
Ctrl + X	**Cut**
Ctrl + D	**Deselect**
Ctrl + J	**Duplicate Layer**

Saving your work

1. Click *File*
2. Click *Save As*
3. Click the *Save in* box.
4. Select *OneDrive*
5. Create a new folder called *Year 10 Photography*
6. Select this folder when you save any work from Photoshop or PowerPoint.





Graphics Key Skills

Saving your photographs

Card Reader

SD Card



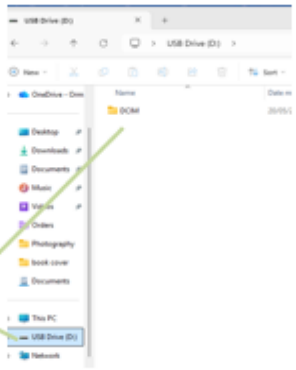
Plug the card reader into the USB port on the computer

Click the **Computer** icon on the desktop

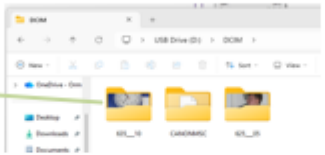


Click **USB Drive**

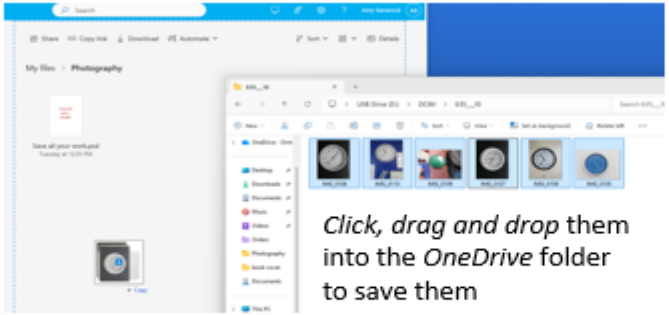
Open the **DCIM** folder



Click the folders to locate your photos

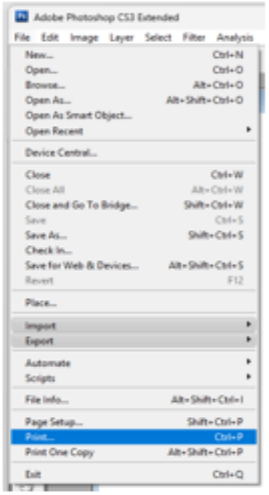


Highlight the photos you are saving.
Open your *OneDrive* folder.



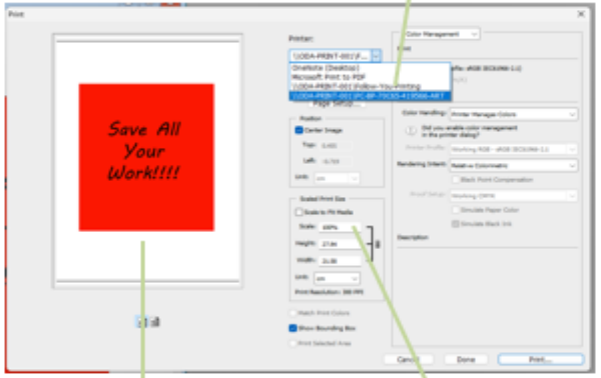
Click, drag and drop them into the *OneDrive* folder to save them

How to Print - Photoshop



1. Click File
2. Print

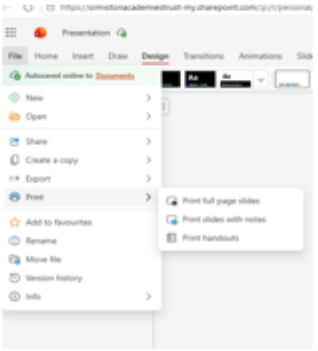
Select Printer called **PC-BP**



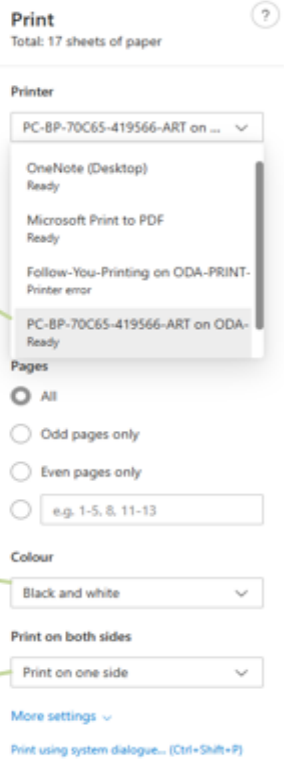
Preview of your print on A4

Make sure the scale is correct.
Adjust the % to the correct size.

How to Print - PowerPoint



1. Click File
2. Print
3. Print full page slides



Select Printer called **PC-BP**

Make sure it is in **colour**

And select **Print on one side**

Graphics: Artist/Designer Annotations

ANALYSING GRAPHIC ARTIST WORK	ANALYSIS SENTENCE STARTERS	FORMAL ELEMENTS	PROVIDING EXAMPLES
Answer these questions to describe one image in detail.	**You could use any of these to begin describing.**	**Use these points in your descriptions.**	**Add more information by using these.**
What do you see? What materials have been used? What is the composition and why? Do they use line, pattern, textures, tone, flat colour? How do they use this? What colours have been used and why? How does the work link to your own work: ie use of colours, patterns, subject matter, objects used? How will you use their ideas in your own work?	My first impressions of this piece are ... This artwork is about ... In this piece I can see ... I think the artist chose to use this media because ... I think the artist used ... to show ... the element of this image I find interesting is the artist's use of ... I think this piece is successful because ... This piece makes me feel ... I like ... I could use ... within my own work by ...	*Shape* Area enclosed by lines. Shapes can be outlines or shaded in. *Form* Three-Dimensional shape. *Texture* Is it smooth, rough or bumpy? *Pattern* A design that is repeated *Line* Can be bold, delicate, organic, controlled, free, thick, thin or loose. *Colour* Primary, Secondary, Tertiary. complementary, analogous, value. Can be used to create emotion. *Tone* Refers to Light and Dark.	For example ... Such as ... Which can be seen ... One way this is shown is... I have used this in my own work by ... I developed this idea further by ... This is shown in my experiment where I ... **CONNECTING POINTS** Additionally Similarly Also However Although On the other hand Alternatively

Photography Annotation

Checklist

What have you done? What techniques or materials have you used?

Why did you do this? What are you trying to achieve?

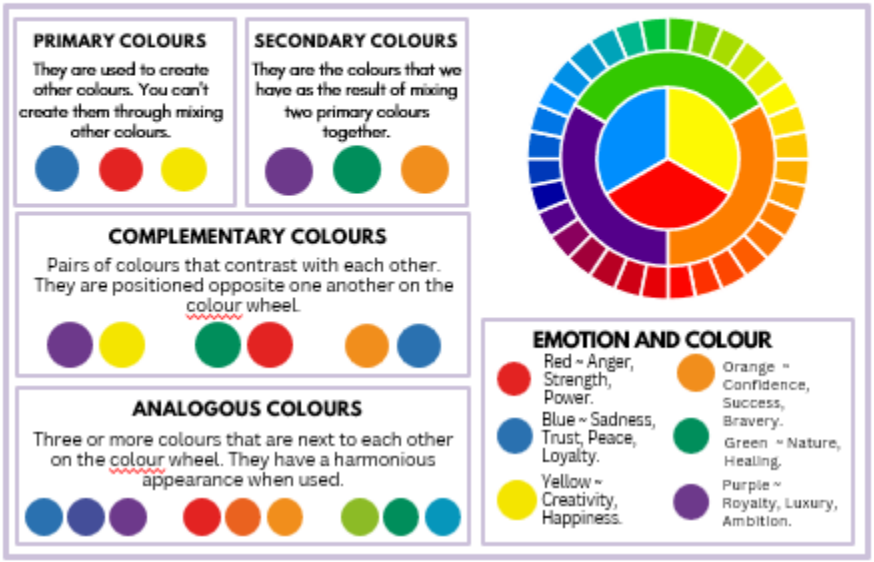
Do you think this was successful?

Do you think this was unsuccessful? If so, why and what could you change or do differently?

What have you learnt from this? How can this inform your next piece of work?

How would the work be different if you used a different composition, lighting, angle?

How does this relate to the photographer or theme?



Sentence Starters

This is my most successful image because ...
This is a series of photographs I took ...
This is a response to the photographer ...
I looked at the photographer's use of ...

I drew this using ...
I edited this image in Photoshop, using ...
I built layers by using collage materials like ...
I used a ... shot to achieve ...
I was inspired by ...

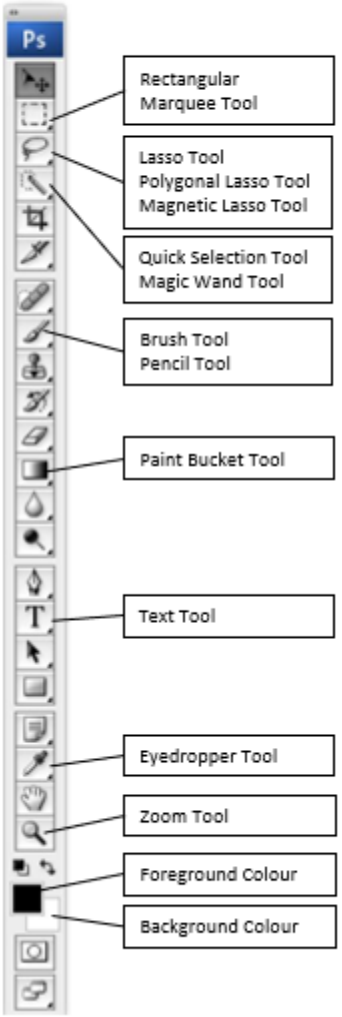
I have learnt about ...
By doing this experiment I have learnt ...
I began by ...
I have discovered ...
I improved my skills In ...
I feel more confident about ...
To build upon this idea I will ...
Next time I will try ...
In my opinion ...
I like how I have edited this image because ...

Have you?

- Used full sentences?
- Fully described the photograph?
- Said **HOW** and **WHY** you have created/ chose the image?
- Used Key Vocabulary?

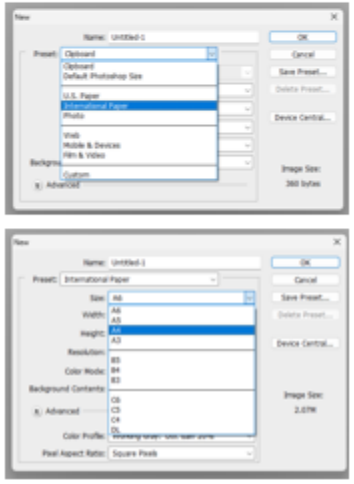
Photoshop

Photoshop Tools



New Page

1. Click File
2. Select New
3. Select Preset – International Paper
4. A4

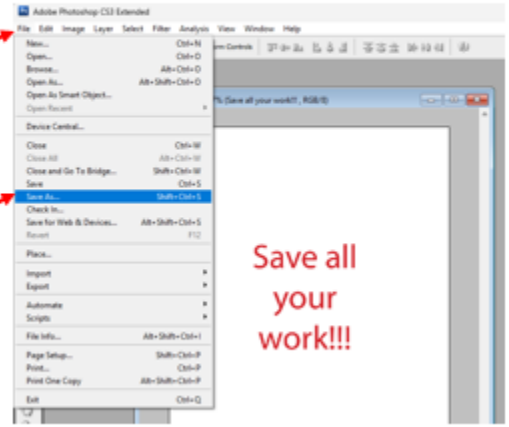


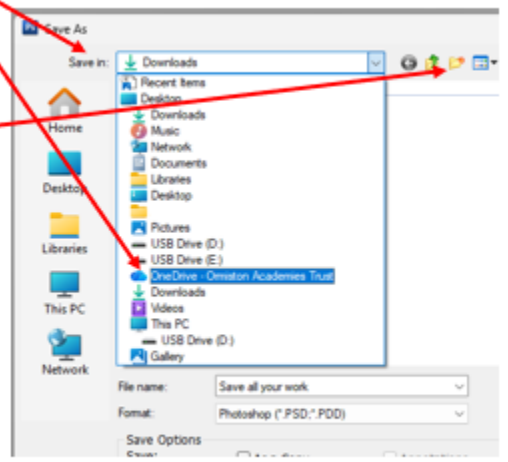
Commands

Ctrl + C	Copy
Ctrl + V	Paste
Ctrl + T	Transform
Ctrl + X	Cut
Ctrl + D	Deselect
Ctrl + J	Duplicate Layer

Saving your work

1. Click *File*
2. Click *Save As*
3. Click the *Save in* box.
4. Select *OneDrive*
5. Create a new folder called *Year 10 Photography*
6. Select this folder when you save any work from Photoshop or PowerPoint.





Photography Key Skills

Saving your photographs

Card Reader

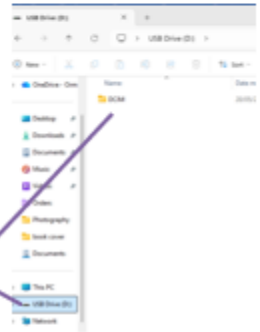
SD Card



Plug the card reader into the USB port on the computer

Click the **Computer** icon on the desktop

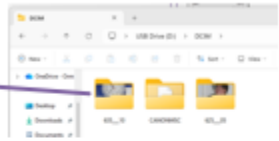




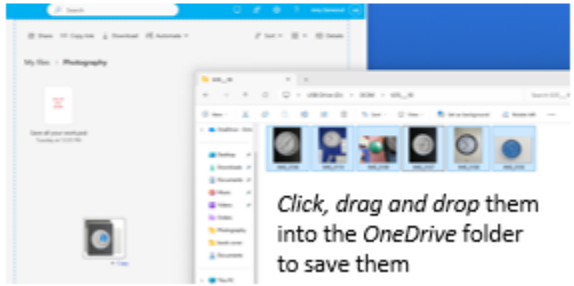
Click **USB Drive**

Open the **DCIM** folder

Click the folders to locate your photos

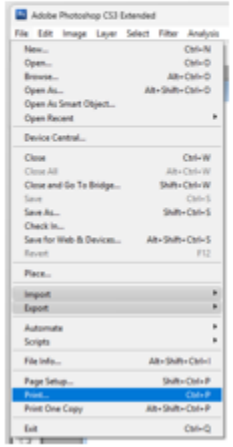


Highlight the photos you are saving.
Open your *OneDrive* folder.



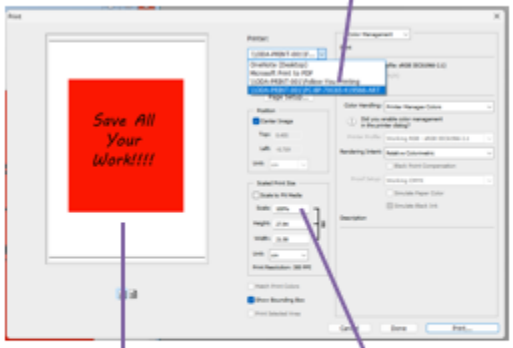
Click, drag and drop them into the *OneDrive* folder to save them

How to Print - Photoshop



1. Click File
2. Print

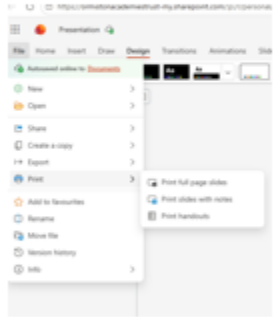
Select Printer called **PC-BP**



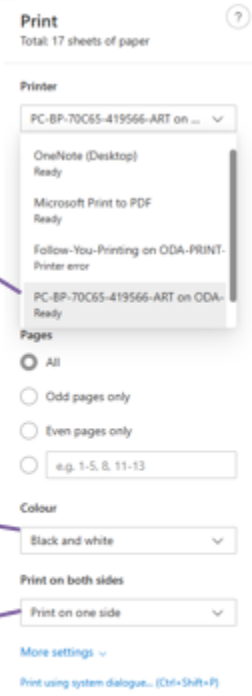
Preview of your print on A4

Make sure the scale is correct.
Adjust the % to the correct size.

How to Print - PowerPoint



1. Click File
2. Print
3. Print full page slides



Select Printer called **PC-BP**

Make sure it is in **colour**

And select **Print on one side**

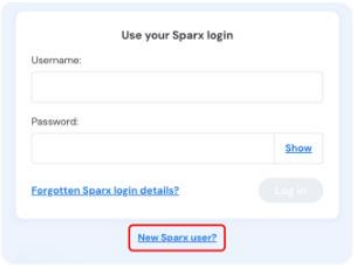
Photography: Photographer Annotations

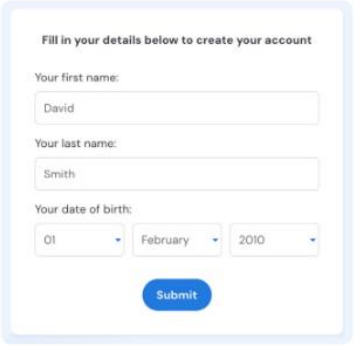
ANALYSING GRAPHIC ARTIST WORK	ANALYSIS SENTENCE STARTERS	FORMAL ELEMENTS	PROVIDING EXAMPLES
Answer these questions to describe one image in detail.	**You could use any of these to begin describing.**	**Use these points in your descriptions.**	**Add more information by using these.**
What do you see? What angle has been used? What is the composition? How is this achieved? What is the focal point? Why is this the focal point? What is the mood? How has this been achieved? How does this photograph link to your own work: ie use of colours, patterns, subject matter, objects used, mood, composition? How will you use their ideas in your own work?	My first impressions of this image are ... This photo is about ... In this photo I can see ... I think the photographer chose to use this... because ... I think the photographer took this to show... The element of this image I find interesting is the photographer's use of ... I think this photo is about... This photo makes me feel... I like ... I could use ... within my own work by ...	*Shape* Area enclosed by lines. Shapes can be outlines or shaded in. *Form* Three-Dimensional shape. *Texture* Is it smooth, rough or bumpy? *Pattern* A design that is repeated *Line* Can be bold, delicate, organic, controlled, free, thick, thin or loose. *Colour* Primary, Secondary, Tertiary. complementary, analogous, value. Can be used to create emotion. *Tone* Refers to Light and Dark.	For example ... Such as ... Which can be seen ... One way this is shown is... I have used this in my own work by ... I developed this idea further by ... This is shown in my experiment where I ...
			CONNECTING POINTS
			Additionally Similarly Also However Although On the other hand Alternatively

SPARX Maths

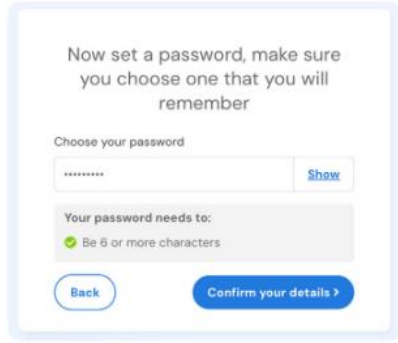
Student Guide to Logging In

1. Go to **sparxmaths.com**
2. Select **Student Login**
3. Carefully select your school from the list
4. Select **New Sparx user**
5. Enter your:
   - First Name
   - Last Name
   - Date of Birth
6. Click **Submit**

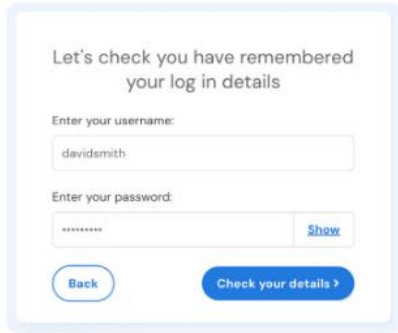




7. You will be prompted to set your own password. The password must be at least 6 characters long and you will need to remember it



8. Confirm your username and password, then click **Check your details**
9. You can now log in to Sparx using your username and password
10. If a password is lost, you can select the option to request a new password from your teacher



SPARX Maths

Week Topic	% Completed	Bookwork Code	Working out

SPARX Maths

Week Topic	% Completed	Bookwork Code	Working out

SPARX Maths

Week Topic	% Completed	Bookwork Code	Working out

SPARX Maths

Week Topic	% Completed	Bookwork Code	Working out

SPARX Maths

Week Topic	% Completed	Bookwork Code	Working out

Perimeter, area and volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

Area of a trapezium = $\frac{1}{2}(a+b)h$

Volume of a prism = area of cross section × length

Where r is the radius and d is the diameter:

Circumference of a circle = $2\pi r = \pi d$

Area of a circle = πr^2

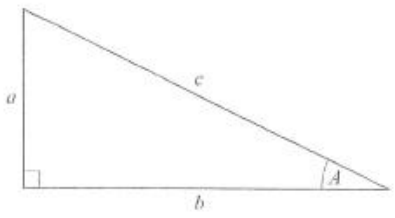
Quadratic formula

Higher only

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

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

Pythagoras' Theorem and Trigonometry

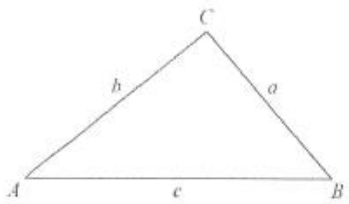


In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \qquad \cos A = \frac{b}{c} \qquad \tan A = \frac{a}{b}$$



Higher only

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

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

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

Area of triangle $= \frac{1}{2}ab\sin C$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

$$\text{Total accrued} = P\left(1 + \frac{r}{100}\right)^n$$

Probability

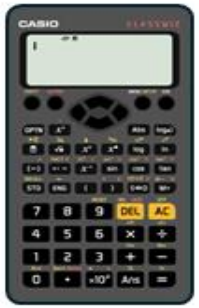
Where $\mathrm{P}(A)$ is the probability of outcome A and $\mathrm{P}(B)$ is the probability of outcome B:

$$\mathrm{P}(A \text{ or } B) = \mathrm{P}(A) + \mathrm{P}(B) - \mathrm{P}(A \text{ and } B)$$

$$\mathrm{P}(A \text{ and } B) = \mathrm{P}(A \text{ given } B)\,\mathrm{P}(B)$$

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Essential calculator buttons





1

Fraction button

Casio fx-83GT X	Casio fx-83GT CW

1) Press 

Then use the arrow keys to help you help you fill in the boxes.

2) Type the value of your numerator.

Now press 

Then use the arrow keys to move to the denominator and type that in.

2

Fraction button

Casio fx-83GT X	Casio fx-83GT CW

Simplifying works the same way on both calculators.

Type your fraction into the calculator and press execute.

$\frac{12}{15}$

$\frac{4}{5}$

3

Fraction button

Casio fx-83GT X	Casio fx-83GT CW

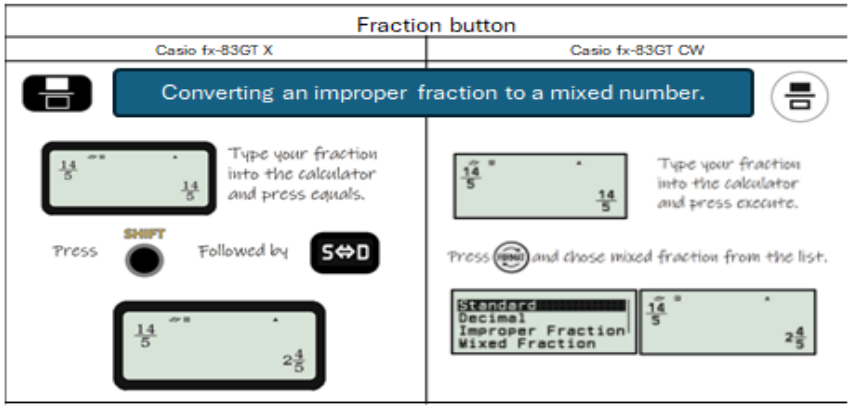
Using for calculations works the same way on both calculators.

Press the fraction button and type in your calculation

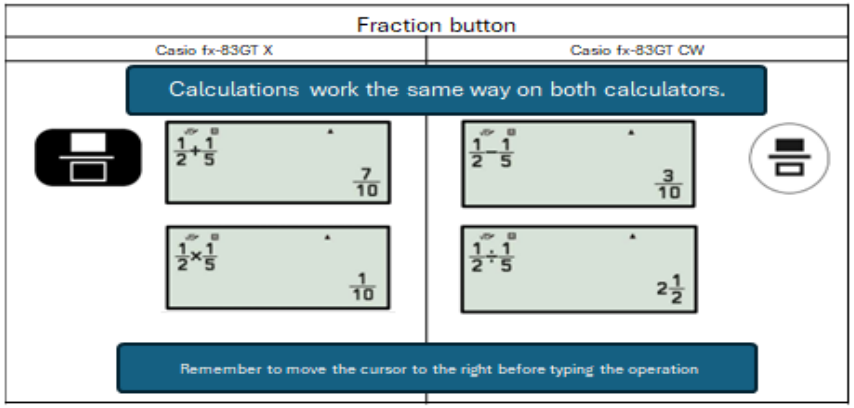
$\frac{13^2+11}{\sqrt{25}\times 6}$

6

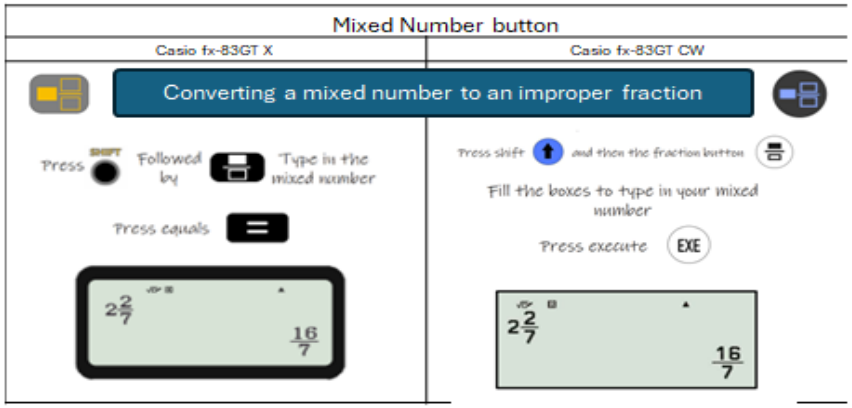
4


Fraction button
Casio fx-83GT X
Casio fx-83GT CW
Converting an improper fraction to a mixed number.
Type your fraction into the calculator and press equals.
Press
SHIFT
Followed by
S⇔D
Type your fraction into the calculator and press execute.
Press MENU and chose mixed fraction from the list.
Standard
Decimal
Improper Fraction
Mixed Fraction

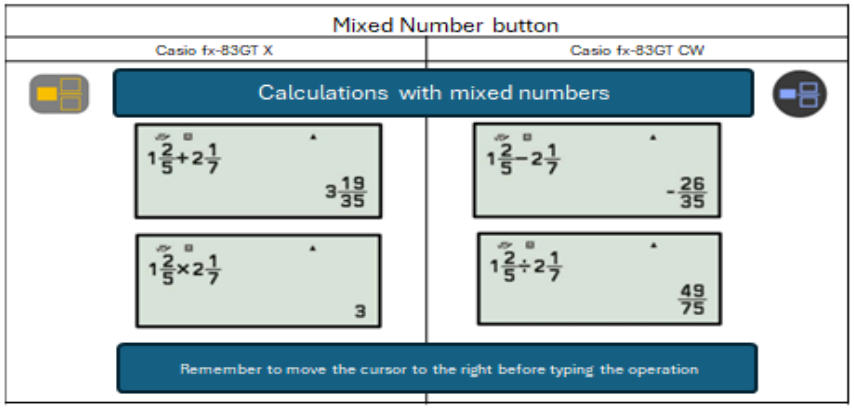
5


Fraction button
Casio fx-83GT X
Casio fx-83GT CW
Calculations work the same way on both calculators.
Remember to move the cursor to the right before typing the operation

6


Mixed Number button
Casio fx-83GT X
Casio fx-83GT CW
Converting a mixed number to an improper fraction
Press SHIFT
Followed by
Type in the mixed number
Press equals
Press shift and then the fraction button
Fill the boxes to type in your mixed number
Press execute
EXE

7


Mixed Number button
Casio fx-83GT X
Casio fx-83GT CW
Calculations with mixed numbers
Remember to move the cursor to the right before typing the operation

8

Fraction button

Casio fx-83GT X	Casio fx-83GT CW

Converting a mixed number to an improper fraction

Converting between fractions and decimals





Type your decimal into the calculator and press equals.

Press SHIFT S⇔D



Converting between fractions and decimals







9

Recurring decimal button

Casio fx-83GT X	Casio fx-83GT CW

Using the recurring decimal button

Convert $0.\dot{6}$ to a fraction

Type 0 . x^2

then fill the box with a 6 and press equals



Convert $0.\dot{2}\dot{8}$ to a fraction

Type 0 . x^2

then fill the box with 28 and press equals

(you do not need to put the box in twice)



Type 0 . then press ↑ $\blacksquare^{\blacksquare}$

This brings up the recurring decimal box



Now type the recurring decimals in the box and press execute.

10

Powers

Casio fx-83GT X	Casio fx-83GT CW

Square and cube

Instead of writing 4×4

Type 4 then x^2



Cubed 4^3

Instead of writing $4 \times 4 \times 4$

Type 4 then x^3



Instead of writing 4×4

Type 4 then $\blacksquare^2$



There is no cubed button. Use the any power button.

11

Powers

Casio fx-83GT X	Casio fx-83GT CW

Any power

Any Power 7^5

Instead of writing $7 \times 7 \times 7 \times 7 \times 7$

Type 7 press $x^{\blacksquare}$



then put a 5 in the box

Any Power 7^5

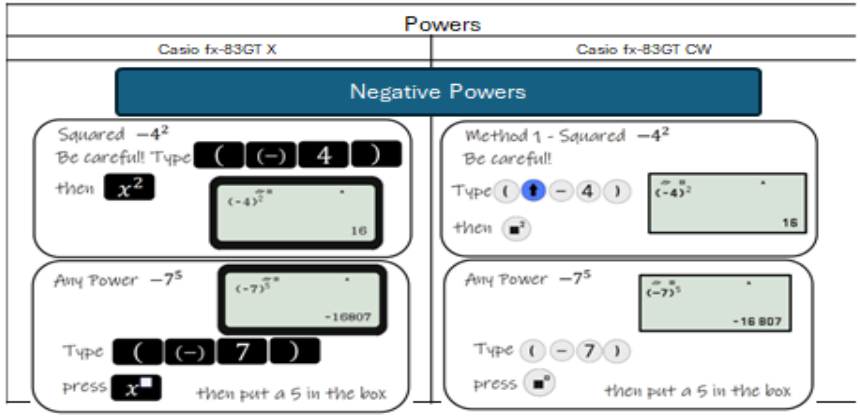
Instead of writing $7 \times 7 \times 7 \times 7 \times 7$

Type 7 press $\blacksquare^{\blacksquare}$

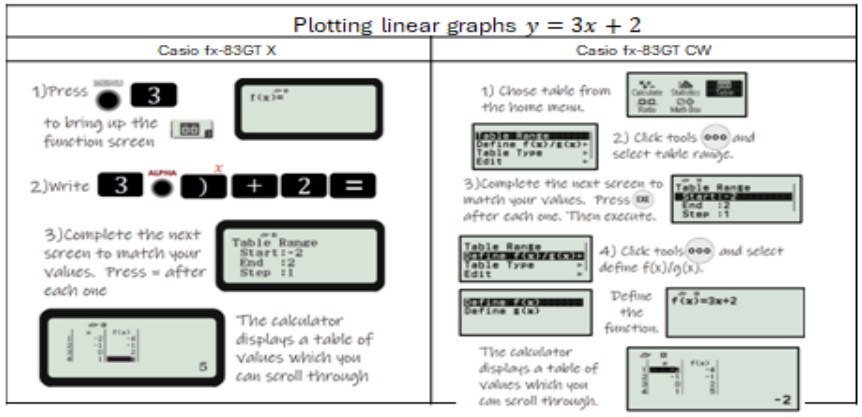


then put a 5 in the box

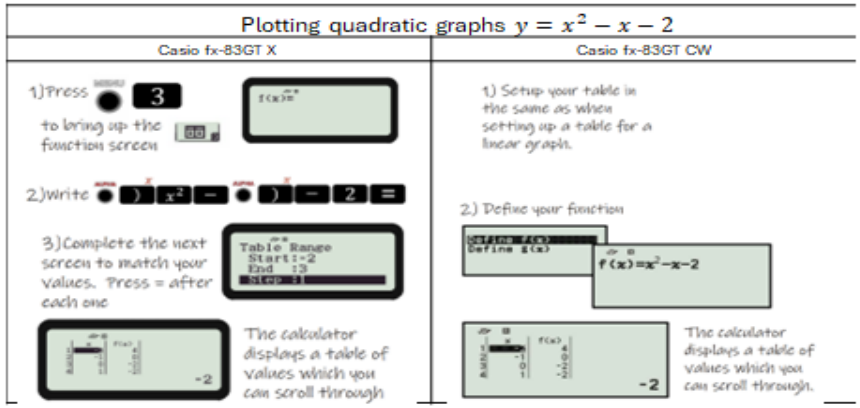
12


Powers
Casio fx-83GT X
Casio fx-83GT CW
Negative Powers
Squared -4^2
Be careful! Type ((−) 4)
then x^2
16
Any Power -7^5
-16807
Type ((−) 7)
press $x^{\square}$
then put a 5 in the box
Method 1 - Squared -4^2
Be careful!
Type ((−) 4)
then $\blacksquare^2$
16
Any Power -7^5
-16 807
Type (− 7)
press $\blacksquare^{\square}$
then put a 5 in the box

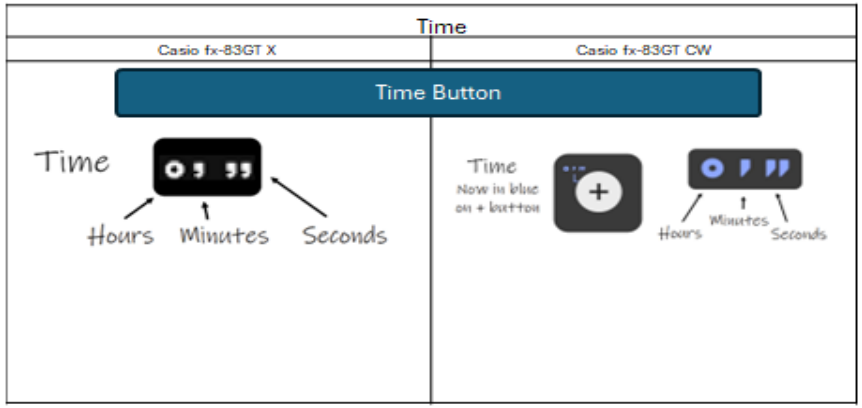
13


Plotting linear graphs $y = 3x + 2$
Casio fx-83GT X
Casio fx-83GT CW
1)Press 3
to bring up the function screen
2)Write 3 ALPHA X) + 2 =
3)Complete the next screen to match your values. Press = after each one
Table Range
Start :-2
End :2
Step :1
The calculator displays a table of values which you can scroll through
1) Chose table from the home menu.
2) Click tools and select table range.
3)Complete the next screen to match your values. Press after each one. Then execute.
4) Click tools and select define f(x)/g(x).
Define the function.
f(x)=3x+2
The calculator displays a table of values which you can scroll through.
-2

14


Plotting quadratic graphs $y = x^2 - x - 2$
Casio fx-83GT X
Casio fx-83GT CW
1)Press 3
to bring up the function screen
2)Write) x^2 −) − 2 =
3)Complete the next screen to match your values. Press = after each one
Table Range
Start :-2
End :3
Step :1
The calculator displays a table of values which you can scroll through
-2
1) Setup your table in the same as when setting up a table for a linear graph.
2) Define your function
Define f(x)
Define g(x)
$f(x)=x^2-x-2$
The calculator displays a table of values which you can scroll through.
-2

15


Time
Casio fx-83GT X
Casio fx-83GT CW
Time Button
Time
Hours
Minutes
Seconds
Time
Now in blue on + button
Hours
Minutes
Seconds

16

Time

Casio fx-83GT X	Casio fx-83GT CW

Using the time Button

Convert $2\frac{1}{4}$ hours to hours and minutes

Type in mixed number and press =

Now press



The calculator shows 2 hours, 15 minutes and 0 seconds

Convert $2\frac{1}{4}$ hours to hours and minutes

Type in mixed number and press EXE

Press SHIFT and chose sexagesimal.



17

Time

Casio fx-83GT X	Casio fx-83GT CW

Using the time Button

Convert 575 minutes to hours and minutes

Type 0 ° ' " 5 7 5 ° ' " =

The calculator shows 9 hours, 35 minutes and 0 seconds



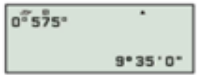
Convert 575 minutes to hours and minutes

Type 0 ▲ + This represents 0 hours

Type 5 7 5 ▲ + This represents 575 minutes

If there are 0 seconds you do not need to put these in.

Press EXE



This automatically changes the value to hours and minutes

The answer reads 9 hours, 35 minutes, 0 seconds

18

Time

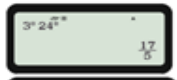
Casio fx-83GT X	Casio fx-83GT CW

Using the time Button

Convert 3 hours 24 minutes to hours

1) Type 3 ° ' " 2 4 ° ' " =

2) Press S⇔D button to change to an improper fraction



3) Press S⇔D button to change to a decimal



4) Press SHIFT ● S⇔D button to change to a mixed number



Convert 3 hours 24 minutes to hours

Type 3 ▲ + This represents 3 hours

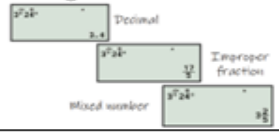
Type 2 4 ▲ + This represents 24 minutes

If there are 0 seconds you do not need to put these in.

Press EXE



Press SHIFT and chose the format you want



19

Time Calculations

Casio fx-83GT X	Casio fx-83GT CW

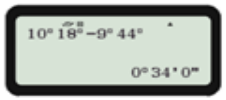
Difference in time between 10:18 and 9:44

For 1018 type

10 ° ' " 18 ° ' "

And you want to subtract the starting time of 0944

− 9 ° ' " 4 4 ° ' "



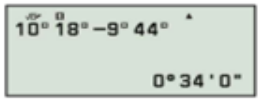
The calculator shows 0 hours, 34 minutes and 0 seconds

For 1018 type

10 ▲ + 18 ▲ + This represents 10 hours and 18 minutes

And you want to subtract the starting time of 0944

− 9 ▲ + 44 ▲ + EXE



The calculator shows 0 hours, 34 minutes and 0 seconds

20

Time button

Casio fx-83GT X

Speed Calculations

$$speed = \frac{Distance}{Time}$$

1) Press

2) Fill the distance of 450 in the numerator

3) Fill the denominator with the time calculation

11 0 – 9 30



Casio fx-83GT CW

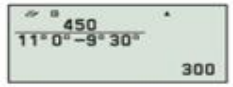
$$speed = \frac{Distance}{Time}$$

1) Press

2) Fill the distance of 450 in the numerator

3) Fill the denominator with the time calculation

11 0 – 9 30



Average speed = 300Km/h

21

Turn frequency on/off

Casio fx-83GT X

1) Press SHIFT MENU SETUP



2) Down Arrow



3) Press 1 for Statistics

4) Press 1 for on (or 2 for off)



This will set the calculator to have a frequency column

Casio fx-83GT CW

1) Press ⚙ and select statistics.

2) Choose either 1 variable or 2.

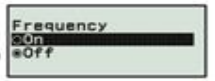


3) Click on the tools button



4) Click on frequency

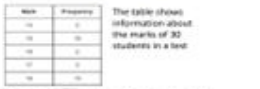
4) Choose where to turn the frequency on or off.



22

Mean from a table

Casio fx-83GT X



1) Press MODE then 2 for statistics

2) press 1 for 1 variable

3) Enter values into 1st column. Move across to enter frequency into 2nd column

DO NOT PRESS AC

4) Press OPTN then 3:1-Variable Calc



Mean $\bar{x} = 16.5$

Sum of values $\sum x = 495$

Number of values $n = 30$

Casio fx-83GT CW



1) Press ⚙ and select statistics.

2) Select 1 variable



3) Enter values into 1st column. Press EXE after each value. Move across to 2nd column to enter frequency into 2nd column.



Press EXE when all values are in the table.



Choose 1 variable



Mean $\bar{x} = 16.5$

Sum of values $\sum x = 495$

Number of values $n = 30$

23

Casio fx-83GT X

Ratio calculations work the same way on this calculator.

Use = instead of exe

Casio fx-83GT CW

Finding one part of a ratio from another part (1)

A packet of sweets is shared in the ratio 4 : 5. If the larger share is 60 sweets, how much is the smaller share?



Select ratio from the home screen

Select A:B=KP



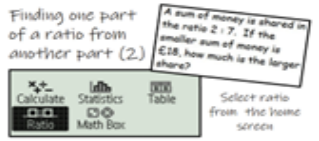


Change the first ratio to 4:5 and the D to 60 Type each number and press EXE each time

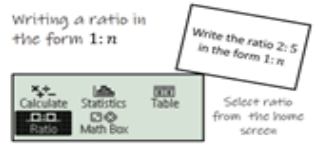
Press EXE again to get the value x.



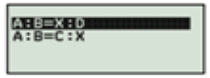
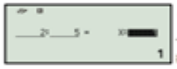
24

Casio fx-83GT X	Casio fx-83GT CW
Ratio calculations work the same way on this calculator. Use = instead of exe	Finding one part of a ratio from another part (2) A sum of money is shared in the ratio 2 : 7. If the smaller sum of money is £18, how much is the larger share?  Select ratio from the home screen Select A:B=C:X   Change the first ratio to 2:7 and the C to 18 Type each number and press EXE each time Press EXE again to get the value x. 

25

Casio fx-83GT X	Casio fx-83GT CW
Ratio calculations work the same way on this calculator. Use = instead of exe	Writing a ratio in the form 1 : n Write the ratio 2:5 in the form 1:n  Select ratio from the home screen Select A:B=C:X   Change the first ratio to 2:5 and the C to 1 Type each number and press EXE each time Press EXE again to get the value x. 

26

Casio fx-83GT X	Casio fx-83GT CW
Ratio calculations work the same way on this calculator. Use = instead of exe	Writing a ratio in the form n : 1 Write the ratio 2:5 in the form n:1  Select ratio from the home screen Select A:B=X:D   Change the first ratio to 2.5 and the D to 1 Type each number and press EXE each time Press EXE again to get the value x. 

27

PSHE – signposting support

Health and wellbeing

General health

nhs.uk

NHS non emergency 111
111.nhs.uk

Mental health

Kooth.com

beateatingdisorders.org.uk

mind.org.uk

giveusashout.org
text *'shout'* to 85258

youngminds.org.uk

Specific health conditions

cancerresearchuk.org

teenagecancertrust.org

adfam.org.uk

Personal safety

Alcohol and drugs

alcoholchange.org.uk

talktofrank.com
0300 123 6600

wearewithyou.org.uk

Violence and gangs

victimsupport.org.uk/you-co
0808 1689 111

isthisok.org.uk

stgilestrust.org.uk
020 7708 8000

General Safety

childline.org.uk
0800 11 11

Suffolk.police.uk

extremedialogue.org

Relationships and Sex Education

brook.org.uk

refuge.org.uk

mankind.org.uk

actonitnow.org.uk
01270 250 390

Online safety

Ceop.police.uk

reportharmfulcontent.com

General Support for young people

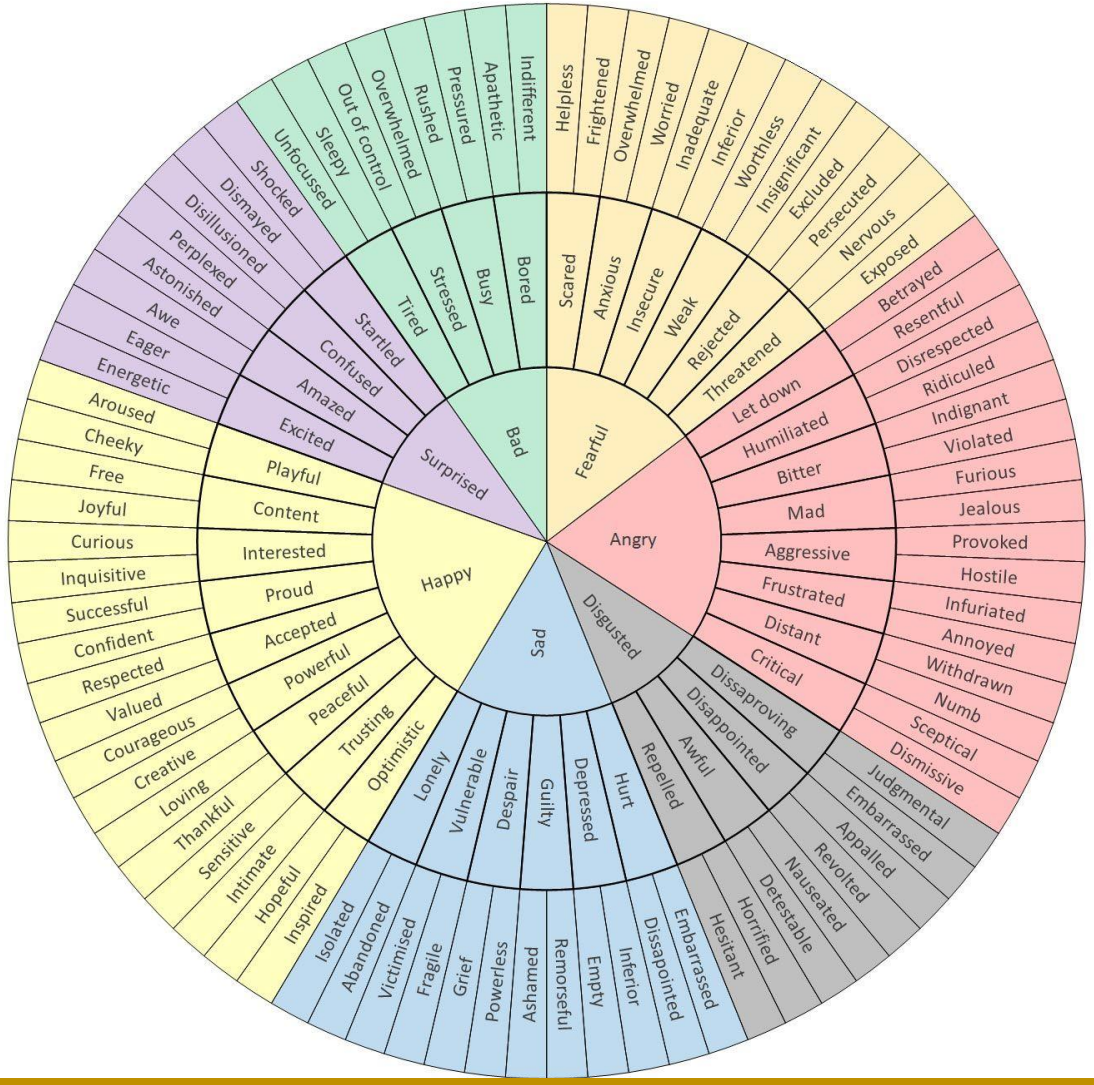
themix.org.uk
0808 808 4994

thesource.me.uk

Support for the LGBT+ Community

galop.org.uk

Further signposting support


Bad
Fearful
Angry
Disgusted
Sad
Happy
Surprised
Indifferent
Apathetic
Pressured
Rushed
Overwhelmed
Out of control
Sleepy
Unfocussed
Shocked
Dismayed
Disillusioned
Perplexed
Astonished
Awe
Eager
Energetic
Aroused
Cheeky
Free
Joyful
Curious
Inquisitive
Successful
Confident
Respected
Valued
Courageous
Creative
Loving
Thankful
Sensitive
Intimate
Hopeful
Inspired
Optimistic
Trusting
Peaceful
Powerful
Accepted
Proud
Interested
Content
Playful
Excited
Amazed
Confused
Startled
Bored
Busy
Stressed
Tired
Helpless
Frightened
Overwhelmed
Worried
Inadequate
Inferior
Worthless
Insignificant
Excluded
Persecuted
Nervous
Exposed
Scared
Anxious
Insecure
Weak
Rejected
Threatened
Let down
Humiliated
Bitter
Mad
Aggressive
Frustrated
Distant
Critical
Betrayed
Resentful
Disrespected
Ridiculed
Indignant
Violated
Furious
Jealous
Provoked
Hostile
Infuriated
Annoyed
Withdrawn
Numb
Sceptical
Dismissive
Dissaproving
Disappointed
Awful
Repelled
Judgmental
Embarrassed
Appalled
Revolted
Nauseated
Detestable
Horrified
Hesitant
Hurt
Depressed
Guilty
Despair
Vulnerable
Lonely
Embarrassed
Dissapointed
Inferior
Empty
Remorseful
Ashamed
Powerless
Grief
Fragile
Victimised
Abandoned
Isolated